VIA FACSIMILE ONLY TO 202-307-1545

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Re: U.S. v. Microsoft, Civil Action No. 98-1232

Date: January 28, 2002

No. of pages (including this sheet): 26

January 28, 2002

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The Honorable John Ashcroft
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950 Pennsylvania Avenue, N.W.
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The Honorable Charles A. James
Assistant Attorney General
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Mary Braden, Director
Departmental Ethics Office
U.S. Department of Justice
Room 6642
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Re: Comments of Relpromax Antitrust Inc. with respect to the Revised Proposed Final Judgment dated November 6, 2001, and filed in U.S. v. Microsoft, Civil Action No. 98-1232, United States District Court for the District of Columbia

Dear Ms. Hesse:

Defendant Microsoft has been found liable for multiple violations of Section 2 of the Sherman Act, 15 U.S.C. § 2. A proposal for a consent judgment (in the form of a Revised Proosed Final Judgment ("RPFJ") dated November 6, 2001, and signed for the United States by Charles A. James, Assistant Attorney General, Antitrust Division, United States Department of Justice) has

been submitted in the captioned civil action. As will be made clear below and has been made clear by others who have submitted comments, the RPFJ does not meet the requirements of law and makes a mockery of the judicial power.[1]

Assistant Attorney General James freely concedes that one of the products at issue is one of the necessaries of modern life. As Mr. James recently wrote:

> [The case] involves the signature product of the digital age, the Windows operating system, through which the vast majority of computer users worldwide interact with what has become a basic appliance in human life.[2]

The Act was named for Senator John Sherman (R. - Ohio). The following is what Senator Sherman told the Senate about concentrated economic power controlling the necessaries of life during the debate that led to the passage of the Sherman Act:

> If the concentered [concentrated] powers of [a trust] are intrusted to a single man, it is a kingly prerogative, inconsistent with our form of government, and should be subject to the strong resistance of the State and national authorities. If anything is wrong this is wrong. If we will not endure a king as a political power we should not endure a king over the production, transportation, and sale of any of the necessaries of life. If we would not submit to an emperor we should not submit to an autocrat of trade, with power to prevent competition and to fix the price of any commodity.[3]

INTRODUCTION

I am the President of Relpromax Antitrust Inc. I am an economist by education and experience. I received a Ph.D. in economics from Princeton University and an A.B. in economics

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[1] See, among others, the Comment (dated January 17, 2002) of Robert E. Litan, Roger D. Noll, and William D. Nordhaus on the Revised Proposed Final Judgment and the letter (dated January 24, 2002) on behalf of the American Antitrust Institute by Albert A. Foer, Robert H. Lande, Norman W. Hawker, and Oded Pincas.

[2] Charles A. James, *The Real "Microsoft" Case and Settlement*,16 Antitrust 58 (ABA Fall 2001) (a copy of the article is attached as Exhibit 12).

[3] Congressional Record, Senate, March 21, 1890, page 2457.

from the University of California at Davis. I taught economics at Cleveland State University, Central Michigan University, and Kansas State University. I was a post-doctoral research fellow at Wayne State University. At Kansas State University, I was a Visiting Assistant Professor and taught a course in industrial organization economics. I have worked as an economic analyst at the Illinois Commerce Commission which regulates public utilities.

EXECUTIVE SUMMARY

1. My analysis of the competitive impact of the RPFJ using a computerized model demonstrates that the law requires a structural remedy splitting Microsoft into at least two (2) competing companies if the compensation for the executives of these companies is based on relative profit maximization (RPM). A re-structuring into at least three (3) competing companies if the compensation for the executives of these firms is based on absolute profit maximization (APM).

2. The conduct of the United States Department of Justice and Microsoft with respect to the RPFJ since about September, 2001, has demonstrated contempt for the Court and the statutory rights of all Americans.

3. The RPFJ affimatively declares that it creates no rights for Original Equipment Manufacturers (OEMs), Covered OEMs, Internet Access Providers (IAPs), Internet Content Providers (ICPs), Independent Hardware Vendors (IHVs), or Independent Software Vendors (ISVs).

4. The RPFJ will not stop Microsoft's violations of the antitrust laws, prevent a recurrence, restore competition to the market, or deny Microsoft the fruits of its illegal conduct..

5. To avoid a conflict of interest or the appearance of impropriety, the Attorney General, the Assistant Attorney General in charge of the Antitrust Division, and all other political nominees or appointees of the current Administration should recuse themselves from any further involvement in matters related to Microsoft; the authority to continue to represent the United States should be

delegated to a non-political career trial attorney of the Antitrust Division of the Justice Department pursuant to 28 U.S.C. § 510 by a career employee of the Justice Department acting as the delegatee of the Attorney General.

DISCUSSION

A. The Violations of Law and What The Remedy Must Do By Law

The Antitrust Procedures and Penalties Act (Tunney Act) governs this court's consideration of the RPFJ.

The Tunney Act was signed on December 21, 1974, to remedy one of the many abuses of power which led to the adoption of the second of three Articles of Impeachment of the President by the Committee on the Judiciary of the United States House of Representatives on July 27, 1974, and to the only Presidential resignation in the history of our nation on August 9, 1974. The Tunney Act is not merely some procedural nicety.

The Tunney Act was intended to protect all Americans against an abuse of the antitrust settlement power. See Exhibit 10 hereto, pages 13-22.

In a unanimous 7-0 decision, the United States Court of Appeals for the District of Columbia Circuit found Microsoft liable for multiple violations of 15 U.S.C. § 2 due to unlawful maintenance of a monopoly. U.S. v. Microsoft, 253 F.3d 34 (D.C. Cir. 2001).

The violations of law related to anti-competitive restrictions on OEMs, the integration of Internet Explorer with Windows, exclusionary agreements with IAPs, anti-competitive agreements with ISVs, dealings with Apple Computer, First Wave agreements with ISVs, the fraudulent deception of software developers using Java, and threats to Intel.

By law, the remedy must stop the violations, prevent a recurrence, restore competitive conditions in the market, and deny to Microsoft the fruits of its statutory violation.

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Given that the United States won a judgment sufficient to support these remedies, it is not in the public interest for this Court to rubber stamp its approval on a sweetheart deal to protect a campaign contributor to both the Attorney General and the President who put the Attorney General and Assistant Attorney General in charge of the Antitrust Division in their current offices. See Exhibit 10 hereto, pages 16-18, 21, and 25, and Attachments 1 and 9-43 to the Dautch Declaration which is Exhibit A to Exhibit 10 of this letter.

The Court of Appeals suggests, U.S. v. Microsoft, 253 F.3d 34, 107 (D.C. Cir. 2001) that:

> If the Court on remand is unconvinced of the causal connection between Microsoft's exclusionary conduct and the company's position in the OS market, it may well conclude that divestiture is not an appropriate remedy.

It follows that if the Court is convinced of the causal connection, the Court may conclude that divestiture is an appropriate remedy.

Pursuant to 15 U.S.C. § 16(e), this Court must make a determination that entry of the RPFJ is in the public interest. The statute provides, in pertinent part, that for the purpose of making a decision on whether entry of the RPFJ is in the public interest, the court may consider:

> (1) the competitive impact of such judgment, including termination of alleged violations, provisions for enforcement and modification, duration or relief sought, anticipated effects of alternative remedies actually considered, and any other considerations bearing upon the adequacy of such judgment;
>
> (2) the impact of entry of such judgment upon the public generally and individuals alleging specific injury from the violations set forth in the complaint including consideration of the public benefit, if any, to be derived from a determination of the issues at trial.

The Court may consider other issues it deems relevant also and is not limited to the considerations set forth in the statute. Some of these issues are discussed below.

1. The Model

After the United States failed to comply with its legal obligation under the Tunney

Act to provide an analysis of the competitive impact of the RPFJ, I prepared a computerized model for the analysis of the competitive impact of the RPFJ. The model is described in detail in Exhibit A hereto.

This economic model considers and calculates the effects on competition of both conduct-only remedies and structural remedies. The model calculates, in dollar terms, the competitive impact of alternative remedies under various sets of assumptions. The model calculates the dollar value of such important economic quantities as consumer surplus, profits of Microsoft and competitors, and total surplus. The main conclusions are 1) only a structural remedy can fully repair the economic damage which Microsoft has caused, and 2) most structural remedies require additional measures to reduce or eliminate the "fruits" of Microsoft's unlawful "victories."

2. **The Conduct of the United States and Microsoft Has Been Contumacious**

As discussed in Exhibits 10 and 11 hereto, both the United States and Microsoft have defied the court and denied the public the information they are statutorily entitled to have to assess the RPFJ.

3. **The RPFJ Explicitly Denies Any Protection To Third Parties**

After purporting to create rights and protections for OEMs, ISVs, IHVs, ISPs, and ICPs, among others, the RPFJ takes it all away in the last section (section VIII) which states:

> Nothing in this Final Judgment is intended to confer upon any other persons any rights or remedies of any nature whatsoever hereunder or by reason of this Final Judgment.

Entry of the RPFJ would make a mockery of the judicial power.

There are a host of other problems with the RPFJ, some of which are due to a lack of econoic analysis.

For example, paragraph 2 of the Revised Proposed Final Judgment says, "[T]his Final

Judgment does not constitute any admission by any party regarding any issue of fact or law." This provision is not in the public interest, and is partial evidence that this consent agreement is a sweetheart deal. Microsoft has been duly convicted of serious antitrust violations, and many of these convictions were upheld by the Appeals Court. The Appeals Court for the District of Columbia is widely perceived to be more conservative on antitrust issues than the Supreme Court. There is virtually no chance that the Supreme Court will overturn those convictions which the Appeals Court has upheld.

The failure to obtain an admission of guilt, under these circumstances, is really quite remarkable. It requires some explanation for why it is in the public interest to accept an agreement with no admission of guilt. The Competitive Impact Statement provides no such explanation. Also no estoppel against Microsoft for private parties.

Another example is the proposed set-up is that the work of the TC is completely secret. Section IV.B.9. requires that the TC's work be kept secret. Section IV.B.10. prohibits the TC members from making public statements. Section IV.D.4.d. requires that everything the TC does must be kept secret, and that TC members may not testify about their work. Section IV.B.8.g. does allow TC members to communicate to third parties "how their complaints or inquiries might be resolved," but requires confidentiality of all information obtained from Microsoft. The work of the TC, whether good or bad, is not subject to any public check or verification. Such secrecy allows a corrupt DOJ to hide the fact that no enforcement actions against violations by Microsoft are being undertaken. All this secrecy gives no confidence to the public, or to potential complainants, that their complaints will be resolved fairly or expeditiously. This is especially so, given the widespread perception among Microsoft's would-be competitors that this agreement is essentially a sweetheart deal.

By way of further example of lack of economic analysis in the Competitive Impact Statement, consider the following.

A thorough reading of both the Stipulation and the Competitive Impact Statement indicates that neither document contains any substantive economic analysis of any kind whatsoever. Nor is there any reference to any document which does contain any substantive economic analysis. This is a very serious omission, which is not permitted with respect to other types of proposed government regulation. This omission prevents both the Court and the public from having any genuine basis by which to declare this agreement to be in the public interest. Accordingly, for this reason alone, review of the proposed agreement should be postponed, at least until such time as the Department of Justice revises its Competitive Impact Statement to provide such analyses.

The very words, "Competitive Impact Statement," suggest an attention to the economic impacts of competition or lack of competition. The nature of these possible impacts is well known. There can be competitive impacts on prices, sales quantities, costs, quality of products or service, number of competitors, market shares of competitors, the number and variety of products, and other impacts of competition, imperfect competition, or no competition. There is a whole field of economics, "industrial organization," which is specifically devoted to analyzing these impacts. Many of the economists who are employed by the Antitrust Division of the Department of Justice have studied industrial organization. The Department of Justice has access to numerous consulting economists. It is therefore quite surprising, indeed quite incongruous, that the DOJ would issue a "Competitive Impact Statement" in the very major case before us, which is so completely devoid of any substantive economic analysis.

In accordance with well-established practice, the Court should require prior publication of a substantive economic analysis as part of the government's "Competitive Impact Statement" and

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allow 60 days for public comments thereafter.

Certainly, there needs to be a quantitative assessment of the likely competitive impacts of the various remedy alternatives. Whether this quantitative assessment should be called "cost-benefit analysis" or something else is not the primary issue. The primary issue is whether the quantitative analysis of potential remedies illuminates the equity criteria enunciated by the Supreme Court for the resolution of antitrust cases. One important equity criterion is whether a proposed remedy eliminates the "public injury" from unlawful conduct. This requires a quantitative assessment of past and prospective injuries, and a quantitative assessment of how particular remedies reduce or eliminate that injury. Another important equity criterion is whether the monopolist has been deprived of the fruits of an unlawful victory. This requires a quantitative measure of how large those "fruits" are and how effective each remedy would be in reducing or eliminating such fruits.

The government provides no economic analysis at all. There are no facts, figures, statements, tables, or economic models concerning Microsoft's costs, prices, revenues, or profits. There is no projection of costs, prices, revenues, profits, or consumer surplus under various alternative scenarios or remedies. Nor is there any economic analysis of any other competitive impacts, real or imagined, which might flow from this proposed remedy or alternative remedies. There is, in short, no genuinely substantive "Competitive Impact Statement" which the public may either approve or critique.

Without an economic analysis, there can be no substantive statement of competitive impacts. 15 U.S.C. § 16(b) requires filing a competitive impact statement. Clause (3) requires "an explanation of the proposal..., including...the anticipated effects on competition of such relief."

There are areas 1) where an economic analysis would have been useful, but was not provided, and 2) where weakness in the agreement suggests that the whole agreement is, and was

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perhaps intended to be, essentially a sweetheart deal.

Fo example, Microsoft's predatory acts were undertaken for the purpose of maintaining its highly profitable monopoly. Microsoft's profit from these acts may be counted in the billions of dollars. Only multi-billion dollar fines on Microsoft for failure to obey the terms of the consent agreement can fully deter rational disobedience. The Competitive Impact Statement provides no indication that the settling Plaintiffs contemplate fines of this magnitude, nor is there any economic analysis in the CIS which shows that fines of this size are not needed. If fines in the billions of dollars are contemplated, the DOJ ought to say so. We may presume that Microsoft will gladly pay its attorneys even as much as $100 million to avoid a multi-billion dollar fine. Continued litigation by Microsoft is virtually assured. If fines of this magnitude are not contemplated, how does the DOJ intend to enforce this agreement?

By way of further example, the only "penalty" specified in the consent agreement for disobedience to the agreement is to extend the term of the agreement for an additional two years (Section V.B.). However, it would seem to be common-sense economics that if five years of an ineffective regime is insufficient to deter unlawful behavior, then an additional two years of the same ineffective regime is unlikely to deter the unlawful behavior. A more sensible "penalty" would be a five-year extension, renewable indefinitely, not just once. In addition, real penalties for disobedience should be instituted. For example, a fine equal to triple the value of expected profits from uncaught disobedience might be imposed. The proposed "penalties" of this agreement also constitute partial evidence that, in reality, this is a "sweetheart" agreement which the political leadership of the DOJ has no intention of seriously enforcing.

By way of yet further example, section III.B. requires Microsoft to post and publicize uniform licensing terms. This affirmative obligation is all well and good. However, there are some

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puzzles here, which the Competitive Impact Statement does little to elucidate.

First, Section III.B.2. allows the schedule to "specify reasonable volume discounts." However, neither the agreement nor the Competitive Impact Statement specifies what constitutes a "reasonable" volume discount. Can there exist any set of volume discounts which is "unreasonable"? If the answer is yes, presumably the DOJ can provide examples of "unreasonable" volume discounts, and a methodology (presumably based on economics) for determining whether volume discounts are either "reasonable" or "unreasonable." However, the Competitive Impact Statement (pages 27-29) provides neither examples nor methodology. If the answer is no, what is the purpose of this term "reasonable"? This is one place where an economic analysis is indicated, if only to clarify the meaning of this agreement.

Second, Section III.B.3.a. makes a distinction between the top ten Covered OEMs, and the second ten Covered OEMs, and allows two different uniform schedules. Since the uniform schedules already permit "reasonable volume discounts," what is the purpose of further distinguishing the size of the OEMs? This additional and unneeded flexibility simply gives Microsoft further opportunities for discrimination and retaliation. If Microsoft is especially interested in punishing one particular firm, Microsoft may punish ten firms, while falsely claiming to be nondiscriminatory. While this opportunity to discriminate may not be especially valuable, why offer this opportunity in the first place? Uniform schedules for everyone is the better approach.

Third, Section III.B. only applies to 20 Covered OEMs. Section VI.D. defines these Covered OEMs as those manufacturers of personal computers who had the largest purchases of Windows Operating System Products during the previous fiscal year. However, why are these uniform schedules applicable only to the top 20 OEMs? Why not simply apply the uniform schedules to anybody who wishes to purchase Windows Operating Systems, whether an OEM or not? Also, why

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should these uniform schedules apply only to OEMs who previously purchased Windows Products? It is the essence of non-discrimination that OEMs should not be penalized for using non-Microsoft products. Yet, if an OEM uses a competitor's product, it may find itself in the group of non-Covered OEMs. This does not aid the professed goal of preventing discrimination and retaliation.

Explanations for these various oddities are required. An economic analysis of these oddities would be even better. What is the past and projected market share of the top ten OEMs? What is the past and projected market share of the second ten OEMs? What is the past and projected market share of all remaining wholesale and retail purchasers of Windows products? What differences in competitive outcomes does the DOJ expect for the various possible rules concerning the uniform schedules? This economic analysis should have been provided as part of the Competitive Impact Statement.

Another example is as follows: Section III.D. requires Microsoft to disclose APIs and related documentation to all its Windows Operating System Products and its Microsoft Middleware. This affirmative obligation is also well and good. Again, however, there are some puzzles, which the Competitive Impact Statement does little to elucidate.

First, there are the timing differences on when these disclosures must be made. In the case of Microsoft Middleware, it is the "last major beta test release," which is not further defined. Presumably, the last beta test release could be a mere few weeks before the commercial sale of the product, which is not much advance notice to developers and competitors. For a new Windows Operating System Product, these disclosures must occur in a "Timely Manner," which is further defined as the first beta test version that is distributed to 150,000 or more beta testers. Is it possible that Microsoft might therefore choose to beta test future versions of its operating systems with fewer that 150,000 beta testers? The Competitive Impact Statement (pages 33-35) provides no explanation

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for these differences in timing. Nor does it provide any economic analysis concerning whether Microsoft will henceforth have an incentive to "game" these restrictions to avoid the intended competitive impact on its future behavior. Nor has the DOJ provided any economic analysis of how possible changes in the timing of API disclosures would affect the competitive impacts.

Second, there is the timing of disclosures for Windows XP. This disclosure must occur upon release of the first Service Pack, or within twelve months, whichever is earlier. It is not explained whether or why Microsoft needs twelve months to provide its disclosures. If this amount of time is not needed, a lesser time interval should have been provided. However, if several months time is needed, then this necessarily delays Microsoft's issuance of Service Pack 1.

Recent newspaper accounts indicate that Windows XP (and some prior products) has a very serious bug which can allow a malicious hacker to take control of thousands of computers running Windows XP. This circumstance would ordinarily imply that Microsoft is under very serious pressure to issue its first Service Pack on an emergency, expedited basis. However, if the required disclosures take too much time to prepare, then Section III.D. harms both Microsoft and the public. If a proper economic analysis had been performed, this oddity of the agreement likely would have been exposed and corrected before being submitted to the public. In any case, without a published economic analysis, it is difficult to decipher why the DOJ thought this provision made good sense.

Yet another example of missing information arises from section VI.J. which provides a confusing definition for "Microsoft Middleware." In the consent agreement, the four conditions within the definition are combined with the word "and." However, the Competitive Impact Statement (pages 17-19) explains this term in a manner which suggests that these four conditions ought to be combined with the term "or," not "and." The Competitive Impact Statement (pages 18-19) discusses the situation where Microsoft might choose to divide up its redistributables in such

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manner that the fourth condition is not met, or even not provide a redistributable, yet the Competitive Impact Statement suggests that such non-qualifying software code is included under the definition. Either all four of the conditions must be present to qualify as "Microsoft Middleware" (an "and" requirement) or only some of the four conditions need be present (an "or" requirement). If the Competitive Impact Statement is correct, then the language of the Stipulation requires revision (or vice versa). Very likely, if the Competitive Impact Statement is correct, then the language of the Stipulation needs to be more extensively revised than simply replacing "and" with "or."

Since this defined term "triggers Microsoft's obligations" (page 17 of the Competitive Impact Statement), it is important that the public and the Court be provided with a clear conception of what this term means. It is difficult for me, or any other member of the public, to comment on the suitability of an agreement which might mean one thing, or might mean another thing. In view of this apparent error regarding a key matter, I would suggest that the DOJ revise the Stipulation, revise the Competitive Impact Statement, or both, and resubmit to the public for further comment.

Section VI.T. provides a definition of "Trademarked" as used in the consent agreement. Pages 22-23 of the Competitive Impact Statement elucidate this definition further. The Competitive Impact Statement makes much of the supposition that Middleware is Trademarked, or if not Trademarked then it is not Middleware. Is this a distinction with a difference, or that will make a difference? Here is one place where an economic analysis would be useful, both to clarify whether this is a substantive part of the agreement, and if it is substantive, the likely competitive impacts of this provision of the agreement.

Obviously, there are many other provisions of this consent agreement for which an economic analysis of competitive impacts would have been useful. Such economic analysis would have been

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useful, both to clarify the meaning of the agreement, and to help educate the Court and the public on the expected or intended competitive impacts of the agreement. In addition, such economic analyses would have provided a framework upon which the public, in its commentary on the alleged competitive impacts, might accept, modify, or reject. As it is, the public is left with many questions and no answers; the public is given the unfair burden of developing its own economic models for

4. The RPFJ Does Not Meet The Minimum Requirements Of Law

As many commentators have noted, the RPFJ does not accomplish the four goals of antitrust remedies.

Further, by not entering an admission of guilt, Microsoft is presumably free to engage in the same anti-competitive practices enjoined by the agreement, after the five (or seven) year term is completed. This means that if Microsoft continues these anti-competitive practices after the term of the agreement is finished, the antitrust authorities must prove anew that these are unlawful practices. Since there is no assurance that a competitive market will be restored within five years, and no assurance that Microsoft will no longer be the dominant firm in these markets, renewal of these practices would be detrimental to the public. Also, the expectation that these practices may be renewed at the end of the five-year term puts a damper on competitors' beliefs that Microsoft is truly enjoined from retaliation, since Microsoft can simply wait before retaliating. This consent agreement essentially throws away Microsoft's conviction.

The proposed five-year term is by no means long enough. A Final Judgment was entered in 1995 and expires on February 21, 2002. Exhibits 2, 3, and 4 hereto explain the problems with the prior FJ. From the Declaration of Brain Dautch attached hereto as Exhibit 5, it appears that Microsoft may still be engaging in the banned per processor licensing. In any event, the prior FJ did not restore competition to the market for operating systems.

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Microsoft has maintained its dominant monopoly position for a period of over ten years. There is no reason to suppose that Microsoft's dominant position will suddenly evaporate as a result of this consent agreement. So long as Microsoft remains the dominant firm, restrictions on its conduct will continue to be necessary. A far better approach for the conduct remedy is to institute a ten-year term, renewable indefinitely at ten-year intervals. If during the term of the conduct remedy Microsoft no longer has dominance in the industry (e.g., has less than 30% market share), Microsoft may petition the Court for relief from the conduct restrictions.

Further, even assuming that the notion of setting up a Technical Committee to investigate complaints is inherently justifiable, there are obvious problems with this particular proposed set-up. The first problem is that Microsoft is allowed to choose half the investigators (Section IV.B.3.). Microsoft's appointment of an internal Compliance Officer (Section IV.C.), as well as its own regular attorneys, should be sufficient protection for Microsoft; Microsoft does not need to appoint half the investigators. I am unaware of any administrative agency for investigating discrimination and retaliation complaints which is set up in such a manner that the accused discriminator or retaliator is allowed to choose half the investigators. This provision by itself constitutes partial evidence that this is a corrupt, sweetheart deal between DOJ and Microsoft. Microsoft should play no role in the selection of TC members.

Further, with regard to discrimination, the consent agreement appears deficient, because it does not overflow with objectively verifiable, affirmative obligations upon Microsoft. In the whole of Section III, "Prohibited Conduct," only sub-sections III.B. and III.D. require any affirmative obligation by Microsoft. The remaining sub-sections of Section III either do not impose obligations (Sub-section J) or are suffused with anti-discrimination and anti-retaliatory language (Sub-sections A, C, E, F, G, H, and I). In the absence of considerable amounts of trust and goodwill by both

Microsoft and its competitors, such provisions may prove either unenforceable or enforceable only after extensive litigation. The delays inherent in a) first having a TC investigation, and b) perhaps followed by litigation, provide cold comfort to any competitor or would-be competitor who may experience or fear discrimination or retaliation by Microsoft.

Labor economists have analyzed discrimination for decades. One economic proposition concerning discrimination is that its effects are likely to be worse in monopoly markets than in competitive markets. If a monopolist discriminates, one must suffer the discrimination, because there is no one else to do business with. However, if one of many competitors discriminates, one may still attempt to do business with the others. Even if half of all employers discriminate, minorities may still find employment on favorable terms with the other half of the employers.[4]

This simple economic proposition has a clear application in this case. If one's primary concern is to prevent discrimination and discriminatory retaliation by Microsoft, the best way to achieve this objective is through a structural remedy: Break up Microsoft into two or more firms. Eliminate the monopoly, and the threat of discrimination and retaliation loses its fearsome power, and also becomes mostly unprofitable. Not performing a structural remedy means that discrimination and retaliation is both profitable for Microsoft and fearsome to Microsoft's would-be competitors. This consent agreement fails to use the most efficacious means to achieve its primary objective. The most likely result of the consent agreement is continued fear, continued discrimination, continued retaliation, continued litigation, and continued monopoly.

Labor economists also know that under a wide variety of economic assumptions and circumstances, discrimination against minority workers is an unprofitable activity for employers.

[4] In a competitive market, the result is segregation of minority workers into separate firms, but not lower wages, assuming equal skill by the minority workers.

The outlawing of unprofitable activities is easier to enforce than the outlawing of profitable activities. Even though the laws against discriminatory motives are inherently difficult to enforce, their enforcement is aided by the fact that employment discrimination is normally not profitable. This is not the circumstance for discriminatory acts by Microsoft.

5. Appearance Of A Conflict Of Interest

Microsoft has made an investment of about $23 million in politicians from 1997 to 2001. See Exhibit A (Dautch Dec. and attachments) to Exhibit 10 hereto.

Given an estimated value of AOL's private antitrust suit against Microsoft in the neighborhood of $20 billion, Microsoft may be about to earn close to a 1000 to 1 on just the AOL suit.

The Attorney General and Assistant Attorney General along with the other political nominees or appointees of the current Administration should consider recusing themselves and leaving further consideration of this matter to the career employees of the Antitrust Division.

LIMITED COPYRIGHT LICENSE

For the sole purpose of allowing the United States (including all three branches of the government) to analyze these comments, to publish these comments in the Federal Register and to file a copy of these comments with any courts it deems appropriate (including the United States District Court for the District of Columbia), I hereby grant the United States a time-limited non-transferable royalty free non-exclusive license without the right to sublicense and without the right to enforce limited to the purposes stated herein to make such copies of the copyrighted material as are necessary:

1) to publish the copyrighted computer programs submitted as part of these comments in the Federal Register;

2) to make such copies of the computer programs as are necessary to file a copy of

these comments with the United States District Court for the District of Columbia; and,

3) to run and modify only the inputs and source code to the computer programs for the purpose of preparing a response to these comments or for the purpose of analyzing these comments (no license to create a derivative work is granted by this license).

The limited copyright license granted hereby terminates one day after the last possible day to file any appeal in any court from the entry of the RPFJ or termination of consideration of the RPFJ in U.S. v. Microsoft, Civil Action No. 98-1232, presently pending in the U.S. District Court for the District of Columbia.

B. The Public Interest

The Public interest is in seeing that the laws are fairly and fully enforced by impartial law enforces without regard to the political or other connections of the alleged violators of the law. Entry of the RPFJ is not in the public interest for many reasons as discussed above and by many of the other commentators on the RPFJ such as Drs. Litan, Noll, and Nordhaus and the American Antitrust Institute. The RPFJ will not stop the antitrust violations. The RPFJ will not prevent a recurrence of the current violations or very similar violations. The RPFJ will not unfetter the market from predatory anti-competitive conduct. The RPFJ will not deny to Microsoft the fruits of it illegal conduct.

The RPFJ, if entered, will make a mockery of the judicial power. The RPFJ may send a clear message to all Americans that if you violate the law and then contribute enough money to the party in power, you may be able to operate outside the law indefinitely and profitably. The RPFJ may undermine public confidence in the fairness and ability of the Department of Justice. It is not in the public interest to achieve the ends set forth in this paragraph.

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CONCLUSION

Entry of the RPFJ is not in the public interest. The court should refuse to approve or enter the RPFJ. In order to avoid a conflict of interest or the appearance of impropriety due to the massive amount of campaign contributions by Microsoft to the current Administration and its leaders, the Attorney General and the other nominees or appointees of the current President or Attorney General should recuse themselves from any further consideration of this matter and delegate further consideration to career lawyers in Antitrust Division all of whom should be protected by this Court in advance (in addition to any statutory rights they may have) against reprisals by the political nominees and appointees.

While many issues are raised by these comments, we hereby specifically request a response to questions and issues including, but not in any way limited to, the following:

1. Does Attorney General Ashcroft intend to recuse himself from any further involvement in matters involving Microsoft and, in particular, U.S. v. Microsoft, Civil Action No. 98-1232, presently pending before the U.S. District Court for the District of Columbia? If so, when? If not, why not?

2. Does Attorney General Ashcroft intend to recuse (or remove) any political appointees serving under him in the Department of Justice from any further involvement in matters involving Microsoft and, in particular, U.S. v. Microsoft, Civil Action No. 98-1232, presently pending before the U.S. District Court for the District of Columbia? If so, which appointee or appointees? If so, when? If not, why not?

3. Does Assistant Attorney General James intend to recuse himself from any further involvement in matters involving Microsoft and, in particular, U.S. v. Microsoft, Civil Action No. 98-1232, presently pending before the U.S. District Court for the District of Columbia? If so, when?

If not, why not?

4. If he remains involved in U.S. v. Microsoft, does Assistant Attorney General James who has personal knowledge that a non-counsel of record (e.g. Charles F. Rule, Esq.) engaged in undisclosed written and/or oral communications on behalf of Microsoft with officers and/or employees of the United States (specifically officers and/or employees of the Department of Justice) concerning or relevant to the RPFJ (including negotiations leading to agreement on the terms of, and the signing of, the RPFJ) intend to sign and file with the United States District Court for the District of Columbia a certification of compliance (as ordered by the Court on November 8, 2001) with the requirements of the Antitrust Procedures and Penalties Act (Tunney Act): 15 U.S.C. § 16(b)-(h)? If he remains involved in U.S. v. Microsoft and Microsoft does not amend the Microsoft Description and Assistant Attorney General James does not sign and file a certificate of compliance himself, does he intend to order or allow one of his subordinates to sign and file such a certificate of compliance? Why did Assistant Attorney General James sign the Stipulation and RPFJ (both dated) November 6, 2001, but not the CIS?

5. Does the United States intend to amend and publish in the Federal Register an amended Competitive Impact Statement ("CIS")? If so, when? If not, what is the basis for the United States' position that the current CIS complies with 15 U.S.C. § 16(b)(3), (4), and (6)?

PROTEST AND RESERVATION OF RIGHTS

This letter including the exhibits, attachments, and enclosures to and with this letter all of which are hereby incorporated fully by reference herein constitute the comments by Relpromax Antitrust Inc. ("Relpromax") pursuant to the notice published by the United States at Fed. Reg. 59452, Vol. 66, No. 229 (Nov. 28, 2001) and pursuant to 15 U.S.C. § 16(b) with respect to the Revised Proposed Final Judgment dated November 6, 2001, and filed in U.S. v. Microsoft, Civil

Action No. 98-1232, presently pending before the United States District Court for the District of Columbia.

Relpromax has filed with the United States District Court for the District of Columbia two motions related to these comments, certain statutory deadlines, and a court Order related to these comments. The first motion seeks, among other things, an order to compel Microsoft to meet its disclosure obligations under 15 U.S.C. § 16(g). A copy of the brief (including exhibits and attachments) in support of the first motion ("Memorandum Of Points And Authorities In Support Of The Motion Of Relpromax Antitrust Inc. For Limited Participation As An Amicus Curiae And For An Extension Of Time") is attached hereto as Exhibit 10 and incorporated herein fully by reference. The second motion seeks, among other things, an order to compel the United States of America ("United States") to meet its obligations with respect to a Competitive Impact Statement ("CIS") under 15 U.S.C. § 16(b). A copy of the brief in support of the second motion ("Memorandum Of Points And Authorities In Support Of The Motion Of Relpromax Antitrust Inc. For Limited Participation As An Amicus Curiae And For An Extension Of Time On The Grounds That The United States Has Not Provided A Competitive Impact Statement In Compliance With The Requirements Of 15 U.S.C. § 16(b) ") is attached hereto as Exhibit 11 and incorporated herein fully by reference.

The failures of the United States and Microsoft to comply fully with the requirements of the Antitrust Procedures and Penalties Act ("Tunney Act"), 15 U.S.C. § 16(b)-(h), have kept Relpromax and the public generally from receiving all the information that is required by statute to be provided no less than sixty (60) days (in the case of the CIS) and fifty (50) days (in the case of Microsoft's disclosures) before the deadline for filing these comments. Accordingly, these comments are filed under protest, with a full reservation of all rights available to Relpromax, and must be viewed as

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preliminary and subject to amendment or expansion if and when additional public disclosures are made by the United States or Microsoft or by third parties making available information which should have been made available by either the United States or Microsoft.

We look forward to receiving the response of the United States to the foregoing and to the publication of all of these comments (including the exhibits and attachments submitted herewith all of which are again incorporated by reference) in the Federal Register and to the submission of these comments to the court by the United States.

Thank you very much for your attention to this matter.

Sincerely,

Carl Lundgren

Carl Lundgren, Ph.D.
President
Relpromax Antitrust Inc.

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EXHIBIT LIST

Exhibit 1 — Discussion of computerized model, data inputs to model, and computer source code for model for analysis of competitive impact of the RPFJ consisting of:

a. Explanation, model inputs, and intermediate outputs used as inputs to final calculations: Attachments A-1, A-2, B-F, and F.-S
b. Results: Attachments G-J
c. Source code for model: Attachments K-Q
d. Article by Carl Lundgren, Review of Industrial Organization, Volume 11, Number 4, August 1996, pp. 533-550: Attachment T

Exhibit 2 — Proposed Final Judgment dated on or about July 15, 1994, in U.S. v. Microsoft, Civil Action No. 94-1564, U.S. District Court for the District of Columbia

Exhibit 3 — Competitive Impact Statement dated July 27, 1994

Exhibit 4 — Memorandum Of Amici Curiae In Opposition To Proposed Final Judgment, signed by Gary L. Reback and dated January 10, 1995

Exhibit 5 — Declaration of Brian Dautch dated January 27, 2002

Exhibit 6 — Declaration of Paul M. Romer (Redacted Public Version) dated April 27, 2000

Exhibit 7 — Declaration of Carl Shapiro dated April 28, 2000

Exhibit 8 — Affidavit of former Senator John Tunney dated January 22, 2002

Exhibit 9 — Letter dated August 9, 2001, from 88 Members of Congress to The Honorable John Ashcroft (Attorney General of the United States), Steven Ballmer (Chief Executive Officer of Microsoft), and The Honorable Tom Miller (Attorney General of Iowa)

Exhibit 10 — Memorandum Of Points And Authorities In Support Of The Motion Of Relpromax Antitrust Inc. For Limited Participation As An Amicus Curiae And For An Extension Of Time

Exhibit 11 — Memorandum Of Points And Authorities In Support Of The Motion Of Relpromax Antitrust Inc. For Limited Participation As An Amicus Curiae And For An Extension Of Time On The Grounds That The United States Has Not Provided A Competitive Impact Statement In Compliance With The Requirements Of 15 U.S.C. § 16(b)

Exhibit 12 — Charles A. James, *The Real "Microsoft" Case and Settlement*, 16 Antitrust 58 (ABA Fall 2001)

Exhibit 13 — Dan Eggen, *Enron Executives Contributed to Ashcroft Campaign*, The Washington Post, January 11, 2002, p. A7

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EXHIBIT 1

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

ECONOMIC MODEL FOR ANALYSIS OF COMPETITIVE IMPACT OF THE RPFJ

A. THE MODELING PROBLEMS CAUSED BY THE SHORTCOMINGS OF THE COMPETITIVE IMPACT STATEMENT

As indicated above, the Competitive Impact Statement provides no economic analysis or economic modeling of any kind. The Competitive Impact Statement does not even provide raw economic data upon which an economic analysis might be made. It provides no information concerning revenues, costs, profits, quantities, or product qualities of Microsoft, its competitors, or potential competitors which might usefully be incorporated into an economic model. The CIS does not indicate the United States reviewed or considered any such items (i.e. revenues, costs, profits, quantities, or product qualities of Microsoft, its competitors, or potential competitors) in connection with the RPFJ or the CIS. The DOJ's "Competitive Impact Statement" may be a "statement" of sorts, but it is clearly not a statement of "competitive impacts," about which the statement truly says nothing at all.

This places a heavy burden on the public. Members of the public who wish to critique the consent agreement, must not only devise their own economic models and collect their own economic data, they can only guess at what economic models and economic

analysis the DOJ is hiding from the public.

Accordingly, a member of the public who wishes to comment is forced to devise her own economic models and collect her own economic data. In the case of this model, the work has been performed by a professional economist. It would be preferable to use or critique the DOJ's own economic models of the software industry. However, the DOJ has provided no such economic models and no analysis of the competitive impact of the Revised Proposed Final Judgment.[1]

B. How an Economist Analyzes Competition

To an economist, an assessment of the competitive impacts of a remedy proposal requires an assessment of the factors impacting on competition. Competition can be measured or understood in a variety of ways. One paradigm that is often used by economists is the Structure-Conduct-Performance paradigm. The Structure of an industry concerns such matters as the number of firms in a market and the market shares of firms in a market. For example, if an

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[1] It would be the height of unfairness if the United States, having failed to submit its own economic models or analysis, were to respond to this model merely with criticism when it has refused to disclose its own economic models or analysis, if any, of the RPFJ's competitive impact, or lack thereof.

industry has twenty business firms, and no firm has more than a twenty percent market share, the industry is probably competitive. If the industry has only two firms, and one of the firms has an eighty percent market share, the industry is probably not competitive.

The Conduct of an industry refers to the behavior of business firms within an industry. How do they conduct business? Are they actively colluding? Do they frequently share price information? Does one firm normally set prices, while the other firms simply set the same price in response? These are all behaviors which may indicate lack of competition. Some of these behaviors may also be a violation of the antitrust laws.

Finally, the Performance of an industry refers to how well the industry serves the interests of consumers (or society generally). For example, are prices high or low relative to the costs of production? Is the quality of goods and services high or low relative to the cost of producing quality, and relative to what consumers are willing to pay for quality? Is the variety of goods and services high or low relative to the value which variety and choice have for consumers, and relative to the extra costs (if any) associated with producing and selling that variety?

Economists typically measure the interests of consumers using

a concept called "consumer surplus" ("CS"). Consumer surplus is a dollar measure of the value which consumers receive by being able to purchase goods at a low price rather than a high price, by being able to purchase goods they want, and by obtaining good quality from what they purchase. For example, if a consumer would have been willing to pay $200 for an operating system, but only paid $50, then that consumer receives a consumer surplus of $150. If a second consumer would have been willing to pay $75, but only pays $50, then the second consumer receives a consumer surplus of $25.

Economists also typically evaluate the performance of an industry using a related concept called "total surplus" ("TS"). Total surplus is simply the sum of "consumer surplus" and "producer surplus" ("PS"). Producer surplus is a dollar measure of the value which producers receive by being able to sell their land, labor, or capital at a higher price rather than a lower price. For example, if a worker would have been willing to sell his labor for $35,000 a year, but is paid $50,000 a year, that worker receives a producer surplus of $15,000 a year. If a capitalist is willing to lend or invest his money for a 10% return, but receives a 25% return, that capitalist receives a producer surplus of 15%.

When an industry is competitive, its performance in terms of "total surplus" will be at a maximum. Its performance for

consumers will also be near a maximum. When an industry is competitive, the only way to improve consumer surplus is to lower prices still further, but this would cause producers to suffer losses. Hence, when an industry is competitive, consumer surplus is at a practical maximum, because there must either be government subsidies or unhappy producers, if consumer surplus is to be increased still further.

When an industry is not competitive, its performance in terms of total surplus is reduced. When an industry is not competitive, prices are higher and output is lower, than what would occur if the industry were competitive. Because prices are higher, consumer surplus is lower, but producer surplus is higher. However, the total surplus is reduced, because the producer surplus is increased by less than the amount by which consumer surplus falls, so the sum of the two surpluses is reduced. Hence, whether we measure industry performance by the metric of "consumer surplus" or by the metric of "total surplus", more competition is better than less competition.

C. How an Economic Analysis Impacts this Case

Industry performance can be poor, either because the industry structure is bad, because the industry conduct is bad, or because

both structure and conduct are bad. A well-designed competition policy would attempt to remedy or prevent both bad structure and bad conduct.

However, the antitrust law as it is presently formulated is not a well-designed competition policy. The antitrust law attacks bad conduct, but does not attack bad structure per se. A monopoly is usually a bad industry structure, which frequently leads to bad competitive performance, but a monopoly as such is not illegal under the antitrust laws. A monopoly is only illegal if it is acquired or maintained through anti-competitive conduct. Hence, even though Microsoft is a monopoly, if Microsoft never does anything illegal, Microsoft is perfectly free to record its monopoly profits at the expense of consumers.

However, Microsoft did act unlawfully.

It is, of course, the primary aim of the antitrust laws to protect consumers and competition, not competitors as such. Naturally, competition requires competitors, and consumers are better off when competitors are protected from certain types of anti-competitive conduct. Nevertheless, the interests of consumers are paramount when fashioning a remedy. The interests of competitors are of secondary importance. A disinterested economic analysis will always keep this goal in mind when comparing remedies

for the Court's consideration.

D. Preliminary Data for the Economic Model

In order to be useful, an economic model must have as close a relationship to reality as possible given the constraints inherent in any model. An economic model cannot mimic economic reality entirely, because economic reality is too complex to model in its entirety, many aspects of economic reality are not humanly known, and such an exacting economic model would be far too complex for either humans or computers to calculate in a reasonably timely fashion. Hence, all economic models (like all scientific models) are a simplification of reality.

The first consideration is the basic economic data and assumptions. The primary data of interest are costs, revenues, profits, and market shares for each of Microsoft's three monopolies. These three monopolies are the Windows operating system monopoly, the Internet Explorer browser monopoly, and the Office (e.g., word processing, spreadsheet, and database) software monopoly. Each of these three monopolies is implicated in antitrust violations committed by Microsoft. The Windows operating system monopoly is especially implicated in these violations.

There is the question of whether we should model all three

monopolies, or only one monopoly, for purposes of corrective action. This problem is solved by running one version of the model for Platform revenues only and another version of the model for all types of product revenue.

Neither Microsoft nor the DOJ has provided data on costs, revenues, and profits for each of Microsoft's three monopolies, or for any of them. The DOJ has not provided such data as part of its Competitive Impact Statement, nor has Microsoft provided such data on its Investor Relations website. However, Microsoft does provide data for revenues for various business units since July 1997.[2] These business units are "Desktop Platforms", "Desktop Applications", "Enterprise Software and Services", and a few other miscellaneous units. The "Platforms" unit corresponds most closely to Microsoft's operating system monopoly. The "Applications" unit corresponds most closely to its Office, and possibly its browser, monopoly. It is unclear at this time whether, and to what extent, the "Enterprise Software" unit corresponds to either competitive or monopoly markets, including operating systems for server markets, the browser market, or commercial services based on the Internet.

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[2] Source: Microsoft's Investor Relations website, Microsoft Financial Statements, spreadsheets accessible from http://www.microsoft.com/msft/history.htm, downloaded December 5, 2001.

Hence, as initial data for the economic model, four sets of revenue figures for Microsoft's monopolies were used. The first set of revenue figures is based solely on Microsoft's Platform Revenues, which most closely conforms to a narrow vision of Microsoft's monopoly. The second set of revenue figures is a summation of Platforms & Enterprise Software. The third set of revenue figures is a summation of Platforms & Applications. The fourth set of revenue figures is a summation of Platforms, Applications & Enterprise Software. The revenue figures are arranged in increasing order of size, with the first set of figures being the smallest, and the fourth set of figures being the largest. This information is shown in Attachment A-2 which immediately follows this Attachment A-1.

As it turns out upon analyzing the results produced by the model, the qualitative conclusions of the economic model are basically unaffected by whether the model uses Platform revenues as a base or essentially all product revenues as a base. Quantitative results will change, of course, because the fourth set of figures roughly triples the calculated values compared with the first set of figures. Nevertheless, the qualitative conclusions remain the same.

In order to place these historical figures into useful format,

the revenue figures are projected backwards in time through calendar year 1995. This is done by computing quarterly revenues for each business unit as a percentage of total revenues. A statistical regression on these percentages was used to determine if these percentages were growing or shrinking. These statistical tests indicated modest, but statistically significant, changes in these percentages over the time interval July 1997 through September 2001. Hence, similar percentage changes were used to determine the missing historical data for January 1995 through June 1997. These projected percentage changes for the three business units were multiplied by Microsoft's reported total quarterly revenues for the quarters of these prior years to obtain estimated values for the revenues of each of Microsoft's three main business units for each such quarter.

These data were converted from nominal dollars to real dollars. Nominal dollars are simply the actual reported dollars, without any adjustment for changes in purchasing power due to inflation. Real dollars are nominal dollars as of a given year, but adjusted for inflation for years other than the base year in which the real dollars are being reported. In order to convert the nominal dollars into real dollars, the U.S. Bureau of Labor Statistics' (BLS) Consumer Price Index (CPI) for "All Urban

Consumers (Current Series)" was used.[3] This is the most commonly used inflation index. The nominal dollars were converted to real dollars using 2001 as the base year.[4]

Next, the real quarterly revenues were projected into the future. For each of the three business units, the 1995-2001 historical growth rates were calculated using log-linear statistical regressions. Revenue growth rates were very high, 19.8% annual growth for Platforms, 18.5% annual growth for Applications, and 28.9% for Enterprise Software, all expressed in real dollars. However, revenues did falter a bit in the last year of data. Hence, I used the average of the last four quarters of the data available to me as the baseline to estimate the last quarter of revenue data for calendar year 2001.[5] Upon this baseline estimate of revenue for the fourth quarter of 2001, I projected all future growth.

In order to project future growth, I assumed that software

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[3] Downloaded December 5, 2001 from the BLS's CPI web page, available at http://stats.bls.gov/cpi/home.htm .

[4] The average CPI for 2001 was computed as the eight-month, mid-year average for 2001. Since the last two months of 2001 were not yet available, the first two months were dropped for symmetry.

[5] Microsoft's accountants use a fiscal year which differs from the calendar year. I re-dated all Microsoft figures to their true calendar years.

production would eventually become a "mature" industry. As a mature industry, real growth rates are unlikely to exceed some modest figure, such as 3% per year. However, computer software has not yet reached this stage of maturity. Software growth is very much driven by the phenomenal growth in computer hardware capabilities. The growth rate of computer hardware capacity is unlikely to taper off anytime soon, even if we restrict our attention to foreseeable technological developments.

However, revenue growth rates for software are unlikely to be sustained indefinitely into the future at annual rates of 18%-30%, no matter how amazing these future developments in computer hardware may be. Accordingly, I project that the current rapid growth in monopoly revenues will gradually slow down to the more modest growth rate of 3% a year. In my projections, I allow the historically-observed, rapid growth rates to converge towards the slower "mature industry" growth at the convergence rate of 5% per quarter. That is, if the growth rate in quarter 1 is 20%, then the growth rate in quarter 2 is assumed to be (20% x 0.95) + (3% x .05) = 19.15%. Alternative projections for Microsoft's future monopoly revenues may also be reasonable. However, it is unlikely that alternative projections will fundamentally alter the qualitative conclusions.

These quarterly estimates and projections for Microsoft's revenues by business division were then summed into annual figures for each calendar year from 1995-2025. Attachment A-2 provides the real revenue figures and projections which were used in the computerized economic model.

The next main piece of data is data on costs. Data on costs were also obtained from Microsoft's Investor Relations website.[6] Data on Microsoft's expenses are available for the company as a whole, but do not appear to be available by business division. Hence, the only option is to take an average across business divisions as being representative of Microsoft's three main business divisions.

Microsoft's spreadsheets available on the Microsoft website list their expense items as a percentage of revenue for each Microsoft Fiscal Year. The percentages from the last ten fiscal years were used to compute ten-year averages for each expense item as a percent of revenue. These 10-year averages are listed in Attachment B.

These expense items were then classified as either short-run costs or long-run costs. Microsoft's profit and loss sheet does

[6] Source: Microsoft's Investor Relations website, Microsoft Financial Statements, spreadsheets accessible from http://www.microsoft.com/msft/history.htm, downloaded December 5, 2001.

not show capital expenses as such. However, it does show Research and Development (R&D) expense. It is assumed that R&D for its software products is Microsoft's main long-term cost. "General and administrative" expense is also classified as a long-term cost. The other expenses I classify as short-run costs. According to this classification, Microsoft spends 41.01% of its revenue on short-term costs, and 18.55% of its revenue on long-term costs. These percentages have held fairly steady over the years, with some variations.

To the extent that long-term costs take time to develop their respective revenues, and to the extent that Microsoft's revenues are growing, these long-term costs as a percent of revenue are probably overstated. For example, if Microsoft's revenue in Year 1 is $100, and its R&D expense in Year 1 is $20, that is 20% of revenue. However, suppose that it takes 4 years for Microsoft's R&D expenditure to pay off. Suppose that in the same 4 years Microsoft's revenue has doubled to $200. Microsoft's $20 R&D expenditure in Year 1 has helped to create $200 of revenue in Year 5. This is a percent of revenue of only 10%, not 20%.

However, to the extent that investors require a positive return on their capital investments, these long-term costs as a percent of revenue may be understated. For example, if investors

require a return of 50% on their capital over a 4-year period, then an investment of $20 in Year 1 will require repayment of $30 in year 5. If Microsoft's revenues had remained at $100 in Year 5, this would be a percent of revenue of 30%, not 20%. If Microsoft's revenues rose to $200 in Year 5, this would be a percent of revenue of 15%, and not 10%, 20%, or 30%.

For purposes of the computerized economic model, it is assumed that these two effects offset each other, and accordingly the model uses the raw percentage, 18.55%, as Microsoft's long-term cost of production. These two effects will exactly offset each other only if investors' required return on capital exactly matches Microsoft's growth rate. This is unlikely to happen exactly. It is most likely that the investors' required real rate of return on capital investment is less than Microsoft's phenomenally rapid growth rates in revenue. Hence, Microsoft's long-term cost of production is probably somewhat less than 18.55%.

Finally, we consider Microsoft's market share. In the Findings of Fact, Judge Jackson indicated that Microsoft's market share in operating systems was over 90% for over a decade.[7] More recent market share data indicates that Microsoft has approached or

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[7] Finding of Fact number 35, U.S. v. Microsoft, 84 F.Supp.2d 9, 19 (D.D.C. 1999)

exceeded a 90% market share in all three of Microsoft's monopolies: Since the beginning of the trial, Microsoft's share of the web browser market has increased from less than 45% to more than 87%, its position in the desktop operating system market has risen to 92% (a 3% increase in the last year) and its market share for business productivity applications, such as word processing and e-mail, is now over 96%.[8]

E. Equations for the Economic Model

An economic model must model both the demand side and the supply side of the markets in question. However, to keep the model simple and tractable, it is best to use equations that are fairly easily solved and calculated. For the demand side, I assume that the product being produced is "homogenous". This means that the product is essentially the same, in the eyes of the consumer, whether the product is produced by one firm or another firm.

Software products produced by different firms are probably not completely homogenous, either because a firm's reputation, or its product quality, or other product features may differ across firms. However, the assumption of product similarity across firms is often

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[8] Edward J. Black, "*The Microsoft Monopoly and its Effects*," Computer Und Recht International, April 2001.

true enough for modeling purposes. In addition, even though product quality may differ, a simple reinterpretation of the model can handle such situations. To the extent that people are willing to pay more for higher quality, we can interpret this situation as if the higher quality is equivalent to higher quantity.

Another simplifying assumption for the demand side is that the industry demand curve (graph of the price of a product vs. quantity of a product demanded at each price) is linear. A demand curve is unlikely to be linear (that is, it is unlikely to be a straight line). However, the only range of prices worth considering for the competitive analysis is the prices and outputs that lie between the monopoly price and output and the competitive price and output. Over a small range of prices and outputs, the demand curve is likely to be close to a straight line. Therefore, it is unlikely that assuming curvature or lack of curvature in the demand curve will play any significant qualitative role in the conclusions of such a competitive analysis.

Accordingly, the demand side assumes that products are homogenous and that demand curves are linear, according to the equation:

$$P = A - bQ \qquad (1)$$

Where P=Price (same for all firms), Q=Industry Output Quantity, and

A and b are positive parameters (intercept and slope of the demand curve).

We now turn to the supply side. Technically, only competitive firms have supply curves (graph of the price of a product vs. quantity of a product supplied at each price). Monopoly firms have only marginal cost curves. In this industry, we assume that firms are few in number, either one or a very few firms. Hence, the industry at all times is either a monopoly or an oligopoly.[9] Standard textbook theory tells us how to analyze the production decisions of a monopoly firm. However, there is no single textbook model for how to analyze an oligopoly. This is because there are multiple ways in which an oligopoly industry might behave.

In order to analyze the production decisions of either a monopoly or an oligopoly, it is necessary to posit the nature of the cost curves which they face. It is assumed that different firms may have different costs of production. However, for simplification, it is assumed that each firm (subscripted i for each firm i, where i = 1, 2, 3, ...) has both a fixed cost (Fi) and a marginal cost (Ci). It is assumed the marginal cost is constant (but different) for each firm. Since the fixed cost has an effect

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9 An "oligopoly" is an industry structure where there are only a few firms (at least two), or only a few main firms.

only on entry decisions, exit decisions, and shut-down decisions, rather than pricing decisions, it is assumed that the fixed cost is the same for all firms (Fi=F for all i). These simplifying assumptions are unlikely to have a significant qualitative impact on the conclusions.

Hence, the total cost or cost curve for each firm is assumed to be:

$$TCi = Fi + QiCi \qquad (2)$$

Where TCi = Total Cost for firm i, Fi = Fixed Cost for firm i, Qi = Quantity of output for firm i, and Ci is the constant marginal cost for firm i. In addition, we assume that Fi = F for all firms which are producing and Fi = 0 for all firms which are not producing.

For a monopoly firm, it is sufficient to know the cost side and the demand side to obtain a prediction for the production decision. The monopolist's profit is:

$$\begin{aligned} Profit_i &= TRi - TCi \\ &= PQi - (Fi + QiCi) \\ &= PQi - QiCi - Fi \qquad (3) \end{aligned}$$

Where TRi = Total Revenue for firm i = PQi, and TCi comes from equation (2).

Assuming that the fixed cost is not so high as to make

production not profitable, the monopolist finds it most profitable to produce at the output level where marginal cost (MC) equals marginal revenue (MR). On a graph showing a plot (or curve) of dollars of profit per unit vs. the quantity of units produced, this output level (where MC = MR) is the highest point on the curve. The eye can determine this point at a glance.[10] To determine this output level by computer, calculus is used and this output level is determined by obtaining the partial derivative of Profits with respect to the firm's choice of Qi and setting these derivatives equal to zero:

$$(d\ \text{Profit}_i / d\ Q_i) =$$

$$(d\ P / d\ Q_i)Q_i + P - C_i = 0$$

$$bQ_i + P - C_i = 0 \qquad (4)$$

Where we substitute $(d\ P / d\ Q_i) = b$ from the derivative of the demand curve in equation (1).

For an oligopoly firm, we must make a choice from many possible oligopoly models, a model which is reasonable for the situation at hand. A standard oligopoly model, first developed by a French economist named Cournot over 150 years ago, is still frequently used by economists today because it is fairly easy to

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[10] In artistic terms, a picture is worth a thousand words. In mathematical terms, the eye is a better integrator than the mind.

compute. The Cournot model assumes that each oligopoly firm makes its output decision under the assumption that rival firms will not change their output in response to its own change in output. The Cournot model yields an oligopoly price and output which is intermediate between competition and monopoly. Also in the Cournot model (when firms have the same marginal cost), an increase in the number of firms causes prices to fall and output to rise. When there are a very large number of firms, the Cournot model predicts competitive pricing, which is what we would expect.

When all firms attempt to maximize their absolute level of profits, the profit-maximizing equations for each firm under the Cournot model are:

$$\text{Profit}_i = PQi - QiCi - Fi \qquad (4)$$

$$(d\ \text{Profiti} / d\ Qi) =$$

$$(d\ P / d\ Qi)Qi + P - Ci = 0$$

$$bQi + P - Ci = 0 \qquad (5)$$

The Cournot model is reasonable for the circumstances of this industry. Given a fairly significant level of fixed costs for this industry, it is unlikely that more than two or three firms can survive as major players in this industry. Fixed costs for software production (i.e., for research and development) require that firms must have significant sales simply to break even. This

limits the number of firms which can survive as major players in the industry.

Microsoft's long-run costs appear to be about 18.55% of revenues. If all of these costs are fixed costs, then no more than five firms can exist in the industry, because fixed costs for six firms would eat up 18.55% x 6 = 111.3% of the industry's total revenue. This is unviable. In addition, there are also the short-run costs that must be covered. Furthermore, when there are two or more firms in the industry, we expect prices to fall, which allows firms to sell more, but only at a lower profit margin.

Computer results from a preliminary economic model, which allowed up to five firms in the industry, indicated that if fixed costs are either 75% or 100% of the long-run costs, then only two firms can survive in this industry. If fixed costs are either 25% or 50% of the long-run costs, then only three firms can survive in this industry. If fixed costs are 0% of the long-run costs (i.e., all long-run costs are variable costs), then it is possible for four or five firms to survive in this industry. Accordingly, the computer model was revised to consider a maximum of three firms in the industry.

Given that only two or three firms can successfully survive, under Cournot assumptions, we may ask if the Cournot model is a

reasonable description. Alternative oligopoly models do exist, and these may suggest either higher prices or lower prices than what the Cournot model would predict.

Under the circumstances of an industry structure with only two or three firms, it is more reasonable to assume that prices may be higher than the Cournot model would predict. This is so for two reasons. First, software products are likely to be somewhat differentiated, rather than homogenous, as the computer model assumes. If products are differentiated, then consumers see the products of different firms as being somewhat different from each other, albeit also similar to each other. For example, Corel WordPerfect and Microsoft Word have their differences, as well as their similarities. Within a small range of prices, each software product can act as a kind of "mini-monopolist" with respect to its own product price.[11]

Second, when there are only two or three firms, tacit collusion which raises prices is easier to implement, and difficult to prove. Moreover, unlawful conspiracies to raise prices are less easily discovered. However, it is the general experience that oligopolies with very few firms rarely collude by means of unlawful

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11 Economists normally use the term "monopolistic competition" rather than "mini-monopoly" to describe this type of phenomenon.

conspiracies (which could net jail time), presumably because tacit collusion is so much easier.

For both these reasons, it is substantially more likely that oligopoly prices would be higher than what the simple Cournot model would predict, than that the oligopoly prices would be lower. If we assume that prices would be higher, this means that more firms can survive in the industry. For example, if the Cournot model would predict that only one firm can be profitable, it may be that two firms can be profitable. If the Cournot model predicts only two firms can survive, it may be that three firms can survive. And so forth.

Hence, the Cournot model is probably a bit cautious in its predictions about how many firms can actually compete and survive in this industry. This is probably a good thing. One of the issues in this case, at least implicitly, is whether or not Microsoft is a "natural monopoly." If Microsoft is a natural monopoly, someone might argue, then Microsoft caused little or no harm by keeping out the competition, since the competitors could not have survived anyway. The computerized model does not in any way lend support to this type of argument. Hence, the Court should not be reluctant to consider structural remedies which divide Microsoft into two or more firms.

F. Equations For a Relative Profit Maximizing Firm

One of the options for a structural remedy is to change the incentives of the business managers of the successor firms to Microsoft when Microsoft is re-structured. The incentives of the business managers can be altered by changing the method of compensation for the officers of the business firm. A method of incentives for preventing collusion is further explained in a paper published in a refereed academic journal.[12]

For purposes of this comment and the computer economic model, attention is restricted to the simplest possible methods for implementing this incentive system. More complex methods for implementing the incentive system are certainly possible, and some of these more complex implementations may even be better or more effective than the simple implementation discussed here.

In its purest implementation, the incentive scheme sets up a zero-sum game for two or more firms in an industry.[13] In the zero-sum game, there is no incentive for all firms in the industry to engage in any type of collusion. The method even prevents tacit

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12 Carl Lundgren, Review of Industrial Organization, Volume 11, Number 4, August 1996, pp. 533-550. A copy of this article is attached as Attachment T.

13 Simply put, RPM forces the firms in the industry to be cutthroat competitors which serves to open markets to competition which is the principal goal of the antitrust laws.

collusion, which may be hard to detect, and difficult or impossible to prosecute. The method accomplishes this amazing feat simply by changing the financial incentives of business managers, not by passing strict new antitrust laws with draconian penalties.

The method sets up a set of incentives called Relative Profit Maximizing (RPM) incentives. Business firms whose managers are motivated by these incentives may be called Relative Profit Maximizing (RPM) firms. Each business manager is assumed to be motivated by at least some desire to increase his wealth. In a well-run business firm, managers are normally paid in a manner which motivates them to increase their wealth by increasing the profits of their firm. RPM incentives alter these common methods of financial compensation by additionally motivating the manager to maximize the firm's profits relative to competing firms' profits.

In its most general form, the goal of the RPM manager is to maximize his profits relative to the profits of rival firm(s). It is only be achieving this goal that the RPM manager can attain maximum financial satisfaction, because that is how the manager is being paid. In its simplest form, the goal functions for two rival RPM firms look as follows:

$$Goal1 = Profit1 - z(Profit2) \qquad (6)$$

$$Goal2 = Profit2 - z(Profit1) \qquad (7)$$

When z = 1.0 in the above two goal functions, we set up the pure zero-sum game. In the zero-sum game there is no incentive to collude. If instead, z = 0.0 in the above two goal functions, then both firms are motivated by Absolute Profit Maximizing (APM) incentives. APM incentives are simply the incentives we normally expect to find in business firms. Absolute Profit Maximizing (APM) firms simply try to maximize their own level of profits, regardless of the level of other firms' profits. APM firms—which are the most common type of business firm in a capitalist economy—do have an incentive to collude, if an opportunity arises.

In simple terms in a two firm industry using RPM incentives, if a manager increases his firm's annual profits by 10% which is equivalent to $1 billion he only gets a bonus (or salary in the case of absolute dependence on RPM) if the profits of the other firm in the industry increase by less than 10%. In a two firm industry using APM incentives, the manager would get a bonus for the extra $1 billion even if his firm's profits increased less than the other firm's profits in terms of annual percentage gain.

The parameter z in the above goal functions can also take on additional values. For example, if z is set less than zero, the two firms would have Joint Profit Maximizing (JPM) incentives. JPM incentives would likely create less vigorous competition between

the two business firms than would otherwise occur with APM incentives.

If z in the above goal functions is between 0.0 and 1.0, this creates an impure system of relative profit maximizing incentives. For example, if z = 0.3, this creates a mixture of two incentive schemes which might be described as "30% RPM plus 70% APM." An impure RPM incentive scheme partially reduces the incentive for collusion, but does not completely eliminate the incentive for collusion. An RPM firm, even one with an impure RPM incentive, can normally be expected to compete more vigorously than an APM firm. For this reason, the Court should consider using RPM incentives as part of an overall structural remedy.

For purposes of illustration with the computerized economic model, only values of z between -0.3 and 0.9 are used. Generally, z is in the range of 0.0 to 0.9 in the model and no preferred solution has z less than 0.0. The value of 1.0 (pure RPM) is avoided, because with this simple illustrative model (with no mechanism for avoiding losses), pure RPM would practically guarantee that one or both firms will lose money. This is because if the industry has little or no product differentiation, pure RPM causes prices to be set to the average of marginal costs. If in addition, software firms have high fixed costs, pure RPM

practically guarantees that at least one firm, and possibly both firms, will be unable to recover their fixed costs of production. Pure RPM may still be useful and beneficial, but only if additional mechanisms are instituted to avoid this outcome.

The goal-maximizing outputs for the goal functions listed in equations (6) and (7) are:

$$\frac{d\,Goal1}{d\,Q1} =$$

$$\frac{dP}{dQ1}Q1 + P - C1 + \frac{dP}{dQ1}Q2 = 0$$

$$bQ1 + P - C1 + bQ2 = 0 \qquad (8)$$

$$\frac{d\,Goal2}{d\,Q2} =$$

$$\frac{dP}{dQ2}Q2 + P - C2 + \frac{dP}{dQ2}Q1 = 0$$

$$bQ2 + P - C2 + bQ1 = 0 \qquad (9)$$

G. Basics of Scenario Analysis

The purpose of a scenario analysis is to provide a projection of a range of possible futures. The basic parameters of an economic model are usually not known, although they can often be estimated (through empirical or theoretical analysis). These estimates may be arrived at with a greater or lesser degrees of confidence, accuracy, and reliability. Additionally, even if the basic parameters of an economic model were known with certainty, most economic models allow for uncertainty in how those basic

parameters will vary for particular firms or individuals. For example, even if it were known with certainty that the probability of bankruptcy for a particular firm in a particular industry was exactly 3% a year, this would not tell us whether that particular firm will be bankrupt in twenty years.

In a well-done scenario analysis, one should vary the parameters through a reasonable range of values, including both moderate values and extreme values. In addition, the fate of individual firms (given the assumed parameters for a particular scenario) is varied according to the laws of probability governing that particular scenario.

There are two basic ways of conducting a scenario analysis. One way is to compute all the possibilities (appropriately weighted by probabilities) for a limited number of parameters that are allowed to vary through a small number of reasonable values for each parameter, including both moderate and extreme values. The second method is called a "Monte Carlo" study. The Monte Carlo study allows a large number of parameters to be varied, randomly, through a large set of possible values. The Monte Carlo study necessarily uses random numbers, which are available in many computer packages. The first type of study might or might not use random numbers.

The computer model used for these comments employs the first method of scenario analysis. Probabilities for every scenario are exhaustively computed and assigned. No random numbers or random number generators were used in the analysis.

The computer model computes probabilities and outcomes for two distinct types of scenarios. One type is a static scenario. The static scenario occurs at a particular period of time, within a single transition period. These transition periods (for a change or transition from one short run cost level to another as is discussed further in section H below) are assumed to have a length of three, five, or eight years.

The other type is a dynamic scenario, which is a path that links two or more static scenarios occurring in two or more time periods. For each set of initial conditions and basic parameters, the computer starts with a single scenario in transition period zero. The computer then calculates the probability that various additional static scenarios will be reached in transition periods one through ten. The probability that one static scenario will turn into another static scenario depends on how similar or dissimilar are the two scenarios. The computer calculates the outcomes for every static scenario, and weights those outcomes by the probability that the static scenario will occur in each of the

eleven transition periods (periods zero through ten).

H. Details of Static Scenarios

The static scenarios assume that firms differ only by level of cost. The computerized economic model assumes that there are three firms and five levels of short-run cost. These five levels of cost are level one (lowest cost), level two, level three, level four, and level five (highest cost). These five levels of cost are assumed, over the long run, to have differing probabilities of occurrence. In particular, the probability of cost level one (lowest cost, 10% chance) is assumed be lower than the probability of cost level five (highest cost, 30% chance). This reflects the plausible assumption that it is easier to be a high-cost firm than a low-cost firm.

All possible combinations of the five cost levels for three firms are computed. These possible combinations are organized into 35 static scenarios. Whenever a static scenario has the same cost level for two or more firms, the costs of each firm are adjusted slightly so that no two firms have the same level of cost. A list of the cost levels associated with each static scenario is shown in Attachment C. The weighted average of cost levels over all firms and scenarios is 3.5.

The basic parameters for static scenarios are varied along two dimensions. The first dimension is the cost spread for short-run costs. The cost spread is defined as the ratio of cost level one to cost level five. For example, if the lowest cost level is twice as efficient as the highest cost level, then the cost spread is 50%. Five different ratios for the cost spread were chosen for the analyses. These cost spread ratios were 25%, 33%, 40%, 50%, and 67%.

The second dimension for variation is the portion of long-run cost which is allocated to fixed cost. The portion of long-run cost which is actually a fixed cost is open to some question or interpretation. The mere fact that a software firm has spent $X billion on software development does not mean that the whole expenditure was necessary to develop the software in question. Five different values for the fixed-cost portion of long-run costs were computed. These percentages were 0%, 25%, 50%, 75%, and 100%. In all cases, the remainder of the long-run cost was classified as a variable cost.

Thus, twenty-five static variations on the basic parameters were computed. For each of these variations, the computer programs computed the prices, quantities, profits, and consumer surplus outcomes for each of the thirty-five static scenarios. These

static numbers were applied to the probabilities computed for each static scenario for each of the eleven transition periods. The computer model uses the static figures and the associated probabilities for each transition period to compute the expected profit and consumer surplus outcomes for each transition period.

I. Details of Dynamic Transitions

The basic parameters for determining the probabilities of transition effectively vary along only one dimension: The speed with which transitions occur from one cost level to another. This speed variable is implemented in two different ways.

The first method is relatively straightforward. The length of time for the transition periods is allowed to vary. A three-year length for the transition period implies a fast transition speed. A five-year length implies moderate transition speed, and an eight-year length implies a slow transition speed.

The second method influences the speed of transition by determining the extent by which one static scenario may change into another static scenario, from one transition period to the next transition period. For all transition speeds, the model assumes that one static scenario is more likely to change to another static scenario, the more similar are the two scenarios. The measure of

similarity or dissimilarity between two scenarios is determined by how similar or dissimilar the short-run costs are for each firm in the industry.

In the slow speed for transition, the second method presumes that a firm's short-run cost cannot change more than one level at a time. For example, a firm whose cost level is four, can change to cost levels five or three, and it can stay at cost level four, but it cannot move to cost levels one or two in only one period of transition. In the slow transition, the firm is more likely to stay at the same cost level, from one transition period to the next, than to move to the cost level above or below.

In the moderate speed for transition, the second method presumes that a firm's short-run cost cannot change more than two levels at a time. For example, a firm whose cost level is four, can change to cost levels two, three, or five, and it can stay at cost level four, but it cannot move to cost level one in only one period of transition. In the moderate speed transition, the firm is more likely to move only one cost level, rather than two cost levels, from one transition period to the next.

In the fast speed for transition, the second method presumes that a firm's short-run cost can change as many as four levels at a time. For example, a firm whose cost level is one, can change to

cost levels two, three, four, or five, and it can also stay at cost level one. In the fast transition, a firm is more likely to move only one cost level than two cost levels, more likely to move two levels than three levels, and more likely to move three levels than four levels, from one transition period to the next.

The computer model also causes the exit of firms from the industry when their short-run costs become too high. If a firm's short-run costs reach the adjusted cost level of five or greater, the firm is presumed to exit the industry. This is because an experienced firm which cannot keep its costs down (or quality up) has no competitive advantage over potential competitors, and has presumably lost its ability to compete profitably. The model presumes that the exiting firm is replaced by a new firm which is equally high cost. The new firm then has the opportunity to reduce its cost in future transition periods. Hence, all new entrants to the industry are presumed to enter with high short-run costs.

The computer model starts transition period zero, either with Microsoft as a monopoly, or with Microsoft divided into two or three firms. If Microsoft starts as a monopoly, Microsoft is presumed to start at cost level three. Cost level three is midway between cost level one (lowest cost) and cost level five (highest cost). Cost level three is slightly more efficient than the long-

term average cost level of three and a half. Although some may argue that Microsoft acquired its monopoly because it was so much more efficient than its competitors, that monopoly acquisition happened at least ten years ago and was probably due to the arguably per processor licensing which was the subject of a prior consent judgment (attached as Exhibit 2 to this comment letter). There is no reason to suppose, today, that Microsoft has anything other than about average efficiency for an incumbent firm.

If Microsoft is split into two or three firms, we may suppose that there could be some cost-efficiency losses due to initial disorganization. To see this possibility in extremis, suppose that the Court ordered Microsoft divided into ten competing firms. We might consider ourselves lucky if three of the ten firms were equally efficient as Microsoft is today. However, we should not exaggerate the likely cost-inefficiency impacts of dividing a very large company into two or three very large companies. If Microsoft is split into two firms, the model assumes that one of the Microsoft successor firms starts at cost level three, while the other starts at cost level four. If Microsoft is split into three firms, the model assumes that one of the Microsoft successor firms starts at cost level three, while the other two successor firms start at cost level four.

The computerized economic model also treats the initial period (period zero) differently from the subsequent transition periods. In the initial period, potential competitors do not produce; only Microsoft or Microsoft's successors produce. In subsequent periods, both Microsoft and competitors can produce. This is because, at least initially, major competitors do not exist, because their entry has been blocked by anti-competitive acts. However, under the presumption that an effective conduct or structural remedy creates the opportunity for entry, competitors can produce in subsequent transition periods.

J. Construction and Computation of Remedy Alternatives

The computerized economic model developed for these comments is best suited for analyzing structural remedies. Nevertheless, the model can be applied to analyze conduct remedies, albeit with some caveats.

The model computes several alternative basic outcomes for the industry. The first basic alternative is "no remedy". If there is no remedy, it is assumed that Microsoft is a monopoly in all years from 1995 through 2025.

The second basic alternative is a 100% effective conduct remedy, starting in 2002. To calculate the results in terms of CS,

TS, and the profits of Microsoft and its competitors in the case of a 100% effective conduct remedy, the model assumes all barriers to entry are removed and there is no anti-competitive conduct in the market. Under the assumption that there are no barriers to entry into the market, Microsoft starts as a monopoly in 2002, but is subject to entry from competitors thereafter. The choice of an early date for a conduct remedy is due to the timing of the negotiated conduct remedy, or alternatively the timing of the conduct remedy offered by the Litigating States. Hence, either conduct remedy can go into effect almost immediately.

In practice, no conduct remedy is likely to be 100% effective. The Litigating States' strong conduct remedy may be perhaps 60% to 80% effective as a conduct remedy.[14] The DOJ's weak conduct remedy may be about 20% effective. If we optimistically assume that the DOJ has hidden all the convincing and persuasive evidence which should have been in the Competitive Impact Statement, the DOJ might someday provide evidence to the public and the Court that the negotiated agreement with Microsoft may be 40% effective.

The model does not specifically compute the effects which any particular provision of a conduct remedy may have on future

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[14] The "Litigating States" are the District of Columbia, California, Connecticut, Florida, Iowa, Kansas, Massachusetts, Minnesota, Utah, and West Virginia.

competition. Rather, it is up to the Court or the analyst to subjectively assess the overall effectiveness of a particular proposed conduct remedy, and to judge it accordingly. The computer model simply combines the two basic alternatives, "no remedy" and "100% effective conduct remedy," to compute estimated outcomes for conduct remedies with only partial effectiveness. For example, to compute a "60% effective conduct remedy" the program computes a weighted average of the two basic remedies, with a 60% weight on "100% effective conduct remedy" and a 40% weight on "no remedy." The outcomes in the case of other partially effective remedies are calculated in a similar manner.

The third set of basic alternatives is a structural remedy in which Microsoft is divided into two or three competing firms. If we accept the DOJ's pessimistic appraisal, no structural remedy can reasonably go into effect before 2005. More optimistically, if the Court follows the road maps laid out by the Appeals Court and the Supreme Court, there is at least a 50% chance that a structural remedy could take effect in 2003, without such remedy being overturned or stayed. In any case, the computer model pessimistically assumes that a structural remedy is not available before 2005. This time delay somewhat disadvantages the structural remedy, but the structural remedy is sufficiently superior to the

conduct remedy, that it is not much of a disadvantage. Without the time delay, a structural remedy would always be superior to a conduct remedy.

The model computes several variations on a structural remedy. The first main variations are the division of Microsoft into two or three absolute profit maximizing (APM) firms. An APM firm is simply the conventional profit-maximizing firm that we see everyday in the business world. This type of division of Microsoft into two or more firms has been advocated by several economists, including four economists who filed an amicus brief before this Court.[15]

The second main variations are the use of relative profit maximizing (RPM) incentives after Microsoft is split up into two firms. A primary advantage of the RPM incentives is that competition can be maintained even if there are only two RPM firms in the industry. RPM incentives can be applied to two firms, three firms, or even more firms, but this computer model only applies RPM incentives to two Microsoft successor firms. The RPM incentives are assumed to be in effect so long as both Microsoft successor firms are still in the industry. If either RPM firm exits the

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15 Robert E. Litan, Roger G. Noll, William D. Nordhaus, Frederic Scherer, "Remedies Brief of Amici Curiae," United States v. Microsoft Corp., filed with District Court, April 27, 2000.

industry, the goal function of the remaining Microsoft successor firm returns to the usual APM incentives.

The computer model also prints out estimates for the two-monopolies remedy previously proposed by the Plaintiffs in this case. If Plaintiffs' remedy worked as planned, it would be akin to a conduct remedy with enhanced effectiveness. In addition to removing the applications barrier to entry, the proposal would possibly introduce some measure of extra competition, because the two monopolists might decide to compete with each other. The computer model does not specifically analyze this remedy, but simply estimates its value as being a third of the distance between a "100% effective conduct remedy" and a 2-firm APM structural remedy. This is calculated as a weighted average of these two basic remedies, with a 2/3 weight on the "100% effective conduct remedy" and a 1/3 weight on the 2-firm APM structural remedy.

Finally, the model computes what might have happened along a "Lawful Path." The lawful path assumes that Microsoft starts as a lawful monopoly in the year 1995, and commits no antitrust violations at any time. Although some private lawsuits allege antitrust violations which occurred before 1995, this case does not concern those allegations. This case concerns anti-competitive acts committed by Microsoft in the browser wars, which did not

start until 1995.[16] To simulate the lawful path, Microsoft starts as a monopoly in 1995, but is subject to potential competition in 1996 and later years.

The purpose of calculating the "Lawful Path" is to serve as an equity standard for evaluating alternative remedies. The Lawful Path tells us what Microsoft likely would have earned, if Microsoft committed no violations. To the extent that Microsoft's profits exceed those lawful earnings, we may refer to those excess earnings as the fruits of its unlawful actions. Likewise, to the extent that consumer surplus exceeds (or falls short) of what would occur along the Lawful Path, this is the extent to which consumers benefit (or remain harmed) as a result of a particular remedy.

K. Weighting of Alternative Scenario Parameters

The computerized economic model computes and weights 225 sets of scenarios, which differ by the basic parameters assumed for each scenario. These differ along four dimensions. Not all scenarios are equally likely. Hence, in the reporting of results, they are weighted by their likelihood of occurring. Attachment D shows the four basic parameters, the sixteen parameter values, the point

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16 See Findings of Fact, Number 17. U.S. v. Microsoft, 84 F.Supp.2d 9, 14 (D.D.C. 1999)

values of their weighting, and their implied probability of occurring.

The first dimension of parameter variation is the cost-spread for short-run cost. Five different ratios for the cost spread were used: 25%, 33%, 40%, 50%, and 67%. In Attachment D these are labeled "Cost-Spread Ratio."

Studies of production efficiency between firms suggest that some firms can be only half as efficient as other firms. So that cost-spread ratios of 50% and 67% are certainly within the realm of plausibility. In addition, the short-run cost variable is doing double duty as a stand-in for possible differences in software quality between firms. If we assume similar ratios for differences in quality, then a 25% cost spread is certainly possible, though less likely. Such a cost spread implies that the inefficient firm has both double the costs and half the quality; it is an unlucky combination of extremes that is therefore less likely. Hence, I weight the 25% and 33% cost-spread ratios with a point value of 1, and weight the 40%, 50%, and 67% ratios with a point value of 2.

The second dimension of parameter variation is the portion of long-run cost which is allocated to fixed cost. Five different percentages for the fixed-cost portion were used: 0%, 25%, 50%, 75%, and 100%. In Attachment D these are labeled "Fixed-Cost

Portion of Long-Run Cost." At this point, there is no particular reason to suppose that one allocation of the fixed-cost portion is better than another. Hence, I assume a uniform distribution over the interval, 0% to 100%. This implies assigning point values of 1 to the two extremes (0% and 100%) and a point value of 2 to the in-between values (25%, 50%, and 75%).

The third and fourth dimensions for parameter variation are the speed of transition and the length of transition periods. In Attachment D "Transition Speed" takes on values of 1.5 (slow), 2.5 (moderate), and 4.5 (fast). In Attachment D, the length of transition periods is given by "Transition Length" of 3 years (short), 5 years (moderate), or 8 years (long). Extremes may either amplify each other (e.g., slow and long) or offset each other (e.g., slow, but short). Hence, even if we do not weight these values further, moderate combinations are more likely than genuinely extreme combinations. Hence, all transition speeds and transition length receive the same point value of 1.

Finally, for each of the 225 combinations of parameters, the points assigned to each parameter value are multiplied together. This yields a total of 576 points. Based on these point values, the computer model assigns each combination of parameter values an assumed probability of occurrence. These probabilities are used to

weight the outcomes of the various calculations when reporting the final results, which we come to shortly.

L. Method of Computing Remedy Alternatives

For each remedy alternative, dollar values for costs, revenue, profits, and consumer surplus are calculated by the model in real dollars for each of the years, 1995-2025. These dollar values are calculated in real terms, in dollars of constant purchasing power, as of the year 2001.

It is generally standard practice to assume that money has at least some time value. That is, a dollar now is preferable to a dollar ten years from now, even if both dollars otherwise have the same purchasing power. One reason people prefer the dollar now is that money can be invested and earn interest. Another reason is that people are impatient.

In regulatory analysis of U.S. government regulations (e.g., under Executive Order 12886), it is standard practice to use a 7% real discount rate. This discount rate is somewhat akin to an interest rate. This means that future dollars will be discounted compared with present dollars, while past dollars will accumulate interest compared to present dollars.

Attachment E provides an example of how the 7% real discount

rate can be applied to Microsoft's real monopoly revenues. In Attachment E it can be seen that Microsoft's revenues for its Windows monopoly were rather small, compared to what they will be if Microsoft operating systems continue to be a rapidly growing monopoly. In 1995 Microsoft's revenues for its Windows monopoly were only $3.0 billion in 2001 dollars. In 2002 they were estimated at $9.1 billion. In 2025 they are projected to be $34.1 billion in 2001 dollars.

When we apply the 7% discount factor, the picture changes somewhat. Revenues for 1995 "earn interest" of 50% when brought to 2001, while revenues from 2025 are discounted 80.3% from the value of equivalent purchasing power in of 2001. Discounted revenues for 1995 become larger ($4.5 billion) while discounted revenues for 2025 become smaller ($6.7 billion). The projected undiscounted revenues always grow, but the discounted revenues are projected to reach a peak in 2008, with $17.1 billion in undiscounted revenues and $10.65 billion in discounted revenues.

This illustrates an important cause of one of the more interesting results which emerge from the economic analysis: Because Microsoft's monopoly revenues are growing rapidly, we may anticipate worse damage to consumers in the future than what has already occurred in the past. Attachment F provides some

comparisons for the Windows operating system monopoly which illustrate this result.

In Attachment F, the values for consumer surplus, competitors' profits, Microsoft's profits, and for the sum of these, total surplus, are provided for the past (1995-2001), the future (2002-2025), and in total (1995-2025). The top half of the Attachment shows the aggregated values of these quantities. The bottom half shows how these quantities compare with the same quantities along the Lawful Path. All quantities from the past earned interest at 7% per year, while all quantities from the future are discounted at the rate of 7% per year back to 2001 dollars.

Looking at the top half of Attachment F, we see both past and future values for "No Remedy," a "100% Effective Conduct Remedy," and a "3-firm APM Structural Remedy." In all cases, the future values for consumer surplus, Microsoft profits, and Total Surplus are substantially larger in the future, than in the past. In all these cases, the future values are more than double the size of the past values, even though the future is discounted and the past is inflated.

In the middle of Attachment F, we see the aggregated values for Lawful Path. Again all the future values are at least double the past values. If Microsoft had always pursued the Lawful Path,

its profits would be lower, both in the past and in the future. Even on the Lawful Path, Microsoft's future profits are more than double its lawful past profits. Again, this is true even though past profits are inflated and future profits are discounted.

In the bottom half of Attachment F, the various aggregates in the top half of the Attachment are compared with the Lawful Path. If we compare "No Remedy" with the Lawful Path, we see very interesting differences between past and future. These differences are on the order of 10 to 1. Consumers in the past lost $4.1 billion in consumer surplus, but are scheduled to lose $35.0 billion in the future. Competitors lost $2.6 billion profit in the past, but are scheduled to lose $31.5 billion profit in the future.

Microsoft, by contrast, does extremely well. Microsoft gained $6.7 in unlawful extra profit in the past, but is scheduled to receive $60.4 billion in unlawful extra profit in the future. These numbers should give the Department of Justice and the Court some pause before adopting any settlement which effectively endorses continued extraction of profits from consumers due to anti-competitive conduct by Microsoft.

We may compare these numbers with what may happen under two alternative remedies. In the past (which no remedy can change), consumers lost $4.1 billion. In the future, they will lose an

additional $4.7 billion under a 100% effective conduct remedy, but only an additional $0.3 billion under a 3-firm structural split-up of Microsoft Corporation.

Under a 100% effective conduct remedy, competitors in the future will still lose $6.7 billion while Microsoft gains $9.1 billion, relative to the Lawful Path. By contrast, under the 3-firm structural remedy, competitors lose $26.4 billion in the future, while Microsoft gains $26.5 billion in the future, relative to the lawful path. In other words, competitors benefit more from a 100% effective conduct remedy, while both consumers and Microsoft gain more from a structural remedy. This is an amazing result, which has some startling implications for how best to resolve this case.

This result does not appear to be an artifact of making peculiar assumptions in the economic model. The result is most likely due to the limited space available in the market for more than two or three firms. If Microsoft remains intact, competitors have room to enter the market and earn profits. However, if Microsoft is split into two or three firms, there is less room in the market for competitors to enter. Accordingly, under a structural remedy, the Microsoft successor firms all presumably initially owned by current Microsoft shareholders earn much of the

profits which competitors might otherwise be able to take away.

This does not mean, as a practical matter, that competitors are necessarily better off with a conduct remedy than with a structural remedy. In actual practice, a pure conduct remedy cannot be 100% effective. A weak conduct remedy might be worse for competitors, while a strong conduct remedy may be better for competitors, as compared with a structural remedy. Likewise, Microsoft is not necessarily worse off with a conduct remedy than with a structural remedy. In comparison with a structural remedy, Microsoft may fare better with a weak conduct remedy than with a with a strong conduct remedy

M. Analysis of Computed Remedy Alternatives

Attachments G, H, I, and J provide a summary of the computations for several remedy alternatives. These summaries provide estimates of consumer surplus, profits for both Microsoft and its competitors, and total surplus. Total surplus is simply the sum of consumer surplus and the profits of all firms in the industry. These figures are aggregated for all the years, 1995-2025. They are expressed in real dollars, as of 2001. They are also appropriately discounted to the year 2001 at the standard 7% real discount rate which is commonly used in the analysis of United

States government regulations.

The first page of each of these Attachments provides the total values for each of the quantities, Consumer Surplus, Competitors' Profits, Microsoft's Profits, and Total Surplus. These figures are computed and summarized for each of the alternative circumstances. These circumstances are "No Remedy," conduct remedies with various levels of effectiveness, thirteen structural remedies which split Microsoft into two or more firms, and the "Lawful Path" in which Microsoft never disobeyed the antitrust laws.

The second page of each of these attachments compares each of the alternative circumstances with the Lawful Path. These numbers are calculated by subtracting the total quantities under the Lawful Path from the total quantities available under each alternative circumstance.

For example, in Attachment G Consumer Surplus under the Lawful Path is $105.9 billion, but under "No Remedy" the Consumer Surplus is only $66.7 billion. On the second page of the Attachment these two numbers are subtracted, so that we can see that consumers were/will be deprived of $39.2 billion in consumer value, if there is no remedy. Likewise, Microsoft has obtained/will obtain $108.5 billion under "No Remedy", but would have obtained only $41.3 billion under Lawful Path. The difference of $67.2 billion in

profit is shown on the second page of the Attachment. This figure is representative of the unjust gain (the fruits of Microsoft's unlawful conduct) that Microsoft has obtained or will obtain if there is no remedy.

Attachments G and I calculate the remedy alternatives under the assumption that the only monopoly of concern is the Operating System ("Desktop Platforms") monopoly. Attachments H and J calculate the remedy alternatives under the assumption that all of Microsoft's monopolies ("Platforms" + "Applications" + "Enterprise Software") are of concern. The figures in Attachments H and J are approximately three times as large as the figures in Attachments G and I.

Clearly, "No Remedy" is not an option for this Court. These attachments also provide bottom line information on various conduct and structural remedies which the Court is entitled to consider. The first eight remedies are conventional remedies of a conduct or structural variety. In all four attachments, it may be seen that "APM, 3-firms" is the best of the conventional (non-RPM) remedies in the sense that best means maximum CS or TS. The "APM, 3-firms" remedy is simply a split-up of Microsoft Corporation into three competing successor companies, of the ordinary absolute profit maximizing (APM) variety. The three-firm split-up is similar to

what other economists have advocated.[17]

We may confirm this conclusion by reading the first nine entries in the columns for "Consumer Surplus" and in the columns for "Total Surplus," on either the first or second page of each attachment. Of the first nine entries, the 3-firm APM remedy always has the largest consumer surplus, and also has the largest total surplus. It may also be noted that this 3-firm remedy restores most, but not all, of the consumer surplus and total surplus that would otherwise be wrongfully taken by Microsoft. This may be seen by the negative numbers for this remedy on the second page of each attachment.

Also of note for the 3-firm structural remedy is that Microsoft profits considerably from its unlawful acts, relative to the Lawful Path. This may be seen from the large positive numbers

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17 See, for example, Robert E. Litan, Roger G. Noll, William D. Nordhaus, Frederic Scherer, "Remedies Brief of Amici Curiae," United States v. Microsoft Corp., filed with District Court, April 27, 2000; Lenard, Thomas M., "Creating Competition in the Market for Operating Systems: A Structural Remedy for Microsoft," Progress and Freedom Foundation Paper (January 2000); and Lenard, Thomas M., "Creating Competition in the Market for Operating Systems: Alternative Structural Remedies in the Microsoft Case," Progress and Freedom Foundation Paper (November 2000). These five economists advocate the three-firm split-up for Microsoft's Operating System company, and a separate company for Microsoft's applications.

for Microsoft's Profits for this remedy on the second page of each attachment. For Attachments G and I, Microsoft achieves an unlawful gain of $33.2 billion, even with the 3-firm split up. For Attachments H and J, Microsoft achieves an unlawful gain of $96.2 billion. Most of these remaining unlawful profits come from the pockets of competitors and would-be competitors (many of whom are not identifiable) who were excluded or deterred from competition by Microsoft's anti-competitive acts.

The consideration of structural remedies involving relative profit maximizing (RPM) incentives is as follows. In all cases, the RPM remedy is applied to only two Microsoft successor firms, after Microsoft is split into two competitors. These are shown in the attachments as "RPM, z=0.000" through "RPM, z=0.900". "z" is the value of the parameter z in the RPM firm's goal function. "z" tells us the extent to which a firm's business managers are financially motivated to maximize the relative profits of their business firm, rather than absolute profits. If z=0.0, there is no RPM incentive. If z=1.0, managers are solely motivated to maximize relative profits. For purposes of these comments, only the outcomes for values of z generally between 0.0 and 0.9 are illustrated. However, in the scenarios shown on Attachments I and J which allow a change in z (referred to as zbump=0.3) some

percentage of all scenarios listed as having z values from 0.0 to 0.2 will have a z value of less than 0.0.

Attachments G and H assume that the value of z remains fixed, and that it does not respond to changing circumstances. In both attachments, consumer surplus is maximized when z=0.4 and total surplus is maximized when z=0.5. In Attachment G, the RPM solution can improve consumer surplus by $2.9 billion, and can improve total surplus by $4.6 billion over the 3-firm split up, which is the best conventional remedy. In Attachment H, the RPM solution can improve consumer surplus by $8.6 billion, and can improve total surplus by $13.5 billion over the 3-firm split up.

Attachments I and J assume that the value of z is more flexible, and can change in response to changing circumstances. The circumstance to which z is allowed to respond is the circumstance where one (or both) RPM firms are experiencing losses. These losses, of course, should not simply be short-term or even annual losses, but losses that are more chronic or long-term. In these computer runs, z is allowed to vary through a small range of values. In these attachments, z was allowed to range from the indicated value of z down to the smaller value of z which is 0.3 lower.

In Attachments I and J, consumer surplus is maximized when

z=0.6, but this line includes some scenarios which can range down to z=0.3 due to the effect of a change in z as large as 0.3 (i.e., zbump = 0.3). Total surplus is maximized when z=0.8, but can range down to z=0.5 in the same manner due to a change in z as large as 0.3. In Attachment I, the RPM solution can improve consumer surplus by $9.3 billion, and can improve total surplus by $5.2 billion over the 3-firm split up, which is the best conventional remedy. In Attachment J, the RPM solution can improve consumer surplus by $27.2 billion, and can improve total surplus by $15.2 billion over the 3-firm split up.

In each of the Attachments, the 2-firm RPM remedy also reduces Microsoft's unlawfully acquired profits by a few billion dollars, relative to what Microsoft would obtain from the conventional 3-firm APM remedy. Hence, in all respects, whether measured in terms of increasing consumer surplus, increasing total surplus, or in the diminution of Microsoft's unjust fruits of its unlawful conduct, the RPM incentive system is capable of doing better than the best of the conventional economic remedies (APM).

N. Equity Analysis in Light of the Economic Analysis

The primary objectives of the antitrust laws, expressed in

economic terms, is either to maximize consumer surplus or to maximize total surplus (or perhaps both, though it may not be possible to maximize both simultaneously). The Court should select a remedy according to whichever objective best fits the equity requirements of the antitrust law. According to the economic analysis just provided, a structural remedy combined with an RPM incentive, is better than any conventional structural or conduct remedy. Among the conventional remedies, the 3-firm split-up is better than any conceivable conduct remedy, including even a 100% effective conduct remedy. And, of course, among the conduct remedies, a strong conduct remedy (such as the Litigating States have proposed) is better than the weak conduct remedy which the DOJ has proposed.

A secondary objective is to assure that Microsoft does not gain extra profit in the future as a result of the future effect of its past (and continuing) unlawful behavior.

The computerized economic model (whose source code is attached as Attachments K-S) only models the price effects of Microsoft's anti-competitive acts. An additional harm caused by Microsoft in this case includes losses of innovation in the software industry.

Due to the failure of the United States to address this issue analytically in the CIS resource constraints precluded modeling

these additional losses in consumer surplus and total surplus. It is possible that the dollar value of this damage to the consuming public (in the form of innovation which did not occur) caused by Microsoft's unlawful conduct exceeds the unlawful profits calculated by the model. Thus, it is unlikely that consumers and the public will ever regain that to which they are entitled as a matter of equity.

Attachment A-2

Microsoft Corporation
Annual Revenue by Business Division
Real 2001 dollars (in billions)

Calendar Year	Desktop Platforms	Platforms & Enterprise	Platforms & Applications	Platforms, Applications & Enterprise
1995	3.003532	4.207892	6.855180	8.059541
1996	3.727131	5.347350	8.460443	10.080662
1997	5.035883	7.458570	11.217205	13.639892
1998	6.454595	9.391382	14.204543	17.141330
1999	7.693463	12.210871	17.149630	21.667038
2000	8.186612	13.192271	17.729841	22.735500
2001	7.204304	11.348110	16.786433	20.930239
2002	9.142475	14.955194	19.792872	25.605591
2003	10.588836	17.711490	22.821122	29.943776
2004	12.001410	20.453823	25.771053	34.223466
2005	13.364562	23.136215	28.613009	38.384662
2006	14.670118	25.728773	31.332338	42.390993
2007	15.915669	28.215390	33.925832	46.225553
2008	17.102945	30.590792	36.398387	49.886235
2009	18.236419	32.857597	38.760186	53.381363
2010	19.322209	35.023736	41.024499	56.726025
2011	20.367255	37.100384	43.206070	59.939200
2012	21.378745	39.100399	45.319994	63.041648
2013	22.363742	41.037214	47.380985	66.054457
2014	23.328943	42.924094	49.402933	68.998085
2015	24.280557	44.773678	51.398672	71.891793
2016	25.224251	46.597717	53.379885	74.753351
2017	26.165138	48.406960	55.357103	77.598925
2018	27.107806	50.211128	57.339763	80.443086
2019	28.056353	52.018953	59.336296	83.298896
2020	29.014438	53.838247	61.354226	86.178035
2021	29.985331	55.675990	63.400283	89.090942
2022	30.971962	57.538426	65.480504	92.046967
2023	31.976974	59.431156	67.600333	95.054514
2024	33.002757	61.359227	69.764708	98.121178
2025	34.051497	63.327217	71.978146	101.253866

Source: Computed from spreadsheet data provided on Microsoft's Investor Relations website (downloaded December 5, 2001 from http://www.microsoft.com/msft/history.htm) and CPI indices from the BLS website (Downloaded December 5, 2001 from http://stats.bls.gov/cpi/home.htm).

Attachment B

Microsoft Corporation
Profit & Loss Items
As a Percent of Revenue
Ten-Year Average of Percentages
(Microsoft Fiscal Years 1992-2001)
& Classification of Expense Items
Into Short-Run and Long-Run Cost.

Profit & Loss Item	As a Percent of Revenue FY 1992-2001 ten-year average	
Revenue	100.00%	Categorized as:
Operating expenses:		
Cost of revenue	18.51%	Short-Run Cost
Research and development	14.73	Long-Run Cost
In-process R&D	0.19	Long-Run Cost
Sales and marketing	22.14	Short-Run Cost
General and administrative	3.63	Long-Run Cost
Other expenses	0.36	Short-Run Cost
Total operating expenses	59.59	
Total Short-Run Cost	41.01%	
Total Long-Run Cost	18.55%	
Operating income	40.41%	
Losses on equity investees and other	-0.55	
Investment income	6.04	
Noncontinuing items	-0.27	
Income before income taxes	45.97	
Provision for income taxes	15.67	
Net income	30.29	

Source: Computed from spreadsheet data provided on Microsoft's Investor Relations website (downloaded December 5, 2001 from http://www.microsoft.com/msft/history.htm).

Attachment C

Adjusted and Unadjusted Cost Levels
For Firms in 35 Static Scenarios
And Long-Run Probability of Scenario

Static Scenario	Long-Run Probability	Unadjusted Cost Levels Firm1	Firm2	Firm3	Adjusted Cost Levels Firm 1	Firm 2	Firm 3
1	2.7000%	5	5	5	4.7500	5.0000	5.2500
2	6.7500%	4	5	5	4.0000	4.8333	5.1667
3	5.6250%	4	4	5	3.8333	4.1667	5.0000
4	1.5625%	4	4	4	3.7500	4.0000	4.2500
5	5.4000%	3	5	5	3.0000	4.8333	5.1667
6	9.0000%	3	4	5	3.0000	4.0000	5.0000
7	3.7500%	3	4	4	3.0000	3.8333	4.1667
8	3.6000%	3	3	5	2.8333	3.1667	5.0000
9	3.0000%	3	3	4	2.8333	3.1667	4.0000
10	0.8000%	3	3	3	2.7500	3.0000	3.2500
11	4.0500%	2	5	5	2.0000	4.8333	5.1667
12	6.7500%	2	4	5	2.0000	4.0000	5.0000
13	2.8125%	2	4	4	2.0000	3.8333	4.1667
14	5.4000%	2	3	5	2.0000	3.0000	5.0000
15	4.5000%	2	3	4	2.0000	3.0000	4.0000
16	1.8000%	2	3	3	2.0000	2.8333	3.1667
17	2.0250%	2	2	5	1.8333	2.1667	5.0000
18	1.6875%	2	2	4	1.8333	2.1667	4.0000
19	1.3500%	2	2	3	1.8333	2.1667	3.0000
20	0.3375%	2	2	2	1.7500	2.0000	2.2500
21	2.7000%	1	5	5	1.0000	4.8333	5.1667
22	4.5000%	1	4	5	1.0000	4.0000	5.0000
23	1.8750%	1	4	4	1.0000	3.8333	4.1667
24	3.6000%	1	3	5	1.0000	3.0000	5.0000
25	3.0000%	1	3	4	1.0000	3.0000	4.0000
26	1.2000%	1	3	3	1.0000	2.8333	3.1667
27	2.7000%	1	2	5	1.0000	2.0000	5.0000
28	2.2500%	1	2	4	1.0000	2.0000	4.0000
29	1.8000%	1	2	3	1.0000	2.0000	3.0000
30	0.6750%	1	2	2	1.0000	1.8333	2.1667
31	0.9000%	1	1	5	0.8333	1.1667	5.0000
32	0.7500%	1	1	4	0.8333	1.1667	4.0000
33	0.6000%	1	1	3	0.8333	1.1667	3.0000
34	0.4500%	1	1	2	0.8333	1.1667	2.0000
35	0.1000%	1	1	1	0.7500	1.0000	1.2500

Source: Adapted from file "CostList.txt" generated by the computer program "MS1File.bas".

Attachment D

Point Values and Equivalent Probabilities for the Weighting of Alternative Basic Parameters for the Scenario Analyses.

Cost-Spread Ratio (Low Cost/High Cost)	Point Values	Equivalent Probability
25.00%	1	12.5%
33.33%	1	12.5%
40.00%	2	25.0%
50.00%	2	25.0%
66.67%	2	25.0%

Fixed-Cost Portion Of Long-Run Cost	Point Values	Equivalent Probability
0.00%	1	12.5%
25.00%	2	25.0%
50.00%	2	25.0%
75.00%	2	25.0%
100.00%	1	12.5%

Transition Speed (Allowed Cost Level Jumps)	Point Values	Equivalent Probability
1.5	1	33.3%
2.5	1	33.3%
4.5	1	33.3%

Transition Length (Number of Years)	Point Values	Equivalent Probability
3	1	33.3%
5	1	33.3%
8	1	33.3%

Attachment E

Microsoft's Real Monopoly Revenues by Year
Discounted at 7% Rate per Year
Real 2001 dollars (in billions)

Year	Undiscounted Revenues	Discount Factor	Discounted Revenues
1995	3.003532	1.500731	4.507492
1996	3.727131	1.402552	5.227496
1997	5.035883	1.310796	6.601017
1998	6.454595	1.225043	7.907158
1999	7.693463	1.144900	8.808247
2000	8.186612	1.070000	8.759675
2001	7.204304	1.000000	7.204304
2002	9.142475	0.934579	8.544368
2003	10.588836	0.873439	9.248699
2004	12.001410	0.816298	9.796724
2005	13.364562	0.762895	10.195759
2006	14.670118	0.712986	10.459589
2007	15.915669	0.666342	10.605279
2008	17.102945	0.622750	10.650851
2009	18.236419	0.582009	10.613758
2010	19.322209	0.543934	10.509997
2011	20.367255	0.508349	10.353674
2012	21.378745	0.475093	10.156882
2013	22.363742	0.444012	9.929763
2014	23.328943	0.414964	9.680676
2015	24.280557	0.387817	9.416412
2016	25.224251	0.362446	9.142423
2017	26.165138	0.338734	8.863031
2018	27.107806	0.316574	8.581630
2019	28.056353	0.295864	8.300855
2020	29.014438	0.276508	8.022726
2021	29.985331	0.258419	7.748772
2022	30.971962	0.241513	7.480127
2023	31.976974	0.225713	7.217616
2024	33.002757	0.210947	6.961821
2025	34.051497	0.197146	6.713130

Source: Adapted from the "Rev_Disc.txt" file generated by the "MS6Summ.bas" program using RevStream=1 (Microsoft's Platform-only revenues) and the data in Attachment A.

Attachment F

Consumer Surplus & Profits
For Past (1995-2001) & Future (2002-2025) Time Intervals
Comparisons for Selected Remedies and Lawful Path

Time Interval	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
Aggregates for No Remedy Path:				
Past:	12.1839999	0.0000000	19.8218227	32.0058226
Future:	54.4862867	0.0000000	88.6422783	143.1285650
Total:	66.6702866	0.0000000	108.4641010	175.1343876
Aggregates for 100% Effective Conduct Remedy:				
Past:	12.1839999	0.0000000	19.8218227	32.0058226
Future:	84.8797426	24.7805427	37.2686222	146.9289075
Total:	97.0637425	24.7805427	57.0904448	178.9347301
Aggregates for 3-firm APM Structural Remedy:				
Past:	12.1839999	0.0000000	19.8218227	32.0058226
Future:	89.2098711	5.1158769	54.7189826	149.0447306
Total:	101.3938710	5.1158769	74.5408053	181.0505532
Aggregates for Lawful Path:				
Past:	16.3216726	2.6242527	13.0930073	32.0389326
Future:	89.5353459	31.5087389	28.2007864	149.2448711
Total:	105.8570185	34.1329915	41.2937937	181.2838037

Time Interval	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
Comparing: No Remedy minus LawfulPath:				
Past:	-4.1376727	-2.6242527	6.7288153	-0.0331101
Future:	-35.0490592	-31.5087389	60.4414920	-6.1163061
Total:	-39.1867319	-34.1329915	67.1703073	-6.1494161
Comparing: 100% Effective Conduct Remedy minus LawfulPath:				
Past:	-4.1376727	-2.6242527	6.7288153	-0.0331101
Future:	-4.6556032	-6.7281961	9.0678358	-2.3159636
Total:	-8.7932759	-9.3524488	15.7966511	-2.3490736
Comparing: 3-firm APM Structural Remedy minus LawfulPath:				
Past:	-4.1376727	-2.6242527	6.7288153	-0.0331101
Future:	-0.3254747	-26.3928620	26.5181963	-0.2001404
Total:	-4.4631474	-29.0171147	33.2470116	-0.2332505

Source: Adapted from output file "AGGRWTD8.txt" from Lundgren's six computer programs, where revstream=1 in "MS6Summ.bas".

Summary Output of Alternative Remedies for Microsoft.
Revenue Stream = Platforms only.
The value of z in the RPM scenarios is fixed as indicated.
Figures are in billions of real 2001 dollars (7% discount rate).
Figures are aggregated for the years 1995-2025.
Figures are a weighted average of all computed scenarios.

Total Aggregates for Alternative Remedies:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	66.6702866	0.0000000	108.4641010	175.1343876
20% Conduct:	72.7489789	4.9561086	98.1893712	175.8944587
40% Conduct:	78.8276711	9.9122172	87.9146414	176.6545298
60% Conduct:	84.9063629	14.8683262	77.6399093	177.4145984
80% Conduct:	90.9850527	19.8244345	67.3651770	178.1746642
100% Conduct:	97.0637425	24.7805427	57.0904448	178.9347301
2-Monopolies:	97.2443831	20.0995342	61.7667505	179.1106678
APM,2-firms:	97.6056643	10.7375170	71.1193619	179.4625432
APM,3-firms:	101.3938710	5.1158769	74.5408053	181.0505532
RPM,z=0.000:	97.6056643	10.7375170	71.1193619	179.4625432
RPM,z=0.100:	100.0494922	10.5198190	70.1711669	180.7404781
RPM,z=0.200:	101.7502572	10.2983154	70.2577918	182.3063644
RPM,z=0.300:	104.1852610	10.0963259	69.3834217	183.6650087
RPM,z=0.400:	104.3235767	9.9646972	70.6687936	184.9570675
RPM,z=0.500:	103.6437601	9.8490147	72.1858682	185.6786430
RPM,z=0.600:	100.2265622	9.7727729	75.5755929	185.5749280
RPM,z=0.700:	95.5628679	9.7447668	79.3962211	184.7038557
RPM,z=0.800:	89.8870594	9.7966324	83.5152687	183.1989605
RPM,z=0.900:	84.3841146	10.0564241	87.0578989	181.4984376
Lawful Path:	105.8570185	34.1329915	41.2937937	181.2838037

Comparing Remedies: Each remedy minus Lawful Path:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	-39.1867319	-34.1329915	67.1703073	-6.1494161
20% Conduct:	-33.1080412	-29.1768834	56.8955769	-5.3893477
40% Conduct:	-27.0293505	-24.2207753	46.6208465	-4.6292793
60% Conduct:	-20.9506588	-19.2646663	36.3461144	-3.8692107
80% Conduct:	-14.8719674	-14.3085576	26.0713827	-3.1091422
100% Conduct:	-8.7932759	-9.3524488	15.7966511	-2.3490736
2-Monopolies:	-8.6126354	-14.0334574	20.4729568	-2.1731359
APM,2-firms:	-8.2513542	-23.3954745	29.8255682	-1.8212605
APM,3-firms:	-4.4631474	-29.0171147	33.2470116	-0.2332505
RPM,z=0.000:	-8.2513542	-23.3954745	29.8255682	-1.8212605
RPM,z=0.100:	-5.8075263	-23.6131726	28.8773732	-0.5433256
RPM,z=0.200:	-4.1067613	-23.8346762	28.9639981	1.0225607
RPM,z=0.300:	-1.6717575	-24.0366656	28.0896281	2.3812049
RPM,z=0.400:	-1.5334418	-24.1682943	29.3749999	3.6732638
RPM,z=0.500:	-2.2132584	-24.2839768	30.8920745	4.3948392
RPM,z=0.600:	-5.6304563	-24.3602186	34.2817992	4.2911243
RPM,z=0.700:	-10.2941506	-24.3882248	38.1024274	3.4200520
RPM,z=0.800:	-15.9699591	-24.3363591	42.2214750	1.9151568
RPM,z=0.900:	-21.4729039	-24.0765674	45.7641052	0.2146339

Source: Adapted from output file "AGGCWTD8.txt" from Lundgren's six computer programs, where zbump=0.0 in "MS5TranR.bas" and revstream=1 in "MS6Summ.bas".

Summary Output of Alternative Remedies for Microsoft.
Revenue Stream = Platforms+Applications+Enterprise.
The value of z in the RPM scenarios is fixed as indicated.
Figures are in billions of real 2001 dollars (7% discount rate).
Figures are aggregated for the years 1995-2025.
Figures are a weighted average of all computed scenarios.

Total Aggregates for Alternative Remedies:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	193.2538881	0.0000000	314.3995669	507.6534549
20% Conduct:	211.1377498	14.6052416	284.1619090	509.9049004
40% Conduct:	229.0216116	29.2104832	253.9242510	512.1563459
60% Conduct:	246.9054718	43.8157260	223.6865862	514.4077840
80% Conduct:	264.7893265	58.4209665	193.4489212	516.6592142
100% Conduct:	282.6731812	73.0262070	163.2112562	518.9106443
2-Monopolies:	283.2511215	59.2815132	176.9034634	519.4360981
APM,2-firms:	284.4070022	31.7921257	204.2878778	520.4870056
APM,3-firms:	295.4965492	15.1737142	214.5194539	525.1897174
RPM,z=0.000:	284.4070022	31.7921257	204.2878778	520.4870056
RPM,z=0.100:	291.5721057	31.1496087	201.5156026	524.2373169
RPM,z=0.200:	296.5683886	30.4958291	201.7670167	528.8312345
RPM,z=0.300:	303.7018786	29.8995957	199.2199958	532.8214701
RPM,z=0.400:	304.1242099	29.5110516	202.9787968	536.6140583
RPM,z=0.500:	302.1262579	29.1695258	207.4368322	538.7326159
RPM,z=0.600:	292.1012489	28.9444187	217.3834949	538.4291624
RPM,z=0.700:	278.4197409	28.8617920	228.5928304	535.8743633
RPM,z=0.800:	261.7511839	29.0150366	240.6874245	531.4536450
RPM,z=0.900:	245.5925757	29.7822425	251.0843904	526.4592086
Lawful Path:	307.5699061	99.8842184	118.3262301	525.7803546

Comparing Remedies: Each remedy minus Lawful Path:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	-114.3160180	-99.8842184	196.0733368	-18.1268996
20% Conduct:	-96.4321609	-85.2789783	165.8356771	-15.8754620
40% Conduct:	-78.5483037	-70.6737381	135.5980175	-13.6240244
60% Conduct:	-60.6644435	-56.0684954	105.3603526	-11.3725863
80% Conduct:	-42.7805842	-41.4632534	75.1226894	-9.1211483
100% Conduct:	-24.8967249	-26.8580114	44.8850261	-6.8697102
2-Monopolies:	-24.3187846	-40.6027052	58.5772333	-6.3442565
APM,2-firms:	-23.1629040	-68.0920927	85.9616478	-5.2933489
APM,3-firms:	-12.0733569	-84.7105042	96.1932238	-0.5906372
RPM,z=0.000:	-23.1629040	-68.0920927	85.9616478	-5.2933489
RPM,z=0.100:	-15.9978005	-68.7346098	83.1893726	-1.5430376
RPM,z=0.200:	-11.0015175	-69.3883893	83.4407867	3.0508799
RPM,z=0.300:	-3.8680276	-69.9846227	80.8937657	7.0411155
RPM,z=0.400:	-3.4456962	-70.3731668	84.6525667	10.8337037
RPM,z=0.500:	-5.4436482	-70.7146926	89.1106021	12.9522613
RPM,z=0.600:	-15.4686572	-70.9397997	99.0572648	12.6488078
RPM,z=0.700:	-29.1501652	-71.0224264	110.2666003	10.0940087
RPM,z=0.800:	-45.8187223	-70.8691818	122.3611945	5.6732904
RPM,z=0.900:	-61.9773304	-70.1019759	132.7581603	0.6788540

Source: Adapted from output file "AGGCWTD8.txt" from Lundgren's six computer programs, where zbump=0.0 in "MS5TranR.bas" and revstream=4 in "MS6Summ.bas".

Summary Output of Alternative Remedies for Microsoft.
Revenue Stream = Platforms only.
The actual value of z in the RPM scenarios varies
between the indicated z and z-0.3.
Figures are in billions of real 2001 dollars (7% discount rate).
Figures are aggregated for the years 1995-2025.
Figures are a weighted average of all computed scenarios.

Total Aggregates for Alternative Remedies:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	66.6702866	0.0000000	108.4641010	175.1343876
20% Conduct:	72.7489789	4.9561086	98.1893712	175.8944587
40% Conduct:	78.8276711	9.9122172	87.9146414	176.6545298
60% Conduct:	84.9063629	14.8683262	77.6399093	177.4145984
80% Conduct:	90.9850527	19.8244345	67.3651770	178.1746642
100% Conduct:	97.0637425	24.7805427	57.0904448	178.9347301
2-Monopolies:	97.2443831	20.0995342	61.7667505	179.1106678
APM,2-firms:	97.6056643	10.7375170	71.1193619	179.4625432
APM,3-firms:	101.3938710	5.1158769	74.5408053	181.0505532
RPM,z=0.000:	97.6178004	10.7375170	71.0922687	179.4475861
RPM,z=0.100:	100.0792119	10.5200355	70.1142454	180.7134929
RPM,z=0.200:	102.4749421	10.3041911	69.0645211	181.8436543
RPM,z=0.300:	105.5117884	10.1207266	67.4459993	183.0785144
RPM,z=0.400:	107.9097123	10.0131838	66.0581453	183.9810414
RPM,z=0.500:	109.3712929	9.9176811	65.7228881	185.0118620
RPM,z=0.600:	110.6707337	9.8362632	65.0862391	185.5932361
RPM,z=0.700:	109.3070756	9.7864170	67.0511494	186.1446421
RPM,z=0.800:	106.7436886	9.7342133	69.7748845	186.2527864
RPM,z=0.900:	101.4498564	9.7168714	74.5723925	185.7391203
Lawful Path:	105.8570185	34.1329915	41.2937937	181.2838037

Comparing Remedies: Each remedy minus Lawful Path:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	-39.1867319	-34.1329915	67.1703073	-6.1494161
20% Conduct:	-33.1080412	-29.1768834	56.8955769	-5.3893477
40% Conduct:	-27.0293505	-24.2207753	46.6208465	-4.6292793
60% Conduct:	-20.9506588	-19.2646663	36.3461144	-3.8692107
80% Conduct:	-14.8719674	-14.3085576	26.0713827	-3.1091422
100% Conduct:	-8.7932759	-9.3524488	15.7966511	-2.3490736
2-Monopolies:	-8.6126354	-14.0334574	20.4729568	-2.1731359
APM,2-firms:	-8.2513542	-23.3954745	29.8255682	-1.8212605
APM,3-firms:	-4.4631474	-29.0171147	33.2470116	-0.2332505
RPM,z=0.000:	-8.2392181	-23.3954745	29.7984750	-1.8362176
RPM,z=0.100:	-5.7778066	-23.6129560	28.8204517	-0.5703108
RPM,z=0.200:	-3.3820764	-23.8288004	27.7707274	0.5598506
RPM,z=0.300:	-0.3452300	-24.0122649	26.1522056	1.7947106
RPM,z=0.400:	2.0526938	-24.1198077	24.7643516	2.6972377
RPM,z=0.500:	3.5142744	-24.2153105	24.4290944	3.7280583
RPM,z=0.600:	4.8137152	-24.2967283	23.7924455	4.3094323
RPM,z=0.700:	3.4500571	-24.3465745	25.7573557	4.8608383
RPM,z=0.800:	0.8866701	-24.3987783	28.4810908	4.9689827
RPM,z=0.900:	-4.4071621	-24.4161201	33.2785988	4.4553166

Source: Adapted from output file "AGGCWTD8.txt" from Lundgren's six computer programs, where zbump=0.3 in "MS5TranR.bas" and revstream=1 in "MS6Summ.bas".

Summary Output of Alternative Remedies for Microsoft.
Revenue Stream = Platforms+Applications+Enterprise.
The actual value of z in the RPM scenarios varies
between the indicated z and z-0.3.
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Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	193.2538881	0.0000000	314.3995669	507.6534549
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APM,3-firms:	295.4965492	15.1737142	214.5194539	525.1897174
RPM,z=0.000:	284.4427827	31.7921257	204.2079998	520.4429082
RPM,z=0.100:	291.6597578	31.1502485	201.3477301	524.1577365
RPM,z=0.200:	298.6895994	30.5131724	198.2740901	527.4768619
RPM,z=0.300:	307.5955291	29.9716086	193.5330233	531.1001609
RPM,z=0.400:	314.6358118	29.6541255	189.4628042	533.7527415
RPM,z=0.500:	318.9329183	29.3722039	188.4709348	536.7760570
RPM,z=0.600:	322.7383754	29.1318953	186.6145056	538.4847762
RPM,z=0.700:	318.7571699	28.9848037	192.3609534	540.1029270
RPM,z=0.800:	311.2289728	28.8306843	200.3597163	540.4193734
RPM,z=0.900:	295.6928896	28.7794391	214.4391657	538.9114945
Lawful Path:	307.5699061	99.8842184	118.3262301	525.7803546

Comparing Remedies: Each remedy minus Lawful Path:

Remedy	Consumer Surplus	Competitor Profits	Microsoft Profits	Total Surplus
No-Remedy:	-114.3160180	-99.8842184	196.0733368	-18.1268996
20% Conduct:	-96.4321609	-85.2789783	165.8356771	-15.8754620
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60% Conduct:	-60.6644435	-56.0684954	105.3603526	-11.3725863
80% Conduct:	-42.7805842	-41.4632534	75.1226894	-9.1211483
100% Conduct:	-24.8967249	-26.8580114	44.8850261	-6.8697102
2-Monopolies:	-24.3187846	-40.6027052	58.5772333	-6.3442565
APM,2-firms:	-23.1629040	-68.0920927	85.9616478	-5.2933489
APM,3-firms:	-12.0733569	-84.7105042	96.1932238	-0.5906372
RPM,z=0.000:	-23.1271235	-68.0920927	85.8817698	-5.3374464
RPM,z=0.100:	-15.9101483	-68.7339699	83.0215001	-1.6226181
RPM,z=0.200:	-8.8803067	-69.3710460	79.9478600	1.6965073
RPM,z=0.300:	0.0256230	-69.9126099	75.2067932	5.3198063
RPM,z=0.400:	7.0659057	-70.2300929	71.1365742	7.9723870
RPM,z=0.500:	11.3630122	-70.5120145	70.1447047	10.9957024
RPM,z=0.600:	15.1684692	-70.7523231	68.2882755	12.7044217
RPM,z=0.700:	11.1872638	-70.8994147	74.0347234	14.3225724
RPM,z=0.800:	3.6590666	-71.0535341	82.0334862	14.6390188
RPM,z=0.900:	-11.8770165	-71.1047793	96.1129357	13.1311399

Source: Adapted from output file "AGGCWTD8.txt" from Lundgren's six computer programs, where zbump=0.3 in "MS5TranR.bas" and revstream=4 in "MS6Summ.bas".

Documentation for BASIC Programs to Simulate Antitrust Remedies for Microsoft Case.

This document, "MS_Sim_Doc.txt", simply describes and documents
six programs for the Microsoft antitrust remedy simulations.
These six programs are named:

MS1File.bas	(0.2 seconds)
MS2ProbA.bas	(10.3 minutes)
MS3ProbR.bas	(18.1 minutes)
MS4TranA.bas	(1.6 minutes)
MS5TranR.bas	(24.9 minutes)
MS6Summ.bas	(1.7 minutes)

The programs should be run in the order indicated,
since files generated by one program are used by
subsequent programs. The running times are approximate,
based on the running times for a 1.6 GHz home computer.
The programs were coded and run in Microsoft QuickBASIC.
The programs may require some recoding, if it is desired
to run them in other versions of the BASIC computer language.

Below is a summary description of what each program does.
Each program has its own more detailed description.

Program MS1File.bas:
This program generates files needed by subsequent programs.
The program generates the "COSTLIST.txt" file,
which details the assumed cost levels for each scenario.
For 3 firms and 5 levels of cost, 35 cost scenarios are
generated.
The program also generates the "Ordering.txt" and "OrderRPM.txt"
files.
These files generate the permutations by which the ranking of
firms
can be reordered. For 3 firms, there are 6 permutations.
"OrderRPM.txt" allows the "MS3ProbR.bas" program to track the
rankings
of two Microsoft successor firms simultaneously.

Program MS2ProbA.bas:
This program computes the probabilites associated with each
scenario, as the industry transitions from a particular starting
point,
and gradually converges towards a long-run stochastic
equilibrium.
This program assigns probabilities for equilibria consisting only
of Absolute Profit Maximizing ("APM") firms.
The starting point varies by the number of Microsoft firms
(msfirms)
in period zero. If msfirms=1, Microsoft starts as a monopoly.
If msfirms=2, Microsoft is split into two firms.

If msfirms=3, Microsoft is split into three firms.
The program uses three different speeds (speed=1,2,3) for the transition.
Probability files are outputted for each msfirms=1,2,3 starting point,
and each speed=1,2,3 for the transition speed.

Program MS3ProbR.bas:
This program is similar to "MS2ProbA.bas", since it computes probabilites associated with each scenario, as the industry transitions
from a particular starting point, and gradually converges towards a
long-run stochastic equilibrium. This program differs from "MS2ProbA.bas",
because it assigns probabilities for equilibria consisting
of two Relative Profit Maximizing ("RPM") firms, along with such APM
firms as may be involved in the transitions. The equilibria automatically
convert to APM equilibria if one or both RPM firms exits the industry.
The program uses three different speeds (speed=1,2,3) for the transition.
Probability files are outputted for the one starting point (msfirms=2),
and each speed=1,2,3 for the transition speed. This program is more
complex than "MS2ProbA.bas" because it must simultaneously track the
rankings of two Microsoft-successor firms simultaneously.

Program MS4TranA.bas:
This program uses the probability data computed by "MS2ProbA.bas"
to compute Consumer Surplus and Profits for both Microsoft and
Microsoft's competitors. These are determined for transition period
zero (iter=0) under the assumption that Microsoft has no competitors
in period zero. In transition periods one through ten, Microsoft is
assumed to have (at least potentially) one or more competitors.
This program only calculates APM equilibria.
The 225 outputted transition (TRAN....txt) files are computed
for three speeds of transition (speed=1,2,3),
five cost ratios for short-run cost (cratio=1,2,3,4,5),
five assumptions concerning the portion of long-run costs
allocated to fixed costs (port=0,1,2,3,4),
and three starting points (msfirms=1,2,3).

Program MS5TranR.bas:
This program uses the probability data computed by "MS3ProbR.bas"
to compute Consumer Surplus and Profits for both Microsoft and Microsoft's competitors. These are determined for transition period
zero (iter=0) under the assumption that Microsoft has no competitors
in period zero. In transition periods one through ten, Microsoft is
assumed to have (at least potentially) one or more competitors.
This program calculates both RPM and APM equilibria.
The 750 outputted transition (TRPM....txt) files are computed for three speeds of transition (speed=1,2,3),
five cost ratios for short-run cost (cratio=1,2,3,4,5),
five assumptions concerning the portion of long-run costs allocated to fixed costs (port=0,1,2,3,4),
and ten starting points
(z = 0.0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9).
The starting point always has Microsoft divided into two RPM firms,
where the goal functions for the two firms are:

Goal1 = Profit1 - z * Profit2
Goal2 = Profit2 - z * Profit1

An additional feature of the program allows the value of z to change in response to circumstances. If zbump=0.0, then z is fixed,
and does not change in response to circumstances. If zbump > 0, then z changes in response to circumstances. In the program,
z responds to the circumstance that one of the RPM firms
is not producing, because it is achieving negative absolute profit.
In this circumstance, the program automatically "bumps down" the value
of z for both RPM firms by the amount of zbump. For example,
if z=0.7 and zbump=0.4, then if one or both RPM firms would shut down,
then the value of z is automatically bumped down to z=0.3.
In many circumstances, this allows both RPM firms to continue producing.

Program MS6Summ.bas:
This program computes and summarizes the data produced by prior
programs, including both "MS4TranA.bas" and "MS5TranR.bas".
The program produces data summarized for particular scenarios
in files marked "AGGC....txt", "AGGR....txt", and "YEAR....txt".
The "AGGC....txt" files (which are most user friendly) summarize all past and future data, appropriately discounted, into a single set of figures which may be compared across remedy proposals.
The "AGGR....txt" files categorize the aggregate data into

past and future amounts of consumer surplus, profits, and total surplus for each remedy proposal, and how these amounts compare with the same amounts along the lawful path. The "YEAR....txt" files (which are least user friendly) output the calculated amounts, by year, for each remedy proposal and the lawful path.

Attachment L.

```
'BASIC Program "MS1File.bas".

'Program Number 1 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS1File.bas", generates files
'needed by the subsequent computer programs
'for the Microsoft antitrust remedy simulations.
'This program generates the "COSTLIST.txt" file,
'which details the assumed cost levels for each scenario.
'For 3 firms and 5 levels of cost, 35 cost scenarios are
generated.
'   This program also generates the "Ordering.txt"
'and "OrderRPM.txt" files.  These files generate the
'permutations by which the ranking of firms can be reordered.
'For 3 firms, there are 6 permutations.
'The file "OrderRPM.txt" allows the "MS3ProbR.bas" program to
track
'the rankings of two Microsoft successor firms simultaneously.

DEFDBL A-Z
DIM broadscen(1023), class(5), cost(5)
DIM weight(50), newclass1(50), newclass2(50), newclass3(50)
DIM newclass4(50), newclass5(50)
DIM c1(50), c2(50), c3(50), c4(50), c5(50)
DIM pv(50, 3), finprob(50)
DIM new(5), ORDER(6, 3), ORDERRPM(6, 15)
timex = TIMER
CLS

GOSUB GENERATE:
GOSUB COLLAPSE:
GOSUB COSTIT:
GOSUB PVASSIGN:
GOSUB FINALPROB:
GOSUB PRINTCOST:
GOSUB ORDER:
GOSUB PRINTORDER:
GOSUB PRINTORDERRPM:
```

```
PRINT TIMER - timex
END


GENERATE:
'Submodule to generate possible scenarios.
FOR scennum = 0 TO 215
   broadscen(scennum) = 0
NEXT scennum
FOR firm1 = 1 TO 5
FOR firm2 = 1 TO 5
FOR firm3 = 1 TO 5
   GOSUB CLASSIFY:
NEXT firm3
NEXT firm2
NEXT firm1
RETURN
'*****END of Generate Submodule*****


CLASSIFY:
'Submodule of Generate submodule
'   to classify the generated scenarios.
class(1) = 0
class(2) = 0
class(3) = 0
class(4) = 0
class(5) = 0
class(firm1) = class(firm1) + 1
class(firm2) = class(firm2) + 1
class(firm3) = class(firm3) + 1
scennum = 256 * class(1) + 64 * class(2) + 16 * class(3) + 4 *
class(4) + class(5)
broadscen(scennum) = broadscen(scennum) + 1
RETURN
'*****END of Classify Submodule*****


COLLAPSE:
'Submodule to collapse the number of scenarios
'   to a more manageable number.
newnum = 0
FOR class1 = 0 TO 3
FOR class2 = 0 TO 3
```

```
FOR class3 = 0 TO 3
FOR class4 = 0 TO 3
FOR class5 = 0 TO 3
   scennum = 256 * class1 + 64 * class2 + 16 * class3 + 4 *
class4 + class5
   broadnum = broadscen(scennum)
   IF broadnum > 0 THEN
      newnum = newnum + 1
      weight(newnum) = broadnum
      newclass1(newnum) = class1
      newclass2(newnum) = class2
      newclass3(newnum) = class3
      newclass4(newnum) = class4
      newclass5(newnum) = class5
   END IF
NEXT class5
NEXT class4
NEXT class3
NEXT class2
NEXT class1
newtot = newnum
RETURN
'*****END of Collapse Submodule*****


COSTIT:
'Submodule to assign cost levels to firms,
'   with lowest-cost firms ordered first.
FOR scen = 1 TO newtot
   n1 = newclass1(scen)
   n2 = newclass2(scen) + n1
   n3 = newclass3(scen) + n2
   n4 = newclass4(scen) + n3
   FOR n = 1 TO n1
      cost(n) = 1
   NEXT n
   FOR n = n1 + 1 TO n2
      cost(n) = 2
   NEXT n
   FOR n = n2 + 1 TO n3
      cost(n) = 3
   NEXT n
   FOR n = n3 + 1 TO n4
      cost(n) = 4
```

```
   NEXT n
   FOR n = n4 + 1 TO 3
      cost(n) = 5
   NEXT n
   c1(scen) = cost(1)
   c2(scen) = cost(2)
   c3(scen) = cost(3)
NEXT scen
RETURN
'*****END of Costit Submodule*****


PVASSIGN:
'Submodule to assign point values for firm cost levels,
'   with lowest-cost firms ordered first.
'   The point values are 60 times the cost level,
'   with some adjustment in point values, when
'   two or more firms share the same cost level.
FOR scen = 1 TO newtot
   pv(scen, 1) = c1(scen) * 60
   pv(scen, 2) = c2(scen) * 60
   pv(scen, 3) = c3(scen) * 60
NEXT scen
FOR scen = 1 TO newtot
'   n1 = newclass1(scen)
'   n2 = newclass2(scen) + n1
'   n3 = newclass3(scen) + n2
'   n4 = newclass4(scen) + n3
'Assign point values to level one costs.
   ns = 0
   nc = newclass1(scen)
   IF nc = 2 THEN
      pv(scen, ns + 1) = pv(scen, ns + 1) - 10
      pv(scen, ns + 2) = pv(scen, ns + 2) + 10
      END IF
   IF nc = 3 THEN
      pv(scen, ns + 1) = pv(scen, ns + 1) - 15
      pv(scen, ns + 3) = pv(scen, ns + 3) + 15
      END IF
'Assign point values to level two costs.
   ns = ns + nc
   nc = newclass2(scen)
   IF nc = 2 THEN
      pv(scen, ns + 1) = pv(scen, ns + 1) - 10
```

```
        pv(scen, ns + 2) = pv(scen, ns + 2) + 10
        END IF
    IF nc = 3 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 15
        pv(scen, ns + 3) = pv(scen, ns + 3) + 15
        END IF
'Assign point values to level three costs.
    ns = ns + nc
    nc = newclass3(scen)
    IF nc = 2 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 10
        pv(scen, ns + 2) = pv(scen, ns + 2) + 10
        END IF
    IF nc = 3 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 15
        pv(scen, ns + 3) = pv(scen, ns + 3) + 15
        END IF
'Assign point values to level four costs.
    ns = ns + nc
    nc = newclass4(scen)
    IF nc = 2 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 10
        pv(scen, ns + 2) = pv(scen, ns + 2) + 10
        END IF
    IF nc = 3 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 15
        pv(scen, ns + 3) = pv(scen, ns + 3) + 15
        END IF
'Assign point values to level five costs.
    ns = ns + nc
    nc = newclass5(scen)
    IF nc = 2 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 10
        pv(scen, ns + 2) = pv(scen, ns + 2) + 10
        END IF
    IF nc = 3 THEN
        pv(scen, ns + 1) = pv(scen, ns + 1) - 15
        pv(scen, ns + 3) = pv(scen, ns + 3) + 15
        END IF
NEXT scen
RETURN
'*****END of PVassign Submodule*****
```

```
FINALPROB:
'This submodule computes the final probability
'   for each scenario--the probability toward which
'   each scenario tends to converge over the long run.
'cost(s,f) = short-run marginal cost of firm f in scenario s.
'finprob(s) = final probability assumed for scenario s.
'weight(s) = number of permutations of scenario s.
'finprob is computed as weight(s) * assumed probabilities
'   for each cost level:
'   Prob(cost level one) = 10% (low cost)
'   Prob(cost level two) = 15% (low-middle cost)
'   Prob(cost level three) = 20% (middle cost)
'   Prob(cost level four) = 25% (middle-high cost)
'   Prob(cost level five) = 30% (high cost)
FOR scen = 1 TO newtot
   fprob = weight(scen)
   L1 = newclass1(scen)
   L2 = newclass2(scen)
   L3 = newclass3(scen)
   L4 = newclass4(scen)
   L5 = newclass5(scen)
     IF L1 > 0 THEN fprob = fprob * .1#
     IF L1 > 1 THEN fprob = fprob * .1#
     IF L1 > 2 THEN fprob = fprob * .1#
     IF L2 > 0 THEN fprob = fprob * .15#
     IF L2 > 1 THEN fprob = fprob * .15#
     IF L2 > 2 THEN fprob = fprob * .15#
     IF L3 > 0 THEN fprob = fprob * .2#
     IF L3 > 1 THEN fprob = fprob * .2#
     IF L3 > 2 THEN fprob = fprob * .2#
     IF L4 > 0 THEN fprob = fprob * .25#
     IF L4 > 1 THEN fprob = fprob * .25#
     IF L4 > 2 THEN fprob = fprob * .25#
     IF L5 > 0 THEN fprob = fprob * .3#
     IF L5 > 1 THEN fprob = fprob * .3#
     IF L5 > 2 THEN fprob = fprob * .3#
   finprob(scen) = fprob
NEXT scen
RETURN
'***** END OF FinalProb SUBMODULE *****


PRINTCOST:
'Submodule to print out the collapsed scenarios
```

```
'    and the ordered cost assignments
'    as part of file "CostList.txt".
cost$ = "c:\basic\ms_sim\costlist.txt" 'Output cost list
OPEN cost$ FOR OUTPUT AS #1
PRINT #1, "Scen"; " L1 L2 L3 L4 L5"; "  Wgt"; " Fin-Prob";
PRINT #1, "   C1 C2 C3"; "   PV1 PV2 PV3"
FOR scennum = 1 TO newtot
   PRINT #1, USING "##"; scennum;
   PRINT #1, "  ";
   PRINT #1, USING "###"; newclass1(scennum);
   PRINT #1, USING "###"; newclass2(scennum);
   PRINT #1, USING "###"; newclass3(scennum);
   PRINT #1, USING "###"; newclass4(scennum);
   PRINT #1, USING "###"; newclass5(scennum);
   PRINT #1, USING "#####"; weight(scennum);
   PRINT #1, USING "###.######"; finprob(scennum);
   PRINT #1, " ";
   PRINT #1, USING "###"; c1(scennum);
   PRINT #1, USING "###"; c2(scennum);
   PRINT #1, USING "###"; c3(scennum);
   PRINT #1, "  ";
   PRINT #1, USING "####"; pv(scennum, 1);
   PRINT #1, USING "####"; pv(scennum, 2);
   PRINT #1, USING "####"; pv(scennum, 3);
   PRINT #1,
NEXT scennum
CLOSE #1
RETURN
'*****END of PrintCost Submodule*****


ORDER:
'Submodule to compute all possible orderings
'   of three firms (six permutations total).
ordernum = 0
FOR o3 = 5 TO 1 STEP -1
FOR o2 = 5 TO 1 STEP -1
FOR o1 = 5 TO 1 STEP -1
   GOSUB TESTORDER:
NEXT o1
NEXT o2
NEXT o3
ordertot = ordernum
RETURN
```

```
'*****END of Order Submodule*****


TESTORDER:
'Submodule of Order submodule to test
'   whether proposed ordering is acceptable.
IF o1 + o2 + o3 <> 6 THEN RETURN
IF o1 * o2 * o3 <> 6 THEN RETURN
ordernum = ordernum + 1
ORDER(ordernum, 1) = o1
ORDER(ordernum, 2) = o2
ORDER(ordernum, 3) = o3
GOSUB ORDERRPM:
RETURN
'*****END of Order Submodule*****


ORDERRPM:
'Submodule to provide ordering information
'   to track location of two MS firms among five firms,
'   for purpose of determining costs of such
'   two firms for calculating RPM remedy.
'   There are six basic permutations of three firms,
'   among which the rankings of two firms must be
'   tracked simultaneously.
new(0) = 0
FOR old = 1 TO 3
   new(old) = ORDER(ordernum, old)
NEXT old
FOR old1 = 0 TO 3
FOR old2 = 0 TO 3
   oldnum = old1 * 4 + old2
   new1 = new(old1)
   new2 = new(old2)
   newnum = new1 * 4 + new2
   ORDERRPM(ordernum, oldnum) = newnum
NEXT old2
NEXT old1
RETURN
'*****END of OrderRPM Submodule*****


PRINTORDER:
'Submodule to print out the 6 permutations
```

```
'    in which 3 firms can be ordered.
'    Printing is to the file "Ordering.txt".
ORDER$ = "c:\basic\ms_sim\ordering.txt" 'Output ordering list
OPEN ORDER$ FOR OUTPUT AS #1
PRINT #1, "Onum"; " o1 o2 o3"
FOR ordernum = 1 TO ordertot
   PRINT #1, USING "###"; ordernum;
   PRINT #1, " ";
   PRINT #1, USING "###"; ORDER(ordernum, 1);
   PRINT #1, USING "###"; ORDER(ordernum, 2);
   PRINT #1, USING "###"; ORDER(ordernum, 3);
   PRINT #1,
NEXT ordernum
CLOSE #1
RETURN
'*****END of PrintOrder Submodule*****


PRINTORDERRPM:
'Submodule to print out the 6 permutations
'    in which 3 firms can be ordered,
'    with further information to track two firms
'    simultaneously, for further use in later
'    programs to calculate the effects of RPM firms.
'    Printing is to the file "OrderRPM.txt".
ORDERRPM$ = "c:\basic\ms_sim\orderrpm.txt" 'Output RPM ordering
list
OPEN ORDERRPM$ FOR OUTPUT AS #1
PRINT #1, "Onum"; " o00 o01 o02 o03";
PRINT #1, " o10 o11 o12 o13";
PRINT #1, " o20 o21 o22 o23";
PRINT #1, " o30 o31 o32 o33";
PRINT #1,
FOR ordernum = 1 TO ordertot
   PRINT #1, USING "###"; ordernum;
   PRINT #1, " ";
FOR oldnum = 0 TO 15
   PRINT #1, USING "####"; ORDERRPM(ordernum, oldnum);
NEXT oldnum
PRINT #1,
NEXT ordernum
CLOSE #1
RETURN
'*****END of PrintOrderRPM Submodule*****
```

```
'**********END OF Program "MS1File.bas".**********
```

Attachment M.

```
'BASIC Program "MS2ProbA.bas".

'Program Number 2 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS2ProbA.bas", computes the probabilites
'associated with each scenario, as the industry transitions
'from a particular starting point, and gradually converges
'towards a long-run stochastic equilibrium.
'This program assigns probabilities for equilibria consisting
'only of Absolute Profit Maximizing ("APM") firms.
'The starting point varies by the number of
'Microsoft firms (msfirms) in period zero:
'     If msfirms=1, Microsoft starts as a monopoly.
'     If msfirms=2, Microsoft is split into two firms.
'     If msfirms=3, Microsoft is split into three firms.
'The program uses three different speeds (speed=1,2,3) for the
transition.
'Probability files are outputted for each starting point
(msfirms=1,2,3),
'and for each transition speed (speed=1,2,3).

'    The parameters controlling the transition speed
' (pvmax in submodule InitProb10) are supplied by the user.
' The program reads in 35 possible cost structures
' for the industry, each with 3 firms.
' The program assigns probabilities for each scenario,
' and for whether a Microsoft firm (either Microsoft or
' a successor to Microsoft after divestiture) is ranked
' as firm 1, 2, or 3, or is firm 0 (with zero market share).

DEFDBL A-Z
DIM pvtot0(35, 3), pvtot1(35, 3), pvtot2(35, 3)
DIM pvtot3(35, 3)
DIM prob2(35, 3)
DIM diff(3, 3)
DIM finprob(35)
```

```
'CONTROL MODULE
CLS
timex = TIMER
'This section calls the main module 3 times.
'This control module chooses speed for cost shifts:
   'speed = 1 'Slow speed for cost shifts.
   'speed = 2 'Moderate speed for cost shifts.
   'speed = 3 'High speed for cost shifts.
FOR speed = 1 TO 3
   GOSUB MAINMODULE:
NEXT speed
PRINT TIMER - timex
END


MAINMODULE:
GOSUB FILENAMES: 'Assign file names to input/output files.

PRINT "Computing transition weights (deviation):"
GOSUB INITIALIZE0: 'Initialize transition weights.
endcomp = 0
FOR iter = 1 TO 100
   GOSUB TRANSCOMP: 'Iterate transition weights.
   IF endcomp = 1 THEN 99
NEXT iter
99 GOSUB PRINTPROBT: 'Print last computed transition weights.
CLOSE #2

PRINT "Computing transitions from MS=1 APM firm:"
msfirms = 1
iter = 0
GOSUB INITIALIZE1: 'Microsoft starts as monopoly.
iter = 1
GOSUB TRANSIT0:
GOSUB PRINTPROB:
FOR iter = 2 TO 10
   GOSUB TRANSFERPROB:
   GOSUB TRANSIT1:
   GOSUB PRINTPROB:
NEXT iter
CLOSE #2

PRINT "Computing transitions from MS=2 APM firms:"
msfirms = 2
```

```
iter = 0
GOSUB INITIALIZE2: 'Microsoft split into 2 firms.
iter = 1
GOSUB TRANSIT0:
GOSUB PRINTPROB:
FOR iter = 2 TO 10
   GOSUB TRANSFERPROB:
   GOSUB TRANSIT1:
   GOSUB PRINTPROB:
NEXT iter
CLOSE #2

PRINT "Computing transitions from MS=3 APM firms:"
msfirms = 3
iter = 0
GOSUB INITIALIZE3: 'Microsoft split into 3 firms.
iter = 1
GOSUB TRANSIT0:
GOSUB PRINTPROB:
FOR iter = 2 TO 10
   GOSUB TRANSFERPROB:
   GOSUB TRANSIT1:
   GOSUB PRINTPROB:
NEXT iter
CLOSE #2

CLOSE
RETURN
'***** END OF MAIN MODULE *****


FILENAMES:
cost$ = "c:\basic\ms_sim\costlist.txt" 'Input scenario costs
order$ = "c:\basic\ms_sim\ordering.txt" 'Input firm re-orderings
prob0$ = "c:\basic\ms_sim\out\prob00.txt" 'Output iwgt
convergence
prob1$ = "c:\basic\ms_sim\out\prob10.txt" 'Output 1-firm APM
transition probs
prob2$ = "c:\basic\ms_sim\out\prob20.txt" 'Output 2-firm APM
transition probs
prob3$ = "c:\basic\ms_sim\out\prob30.txt" 'Output 3-firm APM
transition probs
IF speed = 1 THEN sp$ = "1"
IF speed = 2 THEN sp$ = "2"
```

```
IF speed = 3 THEN sp$ = "3"
replace$ = sp$
MID$(prob0$, 26, 1) = replace$
MID$(prob1$, 26, 1) = replace$
MID$(prob2$, 26, 1) = replace$
MID$(prob3$, 26, 1) = replace$
RETURN
'***** END OF FileNames SUBMODULE *****


INITIALIZE0:
'Submodule to find transition weights.
GOSUB SCENREAD: 'Read in scenario list.
GOSUB ORDERREAD: 'Read in ordering list.
GOSUB INITPROB10:
iter = 0
GOSUB TRANSCOMP: 'Computes transition weights to scenarios.
OPEN prob0$ FOR OUTPUT AS #2
RETURN
'***** END OF Initialize0 SUBMODULE *****


INITPROB10:
'This submodule sets the prob1 variables to zero,
'   and then sets initial values for non-zero prob1.
DIM prob1(35, 3), cost(35, 3), herf(35)
DIM iwgt(35), iwgt0(35)
'****User supplies pvmax, which controls transition speed.****
IF speed = 1 THEN pvmax = 1.5 'Slow speed for cost shifts.
IF speed = 2 THEN pvmax = 2.5 'Moderate speed for cost shifts.
IF speed = 3 THEN pvmax = 4.5 'High speed for cost shifts.
FOR scen1 = 0 TO 35
FOR firm1 = 0 TO 3
   prob1(scen1, firm1) = 0
NEXT firm1
NEXT scen1
'This section sets initial values  to reflect
'   distribution of final probabilites.
FOR scen1 = 1 TO 35
   prob1(scen1, 0) = finprob(scen1)
   iwgt(scen1) = finprob(scen1)
NEXT scen1
RETURN
'***** END OF InitProb10 SUBMODULE *****
```

```
TRANSCOMP:
'Submodule to compute transition weights.
'   Transitions are from any scenario (scen1)
'   to any same or different scenario (scen2).
'   Goal is to find transition weights (iwgt) such that
'   if prob1 is set at final probabilities,
'   then computed prob2 also reflects final probabilities.
'   The transition weights are iteratively adjusted,
'   until there is convergence.  Such convergence
'   means that the long-run distribution of scenarios
'   will reflect the final probabilities selected.
GOSUB INITPROB2: 'Initialize prob2 variables.
PRINT speed; iter; "*";
FOR scen1 = 1 TO 35
      PRINT ".";
   iprob0 = prob1(scen1, 0)
   iprob1 = prob1(scen1, 1)
   iprob2 = prob1(scen1, 2)
   iprob3 = prob1(scen1, 3)
FOR scen2 = 1 TO 35
   GOSUB PVADD:
NEXT scen2
   GOSUB PVADJUST:
NEXT scen1
devtot = 0
itotal = 0
FOR scen = 1 TO 35
   iwgt0(scen) = iwgt(scen)
   iwgt(scen) = iwgt(scen) * prob1(scen, 0) / prob2(scen, 0)
   itotal = itotal + iwgt(scen)
   dev = prob1(scen, 0) - prob2(scen, 0)
   devtot = devtot + ABS(dev)
NEXT scen
FOR scen = 1 TO 35
   iwgt(scen) = iwgt(scen) / itotal
NEXT scen
IF devtot < .000001 THEN endcomp = 1
PRINT USING "#.########"; devtot
RETURN
'This submodule finds transition weights (iwgt) to each scenario,
'   that cause convergence to the assumed final probabilities
(FinProb)
'   attached to the various possible market outcomes
```

```
'    in a very long-run stochastic equilibrium.
'***** END OF TransComp SUBMODULE *****


INITIALIZE1:
'Submodule to initialize Microsoft starts as monopoly.
GOSUB INITPROB11:
OPEN prob1$ FOR OUTPUT AS #2
GOSUB PRINTPROB0:
RETURN
'***** END OF Initialize1 SUBMODULE *****


INITPROB11:
'This submodule of Initialize1 sets the prob1 variables to zero,
'    and then sets initial values for non-zero prob1.
FOR scen1 = 0 TO 35
FOR firm1 = 0 TO 3
   prob1(scen1, firm1) = 0
NEXT firm1
NEXT scen1
'This section sets initial scenario to
'    Microsoft is a monopoly,
'    Scenario 5, Cost levels 3(MS), 5(comp), 5(comp).
scen0 = 5
prob1(0, 1) = 1
FOR firm = 1 TO 3
   cost(0, firm) = cost(scen0, firm)
NEXT firm
RETURN
'***** END OF InitProb11 SUBMODULE *****


INITIALIZE2:
'Submodule to initialize splitting Microsoft into two firms.
GOSUB INITPROB12:
OPEN prob2$ FOR OUTPUT AS #2
GOSUB PRINTPROB0:
RETURN
'***** END OF Initialize2 SUBMODULE *****


INITPROB12:
'This submodule sets the prob1 variables to zero,
```

```
'   and then sets initial values for non-zero prob1.
FOR scen1 = 0 TO 35
FOR firm1 = 0 TO 3
   prob1(scen1, firm1) = 0
NEXT firm1
NEXT scen1
'This section sets initial scenario to
'   Microsoft is split into two equal-sized firms,
'   Scenario 6, Cost levels 3(MS-1), 4(MS-2), 5(comp).
scen0 = 6
prob1(0, 1) = 1# / 2#
prob1(0, 2) = 1# / 2#
FOR firm = 1 TO 3
   cost(0, firm) = cost(scen0, firm)
NEXT firm
RETURN
'***** END OF InitProb12 SUBMODULE *****


INITIALIZE3:
'Submodule to initialize splitting Microsoft into three firms.
GOSUB INITPROB13:
OPEN prob3$ FOR OUTPUT AS #2
GOSUB PRINTPROB0:
RETURN
'***** END OF Initialize3 SUBMODULE *****


INITPROB13:
'This submodule sets the prob1 variables to zero,
'   and then sets initial values for non-zero prob1.
FOR scen1 = 0 TO 35
FOR firm1 = 0 TO 3
   prob1(scen1, firm1) = 0
NEXT firm1
NEXT scen1
'This section sets initial scenario to
'   Microsoft is split into three equal-sized firms,
'   Scenario 7, Cost levels 3(MS-1), 4(MS-2), 4(MS-3).
scen0 = 7
prob1(0, 1) = 1# / 3#
prob1(0, 2) = 1# / 3#
prob1(0, 3) = 1# / 3#
FOR firm = 1 TO 3
```

```
   cost(0, firm) = cost(scen0, firm)
NEXT firm
RETURN
'***** END OF InitProb13 SUBMODULE *****


SCENREAD:
'This submodule reads in the scenario costs list.
OPEN cost$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'cost(s,f) = short-run marginal cost of firm f in scenario s.
'finprob(s) = final probability assumed for scenario s.
'wgt(scen) = number of permutations of scenario s.
FOR scen = 1 TO 35
   INPUT #1, scen2, L1, L2, L3, L4, L5, wgt, finprob(scen)
     IF scen <> scen2 THEN PRINT "Scenario mismatch", scen, scen2
   INPUT #1, c1, c2, c3
   FOR firm = 1 TO 3
     INPUT #1, ctemp
     cost(scen, firm) = ctemp / 60#
   NEXT firm
NEXT scen
CLOSE #1
RETURN
'***** END OF ScenRead SUBMODULE *****


ORDERREAD:
'This Submodule reads in the ordering list,
'   which is a list of 6 permutations by which firms 1-3
'   may become firms 1-3 in the same or a different order.
OPEN order$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'ordnum = number of ordering.
'order(o,f) = ordering number o for firm f,
'   the firm number which firm f becomes in ordering o.
DIM order(6, 3)
FOR ordnum = 1 TO 6
   INPUT #1, ordnum2
     IF ordnum <> ordnum2 THEN PRINT "Order Number mismatch",
ordnum, ordnum2
   FOR firm = 1 TO 3
     INPUT #1, order(ordnum, firm)
   NEXT firm
```

```
NEXT ordnum
CLOSE #1
RETURN
'***** END OF OrderRead SUBMODULE *****


TRANSIT0:
'This submodule controls the initial transitions.
'   Transitions are from scenario zero (scen1)
'   to the other possible scenarios (scen2).
GOSUB INITPROB2: 'Initialize prob2 variables.
PRINT speed; iter; "*";
scen1 = 0
      PRINT ".";
   iprob0 = prob1(scen1, 0)
   iprob1 = prob1(scen1, 1)
   iprob2 = prob1(scen1, 2)
   iprob3 = prob1(scen1, 3)
FOR scen2 = 1 TO 35
   GOSUB PVADD:
NEXT scen2
   GOSUB PVADJUST:
GOSUB MSEXITS:
PRINT
RETURN
'***** END OF Transit0 SUBMODULE *****


TRANSIT1:
'This submodule controls the subsequent transitions.
'   Transitions are from any scenario (scen1)
'   to any same or different scenario (scen2).
GOSUB INITPROB2: 'Initialize prob2 variables.
PRINT speed; iter; "*";
FOR scen1 = 1 TO 35
      PRINT ".";
   iprob0 = prob1(scen1, 0)
   iprob1 = prob1(scen1, 1)
   iprob2 = prob1(scen1, 2)
   iprob3 = prob1(scen1, 3)
IF iprob0 + iprob1 + iprob2 + iprob3 = 0 THEN 10
FOR scen2 = 1 TO 35
   GOSUB PVADD:
NEXT scen2
```

```
   GOSUB PVADJUST:
10 NEXT scen1
GOSUB MSEXITS:
PRINT
RETURN
'***** END OF Transit1 SUBMODULE *****


INITPROB2:
'This submodule of TRANSIT sets the prob2 variables to zero.
FOR scen2 = 0 TO 35
FOR firm2 = 0 TO 3
   prob2(scen2, firm2) = 0
NEXT firm2
NEXT scen2
RETURN
'***** END OF InitProb2 SUBMODULE *****


PVADD:
'This submodule adds up point values (pv) for transition
'   from a single scenario (scen1)
'   to a single scenario (scen2).
'pvtot0(s,f) = point value for probability of transition
'   from scenario with Microsoft=firm 0 (zero market share),
'   to scenario s and to Microsoft=firm f.
'pvtot1(s,f) = same, but from Microsoft=firm 1.
'pvtot2(s,f) = same, but from Microsoft=firm 2.
'pvtot3(s,f) = same, but from Microsoft=firm 3.
FOR firm1 = 1 TO 3
  FOR firm2 = 1 TO 3
    diff(firm1, firm2) = ABS(cost(scen1, firm1) - cost(scen2,
firm2))
  NEXT firm2
NEXT firm1

FOR firm2 = 0 TO 3
  pvtot0(scen2, firm2) = 0
  pvtot1(scen2, firm2) = 0
  pvtot2(scen2, firm2) = 0
  pvtot3(scen2, firm2) = 0
NEXT firm2
sprob = iwgt(scen2)
sprob3 = sprob / 6#
```

```
GOSUB PVADD3:
RETURN
'***** END OF PVadd SUBMODULE *****


PVADD3:
'This submodule of PVADD adds up point values for transition
'   from a single scenario (scen1)
'   to a single scenario (scen2),
'   where scen1 and scen2 both have 3 firms.
FOR o = 1 TO 6
  o1 = order(o, 1)
  o2 = order(o, 2)
  o3 = order(o, 3)
  pv = 1
  pvtemp = pvmax - diff(1, o1)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp
  pvtemp = pvmax - diff(2, o2)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp
  pvtemp = pvmax - diff(3, o3)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp
  pvtot0(scen2, 0) = pvtot0(scen2, 0) + pv * iprob0 * sprob3
  pvtot1(scen2, o1) = pvtot1(scen2, o1) + pv * iprob1 * sprob3
  pvtot2(scen2, o2) = pvtot2(scen2, o2) + pv * iprob2 * sprob3
  pvtot3(scen2, o3) = pvtot3(scen2, o3) + pv * iprob3 * sprob3
NEXT o
RETURN
'***** END OF PVadd3 SUBMODULE *****


PVADJUST:
'This module adjusts computed point values (pv)
'   to reflect true probability measures (prob2).
pvtotal0 = 0
pvtotal1 = 0
pvtotal2 = 0
pvtotal3 = 0
FOR scen = 1 TO 35
  FOR firm2 = 0 TO 3
    pvtotal0 = pvtotal0 + pvtot0(scen, firm2)
    pvtotal1 = pvtotal1 + pvtot1(scen, firm2)
```

```
    pvtotal2 = pvtotal2 + pvtot2(scen, firm2)
    pvtotal3 = pvtotal3 + pvtot3(scen, firm2)
  NEXT firm2
NEXT scen

ratio0 = 0
ratio1 = 0
ratio2 = 0
ratio3 = 0
20 IF pvtotal0 = 0 THEN 21
ratio0 = prob1(scen1, 0) / pvtotal0
21 IF pvtotal1 = 0 THEN 22
ratio1 = prob1(scen1, 1) / pvtotal1
22 IF pvtotal2 = 0 THEN 23
ratio2 = prob1(scen1, 2) / pvtotal2
23 IF pvtotal3 = 0 THEN 24
ratio3 = prob1(scen1, 3) / pvtotal3
24 REM

FOR scen = 1 TO 35
  FOR firm2 = 0 TO 3
    pvtemp = pvtot0(scen, firm2) * ratio0
    pvtemp = pvtemp + pvtot1(scen, firm2) * ratio1
    pvtemp = pvtemp + pvtot2(scen, firm2) * ratio2
    pvtemp = pvtemp + pvtot3(scen, firm2) * ratio3
    prob2(scen, firm2) = prob2(scen, firm2) + pvtemp
  NEXT firm2
NEXT scen

RETURN
'***** END OF PVadjust SUBMODULE *****


MSEXITS:
'This submodule determines which prob2(s,f) and cost(s,f)
'   numbers imply zero market share for Microsoft.
'   Where this occurs for f>0 (MS still in market),
'   the probability values are transferred
'   to f=0 (Microsoft not in market).
'   The criterion for exit is that the firm in question
'   has very high short-run costs.
FOR scen = 1 TO 35
FOR firm = 1 TO 3
   IF cost(scen, firm) > 4.999 THEN
```

```
      prob2(scen, 0) = prob2(scen, 0) + prob2(scen, firm)
      prob2(scen, firm) = 0
      END IF
NEXT firm
NEXT scen
RETURN
'***** END OF MSexits SUBMODULE *****


PRINTPROBT:
'This submodule prints the last iteration (presumed convergence)
'   computed for the the transition weights for each scenario.
PRINT #2, " Iter "; "Scen ";
PRINT #2, "Init-weight(0) "; "Prob1(target)  "; "Prob2(result)
"; "Init-weight(1) "
FOR scen = 1 TO 35
   PRINT #2, USING "#####"; iter; scen;
   PRINT #2, USING "##.############"; iwgt0(scen); prob1(scen,
0); prob2(scen, 0); iwgt(scen)
NEXT scen
RETURN
'***** END OF PrintProbT SUBMODULE *****


PRINTPROB0:
'This submodule prints the probabilities for scenario zero.
PRINT #2, " Iter "; "Scen ";
PRINT #2, "Prob(firm0)    "; "Prob(firm1)    "; "Prob(firm2)
";
PRINT #2, "Prob(firm3)    "
scen = 0
   PRINT #2, USING "#####"; iter; scen0;
   FOR firm = 0 TO 3
      PRINT #2, USING "##.############"; prob1(scen, firm);
   NEXT firm
   PRINT #2,
RETURN
'***** END OF PrintProb0 SUBMODULE *****


PRINTPROB:
'This submodule prints the probabilities for each subsequent
'   scenario and MS firm number.
FOR scen = 1 TO 35
```

```
   PRINT #2, USING "#####"; iter; scen;
   FOR firm = 0 TO 3
      PRINT #2, USING "##.############"; prob2(scen, firm);
   NEXT firm
   PRINT #2,
NEXT scen
RETURN
'***** END OF PrintProb SUBMODULE *****


TRANSFERPROB:
'This submodule transfers the prob2 values to prob1,
'    so that the next transition iteration can proceed.
FOR scen = 0 TO 35
FOR firm = 0 TO 3
   prob1(scen, firm) = prob2(scen, firm)
NEXT firm
NEXT scen
RETURN
'***** END OF TransferProb SUBMODULE *****

'**********END OF Program "MS2ProbA.bas".**********
```

Attachment N.

```
'BASIC Program "MS3ProbR.bas".

'Program Number 3 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS3ProbR.bas", computes the probabilites
'associated with each scenario, as the industry transitions
'from a particular starting point, and gradually converges
'towards a long-run stochastic equilibrium.
'This program assigns probabilities for equilibria consisting
'of two Relative Profit Maximizing ("RPM") firms, along with
'such Absolute Profit Maximizing "APM" firms as may be involved
'in the transitions.  The equilibria automatically convert to
'APM equilibria if one or both RPM firms exits the industry.
'The program uses three different speeds (speed=1,2,3) for the
transition.
'Probability files are outputted for the one starting point
'(msfirms=2), and each transition speed (speed=1,2,3).

'   This program is similar to "MS2ProbA.bas",
'since it computes probabilites associated with each scenario,
'for a total of 11 transition periods.
'This program differs from "MS2ProbA.bas",
'because it assigns probabilities for equilibria consisting
'of both RPM and APM firms, rather than APM firms only.
'This program is more complex than "MS2ProbA.bas"
'because it must simultaneously track the rankings
'of two Microsoft-successor firms simultaneously.

'   This program calculates transition probabilities
'where Microsoft starts as two firms, and simultaneously
'tracks the outcomes and rankings for both firms.
'   The parameters controlling the transition speed
'(pvmax in submodule InitProb10) are supplied by the user.
'The program reads in 35 possible cost structures
'for the industry, each with 3 firms.
'The program assigns probabilities for each scenario,
'and also tracks whether Microsoft #1 is ranked as
'firm 1, 2, or 3, or is firm 0 (with zero market share).
```

```
'Likewise, the program tracks whether Microsoft #2 is
'ranked as firm 1, 2, or 3, or is firm 0.

DEFDBL A-Z
DIM pvtot(35, 15), prob1r(35, 15), prob2r(35, 15)
DIM diff(3, 3), iwgt(35), cost(35, 3)


'CONTROL MODULE
CLS
timex = TIMER
'This section calls the main module 3 times.
'This control module chooses speed for cost shifts:
   'speed = 1 'Slow speed for cost shifts.
   'speed = 2 'Moderate speed for cost shifts.
   'speed = 3 'High speed for cost shifts.
FOR speed = 1 TO 3
   GOSUB MAINMODULE:
NEXT speed
PRINT TIMER - timex
END


MAINMODULE:
IF speed = 1 THEN pvmax = 1.5 'Slow speed for cost shifts.
IF speed = 2 THEN pvmax = 2.5 'Moderate speed for cost shifts.
IF speed = 3 THEN pvmax = 4.5 'High speed for cost shifts.
GOSUB FILENAMES: 'Assign file names to input/output files.
GOSUB SCENREAD: 'Read in scenario costs.
GOSUB ORDERREAD: 'Read in ordering list.
GOSUB ORDERRPMREAD: 'Read in orderRPM list.
GOSUB READIWGT: 'Read in values for transition weights.

PRINT "Computing transitions from MS=2 RPM firms:"
msfirms = 2
iter = 0
GOSUB INITIALIZER: 'Microsoft split into 2 RPM firms.
iter = 1
GOSUB TRANSIT0R:
GOSUB PRINTPROBR:
FOR iter = 2 TO 10
   GOSUB TRANSFERPROBR:
   GOSUB TRANSIT1R:
   GOSUB PRINTPROBR:
```

```
NEXT iter
CLOSE #2, #3

CLOSE
RETURN
'***** END OF MAIN MODULE *****


FILENAMES:
cost$ = "c:\basic\ms_sim\costlist.txt" 'Input scenario costs
order$ = "c:\basic\ms_sim\ordering.txt" 'Input firm re-orderings
orderrpm$ = "c:\basic\ms_sim\orderrpm.txt" 'Input RPM firm-pair
re-orderings
prob0$ = "c:\basic\ms_sim\out\prob00.txt" 'Input 2 RPM firms I-
weight probs
probr$ = "c:\basic\ms_sim\out\probr0.txt" 'Output 2 RPM firms
transition probs
IF speed = 1 THEN sp$ = "1"
IF speed = 2 THEN sp$ = "2"
IF speed = 3 THEN sp$ = "3"
replace$ = sp$
MID$(prob0$, 26, 1) = replace$
MID$(probr$, 26, 1) = replace$
RETURN
'***** END OF FileNames SUBMODULE *****


READIWGT:
'This submodule reads in the transition weights (iwgt)
'   previously computed by the "MS2ProbA.bas" program.
OPEN prob0$ FOR INPUT AS #1
LINE INPUT #1, temp$
FOR scen = 1 TO 35
   INPUT #1, iter2, scen2, iwgt0, prob1scen, prob2scen,
iwgt(scen)
   IF scen2 <> scen THEN PRINT "Scenario mismatch:"; scen; scen2
NEXT scen
CLOSE #1
RETURN
'***** END OF ReadIwgt SUBMODULE *****


INITIALIZER:
'Submodule to initialize Microsoft split into 2 RPM firms.
```

```
GOSUB INITPROB1R:
OPEN probr$ FOR OUTPUT AS #2
GOSUB PRINTPROB0R:
RETURN
'***** END OF InitializeR SUBMODULE *****


INITPROB1R:
'This submodule sets the prob1r variables to zero,
'   and then sets initial values for non-zero prob1.
FOR scen1 = 0 TO 35
FOR pair1 = 0 TO 15
   prob1r(scen1, pair1) = 0
NEXT pair1
NEXT scen1
'This section sets initial scenario to
'   Microsoft is split into two RPM firms,
'   Scenario 6, Cost levels 3(MS-1), 4(MS-2), 5(comp).
scen0 = 6
firm1 = 1
firm2 = 2
pair = firm1 * 4 + firm2
prob1r(0, pair) = 1
FOR firm = 1 TO 3
   cost(0, firm) = cost(scen0, firm)
NEXT firm
RETURN
'***** END OF InitProb12 SUBMODULE *****


SCENREAD:
'This submodule reads in the scenario costs list.
OPEN cost$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'cost(s,f) = marginal cost of firm f in scenario s.
'finprob = final probability assumed for scenario s.
'wgt = number of permutations of scenario s.
FOR scen = 1 TO 35
   INPUT #1, scen2, L1, L2, L3, L4, L5, wgt, finprob
     IF scen <> scen2 THEN PRINT "Scenario mismatch", scen, scen2
   INPUT #1, c1, c2, c3
   FOR firm = 1 TO 3
     INPUT #1, ctemp
     cost(scen, firm) = ctemp / 60#
```

```
   NEXT firm
NEXT scen
CLOSE #1
RETURN
'***** END OF SCENREAD SUBMODULE *****


ORDERREAD:
'This Submodule reads in the ordering list,
'   which is a list of 6 permutations by which firms 1-3
'   may become firms 1-3 in the same or a different order.
OPEN order$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'ordnum = number of ordering.
'order(o,f) = ordering number o for firm f,
'   the firm number which firm f becomes in ordering o.
DIM order(6, 3)
FOR ordnum = 1 TO 6
   INPUT #1, ordnum2
     IF ordnum <> ordnum2 THEN PRINT "Order Number mismatch",
ordnum, ordnum2
   FOR firm = 1 TO 3
     INPUT #1, order(ordnum, firm)
   NEXT firm
NEXT ordnum
CLOSE #1
RETURN
'***** END OF OrderRead SUBMODULE *****


ORDERRPMREAD:
'This Submodule reads in the orderRPM list,
'   which is a list of 6 permutations by which firms 1-3
'   may become firms 1-3 in the same or a different order.
'The orderRPM list simultaneously tracks the cost rankings
'   of two RPM firms.
OPEN orderrpm$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'ordnum = number of ordering.
'orderrpm(o,f) = ordering number o for pair of firms p,
'   the firm-pair number to which the firm-pair p
'   becomes in ordering o.
'p is firm-pair where p=4*firm1+firm2.
'Firm1 and firm2 take on values (0, 1, 2, 3).
```

```
DIM orderrpm(6, 15)
FOR ordnum = 1 TO 6
   INPUT #1, ordnum2
     IF ordnum <> ordnum2 THEN PRINT "Order Number mismatch",
ordnum, ordnum2
   FOR pair = 0 TO 15
     INPUT #1, orderrpm(ordnum, pair)
   NEXT pair
NEXT ordnum
CLOSE #1
RETURN
'***** END OF OrderRPMread SUBMODULE *****


TRANSIT0R:
'This submodule controls the initial transitions.
'   Transitions are from scenario zero (scen1)
'   to the other possible scenarios (scen2).
GOSUB INITPROB2R: 'Initialize prob2 variables.
PRINT speed; iter; "*";
scen1 = 0
      PRINT ".";
FOR pair1 = 0 TO 15
   iprob = prob1r(scen1, pair1)
   IF iprob = 0 THEN 10
   FOR scen2 = 1 TO 35
      GOSUB PVADDR:
   NEXT scen2
   GOSUB PVADJUSTR:
10 NEXT pair1
GOSUB MSEXITSR:
PRINT
RETURN
'***** END OF Transit0R SUBMODULE *****


TRANSIT1R:
'This submodule controls the subsequent transitions.
'   Transitions are from any scenario (scen1)
'   to any same or different scenario (scen2).
GOSUB INITPROB2R: 'Initialize prob2 variables.
PRINT speed; iter; "*";
FOR scen1 = 1 TO 35
      PRINT ".";
```

```
FOR pair1 = 0 TO 15
   iprob = prob1r(scen1, pair1)
   IF iprob = 0 THEN 11
   FOR scen2 = 1 TO 35
      GOSUB PVADDR:
   NEXT scen2
   GOSUB PVADJUSTR:
11 NEXT pair1
NEXT scen1
GOSUB MSEXITSR:
PRINT
RETURN
'***** END OF Transit1R SUBMODULE *****


INITPROB2R:
'This submodule of TRANSIT sets the prob2r variables to zero.
FOR scen2 = 0 TO 35
FOR pair2 = 0 TO 15
   prob2r(scen2, pair2) = 0
NEXT pair2
NEXT scen2
RETURN
'***** END OF InitProb2R SUBMODULE *****


PVADDR:
'This submodule initializes the variables in preparation
'   for submodule PVADD3R,
'   which adds up point values (pv) for transition
'   from a single scenario (scen1) and firm pair (pair1)
'   to a single scenario (scen2) and multiple pairs (pair2).
'pvtot(s,p) = point value for probability of transition
'   from current scenario and current MS firm pair
'   to scenario s and to MS firm pair p.
FOR firm1 = 1 TO 3
  FOR firm2 = 1 TO 3
    diff(firm1, firm2) = ABS(cost(scen1, firm1) - cost(scen2,
firm2))
  NEXT firm2
NEXT firm1

FOR pair2 = 0 TO 15
  pvtot(scen2, pair2) = 0
```

```
NEXT pair2
sprob = iwgt(scen2)
sprob3 = sprob / 6#
GOSUB PVADD3R:
RETURN
'***** END OF PVaddR SUBMODULE *****


PVADD3R:
'This submodule of PVADDR adds up point values for transition
'   from a single scenario (scen1) and firm pair (pair1)
'   to a single scenario (scen2) and multiple firm pairs (pair2).
FOR o = 1 TO 6
  o1 = order(o, 1)
  o2 = order(o, 2)
  o3 = order(o, 3)
  pv = 1
  pvtemp = pvmax - diff(1, o1)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp
  pvtemp = pvmax - diff(2, o2)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp
  pvtemp = pvmax - diff(3, o3)
  IF pvtemp < 0 THEN pvtemp = 0
  pv = pv * pvtemp

  orpm = orderrpm(o, pair1)
  pvtot(scen2, orpm) = pvtot(scen2, orpm) + pv * iprob * sprob3
NEXT o
RETURN
'***** END OF PVadd3R SUBMODULE *****


PVADJUSTR:
'This module adjusts computed point values (pv)
'   to reflect true probability measures (prob2).
pvtotal = 0
FOR scen = 1 TO 35
  FOR pair2 = 0 TO 15
    pvtotal = pvtotal + pvtot(scen, pair2)
  NEXT pair2
NEXT scen
```

```
ratio = 0
20 IF pvtotal = 0 THEN 21
ratio = prob1r(scen1, pair1) / pvtotal
21 REM

FOR scen = 1 TO 35
  FOR pair2 = 0 TO 15
    probtemp = pvtot(scen, pair2) * ratio
    prob2r(scen, pair2) = prob2r(scen, pair2) + probtemp
  NEXT pair2
NEXT scen

RETURN
'***** END OF PVadjustR SUBMODULE *****


MSEXITSR:
'This submodule determines which prob2r(s,f) and cost(s,f)
'   numbers imply exiting the industry for Microsoft
'   or a Microsoft successor.
'   Where this occurs for firm1>0 (MS #1 still in market)
'   or for firm2>0 (MS #2 still in market),
'   the probability values are transferred respectively
'   to firm1=0 (Microsoft #1 not in market) or
'   to firm2=0 (Microsoft #2 not in market).
'   The criterion for exit is that the firm in question
'   has very high short-run costs.
FOR scen = 1 TO 35
FOR firm1 = 1 TO 3
FOR firm2 = 0 TO 3
   pair = firm1 * 4 + firm2
   IF cost(scen, firm1) > 4.999 THEN
      pair0 = firm2'firm1=0
      prob2r(scen, pair0) = prob2r(scen, pair0) + prob2r(scen,
pair)
      prob2r(scen, pair) = 0
      END IF
NEXT firm2
NEXT firm1
FOR firm1 = 0 TO 3
FOR firm2 = 1 TO 3
   pair = firm1 * 4 + firm2
   IF cost(scen, firm2) > 4.999 THEN
      pair0 = firm1 * 4 'firm2=0
```

```
      prob2r(scen, pair0) = prob2r(scen, pair0) + prob2r(scen,
pair)
      prob2r(scen, pair) = 0
      END IF
NEXT firm2
NEXT firm1
NEXT scen
RETURN
'***** END OF MSexitsR SUBMODULE *****


PRINTPROB0R:
'This submodule prints the probabilities
'   for each firm-pair number for scenario zero.
PRINT #2, " Iter "; "Scen "; "Firm ";
PRINT #2, "Prob(firm0)    "; "Prob(firm1)    "; "Prob(firm2)
";
PRINT #2, "Prob(firm3)    "
scen = 0
FOR firm1 = 0 TO 3
   PRINT #2, USING "#####"; iter; scen0; firm1;
   FOR firm2 = 0 TO 3
      pair = 4 * firm1 + firm2
      PRINT #2, USING "##.############"; prob1r(scen, pair);
   NEXT firm2
   PRINT #2,
NEXT firm1
RETURN
'***** END OF PrintProb0 SUBMODULE *****


PRINTPROBR:
'This submodule prints the probabilities
'   for each MS firm-pair number
'   for each subsequent scenario.
FOR scen = 1 TO 35
FOR firm1 = 0 TO 3
   PRINT #2, USING "#####"; iter; scen; firm1;
   FOR firm2 = 0 TO 3
      pair = 4 * firm1 + firm2
      PRINT #2, USING "##.############"; prob2r(scen, pair);
   NEXT firm2
   PRINT #2,
NEXT firm1
```

```
NEXT scen
RETURN
'***** END OF PrintProb SUBMODULE *****


TRANSFERPROBR:
'This submodule transfers the prob2 values to prob1,
'   so that the next transition iteration can proceed.
FOR scen = 0 TO 35
FOR pair = 0 TO 15
   prob1r(scen, pair) = prob2r(scen, pair)
NEXT pair
NEXT scen
RETURN
'***** END OF TransferProbR SUBMODULE *****

'**********END OF Program "MS3ProbR.bas".**********
```

Attachment O.

```
'BASIC Program "MS4TranA.bas".

'Program Number 4 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS4TranA.bas", uses the probability data
'computed by "MS2ProbA.bas" to compute Consumer Surplus and
'Profits for both Microsoft and Microsoft's competitors.
'In transition period zero (iter=0), Microsoft (and its
'successor firms after divestiture) are assumed to have no
competitors.
'In subsequent transition periods (iter=1 to 10),
'Microsoft has (potentially) one or more competitors.
'This program only calculates Absolute Profit Maximizing ("APM")
equilibria.
'   The program uses the computed probabilities for each
'scenario that was previously outputted by the
'"MS2ProbA.bas" program as various "PROB....txt" files.
'   This program outputs as "TRAN....txt" files the
'computed transition factors for several alternative timepaths
'for the software industry, under several alternative
assumptions.
'These transition factors are computed as a fraction
'of the revenues which Microsoft would earn if it remained
'a monopoly.  The assumptions for the transitions are:
'   Tran1) Strong conduct remedy & Lawful Path:
'Microsoft is not broken up, but competitive conditions
'start in transition period zero.  A companion
'program, "MS6Summ.bas", uses the transition factors
'to compute the lawful path (starting in 1995) and
'a conduct remedy (starting in 2002).
'   Tran2-Tran3) APM Structural remedies:
'Microsoft is broken up into two or three competing APM firms,
'beginning in transition period zero.  The companion program
'uses these transition factors to compute the effects of
'structural remedies starting in 2005.
'   The 225 outputted transition (TRAN....txt) files are computed
'for three speeds of transition (speed=1,2,3),
```

```
'five cost ratios for short-run cost (cratio=1,2,3,4,5),
'five assumptions concerning the portion of long-run costs
'allocated to fixed costs (port=0,1,2,3,4),
'and three starting points (msfirms=1,2,3).

DEFDBL A-Z
DIM prob1(35, 3), herf(35), mshare(35, 3), pnum(35)
DIM quant(35, 3), cost(35, 3), pv(35, 3), price(35)
DIM pims(35, 3), picomp(35, 3)


'CONTROL MODULE
CLS
timex = TIMER
GOSUB SCENREAD:
'This section calls the main module 225 times.
'This control module chooses market tendency:
   'cratio=1 'Ratio for low/high short-run cost is 0.2500
(1/4.0).
   'cratio=2 'Ratio for low/high short-run cost is 0.3333
(1/3.0).
   'cratio=3 'Ratio for low/high short-run cost is 0.4000
(1/2.5).
   'cratio=4 'Ratio for low/high short-run cost is 0.5000
(1/2.0).
   'cratio=5 'Ratio for low/high short-run cost is 0.6667
(1/1.5).
'This control module chooses speed for market share shifts:
   'speed = 1 'Slow speed for market share shifts.
   'speed = 2 'Moderate speed for market share shifts.
   'speed = 3 'High speed for market share shifts.
'This control module chooses # of msfirms at iteration zero.
   'msfirms = 1 'Microsoft starts as a monopoly.
   'msfirms = 2 'Microsoft split into 2 APM firms.
   'msfirms = 3 'Microsoft split into 3 APM firms.
'This control module chooses proportion of long-run cost
'   which is assumed to be a fixed cost.
   'port = 0 'Fixed cost is 0% of long-run cost.
   'port = 1 'Fixed cost is 25% of long-run cost.
   'port = 2 'Fixed cost is 50% of long-run cost.
   'port = 3 'Fixed cost is 75% of long-run cost.
   'port = 4 'Fixed cost is 100% of long-run cost.
```

```
FOR cratio = 1 TO 5
   FOR speed = 1 TO 3
     FOR port = 0 TO 4
       FOR msfirms = 1 TO 3
         GOSUB MAINMODULE:
       NEXT msfirms
     NEXT port
   NEXT speed
NEXT cratio
PRINT TIMER - timex
END


MAINMODULE:
GOSUB FILENAMES: 'Assign file names to input/output files.
GOSUB INITIALIZE:
FOR iter = 1 TO 10
   GOSUB PROBREAD:
   GOSUB PRINTTRAN:
NEXT iter
CLOSE
RETURN
'***** END OF MAIN MODULE *****


FILENAMES:
prob$ = "c:\basic\ms_sim\out\prob00.txt" 'Input transition
probabilities
tran$ = "c:\basic\ms_sim\out\tran0000.txt" 'Output transition
factors
IF cratio = 1 THEN crt$ = "1"
IF cratio = 2 THEN crt$ = "2"
IF cratio = 3 THEN crt$ = "3"
IF cratio = 4 THEN crt$ = "4"
IF cratio = 5 THEN crt$ = "5"
IF speed = 1 THEN sp$ = "1"
IF speed = 2 THEN sp$ = "2"
IF speed = 3 THEN sp$ = "3"
IF msfirms = 1 THEN msf$ = "1"
IF msfirms = 2 THEN msf$ = "2"
IF msfirms = 3 THEN msf$ = "3"
IF port = 0 THEN prt$ = "0"
IF port = 1 THEN prt$ = "1"
```

```
IF port = 2 THEN prt$ = "2"
IF port = 3 THEN prt$ = "3"
IF port = 4 THEN prt$ = "4"
replacep$ = msf$ + sp$
replacet$ = msf$ + crt$ + sp$ + prt$
MID$(prob$, 25, 2) = replacep$
MID$(tran$, 25, 4) = replacet$
PRINT replacet$; " ";
RETURN
'***** END OF FileNames SUBMODULE *****


INITIALIZE:
'Submodule to perform various initialization tasks.
OPEN prob$ FOR INPUT AS #2
OPEN tran$ FOR OUTPUT AS #3
GOSUB ZEROPROB:
GOSUB PROBREAD0:
GOSUB SCENREAD: 'Read scenario list.
GOSUB COSTCOMPUTE: 'Compute costs.
GOSUB PQZERO: 'Iteration 0 prices, quantities, profits & Consumer
Surplus.
GOSUB PQCOMPUTE: 'Compute prices, quantities, profits & Consumer
Surplus.
GOSUB HHI: 'Compute HHI and market shares.
GOSUB PROFITS: 'Assign profits to MS and competitors.
GOSUB PRINTTRAN0: 'Print transition files.
RETURN
'***** END OF Initialize SUBMODULE *****


ZEROPROB:
'This submodule sets the prob1(0, .) and mshare(0, .)
'   variable values to zero.
FOR firm1 = 0 TO 3
   prob1(0, firm1) = 0
NEXT firm1
RETURN
'***** END OF ZEROPROB SUBMODULE *****


SCENREAD:
'This submodule reads in the scenario costs list.
```

```
cost$ = "c:\basic\ms_sim\costlist.txt" 'Input scenario costs
OPEN cost$ FOR INPUT AS #1
LINE INPUT #1, dummy$
'cost(s,f) = short-run marginal cost of firm f in scenario s.
'finprob(s) = final probability assumed for scenario s.
'wgt(scen) = number of permutations of scenario s.
FOR scen = 1 TO 35
   INPUT #1, scen2, L1, L2, L3, L4, L5, wgt, finprob
     IF scen <> scen2 THEN PRINT "Scenario mismatch", scen, scen2
   INPUT #1, c1, c2, c3
   FOR firm = 1 TO 3
     INPUT #1, pv(scen, firm)
   NEXT firm
NEXT scen
CLOSE #1
RETURN
'***** END OF SCENREAD SUBMODULE *****


COSTCOMPUTE:
'Submodule to compute short-run costs, long-run costs,
'   and assumed elasticity of demand.

'This section computes parameters for long-run costs
'   under the assumption that each firm has
'   the same long-run cost function.
'Assume that one portion of Microsoft's
'   long-run cost (LRC) is a long-run fixed cost (FC),
'   while the other portion is a long-run variable cost (VC),
'   which is proportional to output.
lrc = .1855 'computed as MS long-run cost divided by MS monopoly
revenue.
IF port = 0 THEN portion = 0!
IF port = 1 THEN portion = .25
IF port = 2 THEN portion = .5
IF port = 3 THEN portion = .75
IF port = 4 THEN portion = 1!
fc = lrc * portion
vc = lrc * (1 - portion)

'This section computes elasticity of demand (Elas) at
'   monopoly profit maximum, as a function of marginal cost,
'   which is composed of short-run marginal cost (SRC)
```

```
'   plus long-run variable cost (VC).
src = .4101 'computed as MS short-run cost divided by MS monopoly
revenue.
mc = src + vc
elas = 1 / (mc - 1)
elasminus = elas - 1
elasplus = elas + 1
A = elasminus / elas 'Intercept of linear demand curve with price
axis.
b = -1 / elas 'Slope of linear demand curve.
cbase = src 'Base level of short-run marginal cost (cost level
2).
logcbase = LOG(cbase / (A - vc - cbase)) 'Cbase converted to log-
ratios.

'This section computes short-run costs and marginal costs
'   for a given cost spread.
IF cratio = 1 THEN cspread = .950980935#
IF cratio = 2 THEN cspread = .748669813#
IF cratio = 3 THEN cspread = .622288438#
IF cratio = 4 THEN cspread = .469161475#
IF cratio = 5 THEN cspread = .273626703#
FOR scen = 1 TO 35
   FOR firm = 1 TO 3
      pvtemp = (pv(scen, firm) - 180) / 120
      logpv = logcbase + pvtemp * cspread
      pvratio = EXP(logpv)
      cost(scen, firm) = vc + (A - vc) * pvratio / (1 + pvratio)
   NEXT firm
NEXT scen
RETURN
'***** END OF CostCompute SUBMODULE *****


PQZERO:
'Submodule to compute prices, quantities, profits,
'   and consumer surplus for selected scenarios,
'   for iteration zero, where 1, 2, or 3 Microsoft APM firms
'   are assumed initially to have no competitors.
'Pi(s,f) is long-run profit for firm f within scenario s.
'CS(s) is Consumer Surplus parameter for scenario s.
DIM cs(35), pi(35, 3)
   num = msfirms
```

```
   costsum = 0
   FOR firm = 1 TO num
      cost(0, firm) = cost(scen0, firm)
      costsum = costsum + cost(0, firm)
   NEXT firm
   price = (A + costsum) / (num + 1)
   qtot = 0
   FOR firm = 1 TO num
      qtemp = (price - cost(0, firm)) / b
      qtot = qtot + qtemp
      quant(0, firm) = qtemp
      pitemp = (price - cost(0, firm)) * qtemp
      pitemp = pitemp - fc
      pi(0, firm) = pitemp
   NEXT firm
   FOR firm = num + 1 TO 3
      quant(0, firm) = 0
      pi(0, firm) = 0
   NEXT firm
   cs(0) = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF quant(0, num) < 0 THEN pdummy = 0
   IF pi(0, num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN
      scen = 0
      IF msfirms = 3 THEN GOSUB PQSUB2:
      IF msfirms = 2 THEN GOSUB PQSUB1:
      IF msfirms = 1 THEN GOSUB PQSUB0:
      END IF
   price(0) = price
   pnum(0) = num
RETURN
'***** END OF PQzero SUBMODULE *****


PQCOMPUTE:
'Submodule to compute prices, quantities, profits,
'   and consumer surplus for each scenario.
'Pi(s,f) is long-run profit for firm f within scenario s.
'CS(s) is Consumer Surplus parameter for scenario s.
FOR scen = 1 TO 35
   num = 3
   costsum = 0
```

```
    FOR firm = 1 TO num
       costsum = costsum + cost(scen, firm)
    NEXT firm
    price = (A + costsum) / (num + 1)
    qtot = 0
    FOR firm = 1 TO num
       qtemp = (price - cost(scen, firm)) / b
       qtot = qtot + qtemp
       quant(scen, firm) = qtemp
       pitemp = (price - cost(scen, firm)) * qtemp
       pitemp = pitemp - fc
       pi(scen, firm) = pitemp
    NEXT firm
    cs(scen) = qtot * (A - price) / 2
    pdummy = 1 'Is last firm producing?
    IF quant(scen, num) < 0 THEN pdummy = 0
    IF pi(scen, num) < 0 THEN pdummy = 0
    IF pdummy = 0 THEN GOSUB PQSUB2:
    price(scen) = price
    pnum(scen) = num
NEXT scen
RETURN
'***** END OF PQcompute SUBMODULE *****


PQSUB2:
'Submodule of PQcompute/PQsub4/PQsub3 submodule,
'   to compute prices and quantities
'   when fewer than 3 firms are producing.
num = 2
   quant(scen, num + 1) = 0
   pi(scen, num + 1) = 0
   costsum = 0
   FOR firm = 1 TO num
      costsum = costsum + cost(scen, firm)
   NEXT firm
   price = (A + costsum) / (num + 1)
   qtot = 0
   FOR firm = 1 TO num
      qtemp = (price - cost(scen, firm)) / b
      qtot = qtot + qtemp
      quant(scen, firm) = qtemp
      pitemp = (price - cost(scen, firm)) * qtemp
```

```
      pitemp = pitemp - fc
      pi(scen, firm) = pitemp
   NEXT firm
   cs(scen) = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF quant(scen, num) < 0 THEN pdummy = 0
   IF pi(scen, num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN GOSUB PQSUB1:
RETURN
'***** END OF PQsub2SUBMODULE *****


PQSUB1:
'Submodule of PQcompute/PQsub4/PQsub3/PQsub2 submodule,
'   to compute prices and quantities
'   when fewer than 2 firms are producing.
num = 1
   quant(scen, num + 1) = 0
   pi(scen, num + 1) = 0
   costsum = 0
   FOR firm = 1 TO num
      costsum = costsum + cost(scen, firm)
   NEXT firm
   price = (A + costsum) / (num + 1)
   qtot = 0
   FOR firm = 1 TO num
      qtemp = (price - cost(scen, firm)) / b
      qtot = qtot + qtemp
      quant(scen, firm) = qtemp
      pitemp = (price - cost(scen, firm)) * qtemp
      pitemp = pitemp - fc
      pi(scen, firm) = pitemp
   NEXT firm
   cs(scen) = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF quant(scen, num) < 0 THEN pdummy = 0
   IF pi(scen, num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN GOSUB PQSUB0:
RETURN
'***** END OF PQsub1 SUBMODULE *****


PQSUB0:
```

```
'Submodule of PQcompute/PQsub4,3,2,1 submodules,
'   to compute prices and quantities
'   when no firms are producing.
num = 0
   quant(scen, num + 1) = 0
   pi(scen, num + 1) = 0
   price = A
   cs(scen) = 0
RETURN
'***** END OF PQsub0 SUBMODULE *****


HHI:
'Submodule to compute Herfindahl-Herschmann Indices
'   for each given cost spread.
FOR scen = 0 TO 35
   qtot = 0
   FOR firm = 1 TO 3
      qtot = qtot + quant(scen, firm)
   NEXT firm
   IF qtot = 0 THEN
      HHI = 10000
      mshare(scen, 1) = 1
      mshare(scen, 2) = 0
      mshare(scen, 3) = 0
      GOTO 333
      END IF
   HHI = 0
   FOR firm = 1 TO 3
      mtemp = quant(scen, firm) / qtot
      mshare(scen, firm) = mtemp
      HHI = HHI + mtemp * mtemp * 10000
   NEXT firm
   herf(scen) = HHI
333 NEXT scen
RETURN
'***** END OF HHI SUBMODULE *****


PROFITS:
'This submodule assigns the previously computed
'   long-run business profits for each firm
'   to Microsoft and Microsoft's competitors.
```

```
'PiMS(s,f) = Microsoft's profit in scenario s,
'   assuming that Microsoft is firm f.
'PiComp(s,f) = Competitors' profits in scenario s,
'   assuming that Microsoft is firm f.
'If f=0, Microsoft has zero market share.
FOR scen = 0 TO 35
     pitot = 0
   FOR firm = 1 TO 3
     pitot = pitot + pi(scen, firm)
   NEXT firm
     pims(scen, 0) = 0
     picomp(scen, 0) = pitot
   FOR firm = 1 TO 3
     pitemp = pi(scen, firm)
     pitemp = pitemp * msfirms
     pims(scen, firm) = pitemp
     picomp(scen, firm) = pitot - pitemp
   NEXT firm
NEXT scen
'Microsoft profit (pitemp) is multiplied by the number of
Microsoft firms.
'When MSfirms=1, all profit calculations are accurate.
'When MSfirms=2 or 3, pims is accurate, but picomp is not
accurate for
'particular scenario/firm #, because this APM program
'does not simultaneously track more than one Microsoft firm.
'However, probability-weighted averages over all firm #s
'for a given scenario are an accurate average for both pims and
picomp.
RETURN
'***** END OF PROFITS SUBMODULE *****


PRINTTRAN0:
'This submodule prints the transition factors for
'   iteration zero, including average consumer surplus,
'   average profits for Microsoft and its competitors,
'   average market share for Microsoft, the industry-wide
'   Herfindahl-Hershman Index (HHI), and the average
'   number of main firms in the industry.
'These transition factors must be multiplied by Microsoft's
'   annual monopoly revenues to determine dollar values.
cstot = 0
```

```
pimstot = 0
picomptot = 0
mktshare = 0
herfindahl = 0
firmnum = 0
scen = 0 'Choose scen=scen0 to assume competitors in period 0.
   FOR firm = 0 TO 3
      tempprob = prob1(0, firm)
      cstot = cstot + cs(scen) * tempprob
      pimstot = pimstot + pims(scen, firm) * tempprob
      picomptot = picomptot + picomp(scen, firm) * tempprob
      mktshare = mktshare + mshare(scen, firm) * tempprob
      herfindahl = herfindahl + herf(scen) * tempprob
      firmnum = firmnum + pnum(scen) * tempprob
   NEXT firm
PRINT #3, "Iter";
PRINT #3, " ConsumerSurpls ";
PRINT #3, "Profit(MS)      ";
PRINT #3, " Profit(comp)    ";
PRINT #3, " MktShare(1-MS)";
PRINT #3, " MktShare(n-MS)";
PRINT #3, " Herfindahl     ";
PRINT #3, " # firms        "
PRINT #3, USING "###"; 0;
PRINT #3, USING "###.############"; cstot; pimstot; picomptot;
PRINT #3, USING "####.###########"; mktshare * 100; msfirms *
mktshare * 100;
PRINT #3, USING "######.########"; herfindahl;
PRINT #3, USING "##.############"; firmnum
RETURN
'***** END OF PRINTTRAN0 SUBMODULE *****


PRINTTRAN:
'This submodule prints the transition factors for each
'   subsequent iteration, including average consumer surplus,
'   average profits for Microsoft and its competitors,
'   average market share for Microsoft, the industry-wide
'   Herfindahl-Hershman Index (HHI), and the average
'   number of main firms in the industry.
'These transition factors must be multiplied by Microsoft's
'   annual monopoly revenues to determine dollar values.
cstot = 0
```

```
pimstot = 0
picomptot = 0
mktshare = 0
herfindahl = 0
firmnum = 0
FOR scen = 1 TO 35
   FOR firm = 0 TO 3
      tempprob = prob1(scen, firm)
      cstot = cstot + cs(scen) * tempprob
      pimstot = pimstot + pims(scen, firm) * tempprob
      picomptot = picomptot + picomp(scen, firm) * tempprob
      mktshare = mktshare + mshare(scen, firm) * tempprob
      herfindahl = herfindahl + herf(scen) * tempprob
      firmnum = firmnum + pnum(scen) * tempprob
   NEXT firm
NEXT scen
PRINT #3, USING "###"; iter;
PRINT #3, USING "###.############"; cstot; pimstot; picomptot;
PRINT #3, USING "####.###########"; mktshare * 100; msfirms *
mktshare * 100;
PRINT #3, USING "######.########"; herfindahl;
PRINT #3, USING "##.############"; firmnum
RETURN
'***** END OF PRINTTRAN SUBMODULE *****


PROBREAD0:
'Submodule to read iteration 0 transition probabilities.
LINE INPUT #2, temp$
INPUT #2, iter2, scen0
   IF 0 <> iter2 THEN PRINT "Iteration 0 mismatch:"; 0, iter2
FOR firm = 0 TO 3
   INPUT #2, prob1(0, firm)
NEXT firm
RETURN
'***** END OF PROBREAD0 SUBMODULE *****


PROBREAD:
'Submodule to read subsequent iteration transition probabilities.
FOR scen = 1 TO 35
   INPUT #2, iter2, scen2
   IF iter <> iter2 THEN PRINT "Iteration S mismatch:"; iter,
```

```
iter2
   IF scen <> scen2 THEN PRINT "Scenario S mismatch:"; scen;
scen2
   FOR firm = 0 TO 3
      INPUT #2, probl(scen, firm)
   NEXT firm
NEXT scen
RETURN
'***** END OF PROBREAD SUBMODULE *****

'**********END OF Program "MS4TranA.bas".**********
```

Attachment P.

```
'BASIC Program "MS5TranR.bas".

'Program Number 5 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS5TranR.bas", uses the probability data
'computed by "MS3ProbR.bas" to compute Consumer Surplus and
'Profits for both Microsoft and Microsoft's competitors.
'In transition period zero (iter=0), Microsoft (and its
'successor firms after divestiture) are assumed to have no
competitors.
'In subsequent transition periods (iter=1 to 10),
'Microsoft has (potentially) one or more competitors.
'This program calculates both Relative Profit Maximizing ("RPM")
'and Absolute Profit Maximizing ("APM") equilibria.

'   The program uses the computed probabilities for each
'scenario that was previously outputted by the
'"MS3ProbR.bas" program as various "PROB....txt" files.
'   This program outputs as "TRPM....txt" files the
'computed transition factors for several alternative timepaths
'for the software industry, under several alternative
assumptions.
'These transition factors are computed as a fraction
'of the revenues which Microsoft would earn if it remained
'a monopoly.
'   This program computes transition factors
'for alternative timepaths for the software industry,
'under the assumption that Microsoft is split into two firms,
'and these two firms adopt relative profit maximizing (RPM)
'incentives in either a pure or impure form.
'The goal functions for the two RPM firms are:
'          Goal1 = Profit1 - z * Profit2
'          Goal2 = Profit2 - z * Profit1
'All other (non-Microsoft, competitor) firms are assumed
'to have absolute profit maximizing (APM) incentives.

'The assumed values for z in the transitions are:
'    TRPM0) The value of z=0.0 'Same as Absolute Profit
```

```
Maximizing (APM).
'     TRPM1) The value of z=0.1 '10% RPM, 90% APM.
'     TRPM2) The value of z=0.2 '20% RPM, 80% APM.
'     TRPM3) The value of z=0.3 '30% RPM, 70% APM.
'     TRPM4) The value of z=0.4 '40% RPM, 60% APM.
'     TRPM5) The value of z=0.5 '50% RPM, 50% APM.
'     TRPM6) The value of z=0.6 '60% RPM, 40% APM.
'     TRPM7) The value of z=0.7 '70% RPM, 30% APM.
'     TRPM8) The value of z=0.8 '80% RPM, 20% APM.
'     TRPM9) The value of z=0.9 '90% RPM, 10% APM.

'   This program differs from the MS4TranA.bas program
'in that it considers only two successor firms for Microsoft,
'and simultaneously tracks the rankings of both firms.
'   The 750 outputted transition (TRPM....txt) files are computed
'for three speeds of transition (speed=1,2,3),
'five cost ratios for short-run cost (cratio=1,2,3,4,5),
'five assumptions concerning the portion of long-run costs
'allocated to fixed costs (port=0,1,2,3,4),
'ten different values of z
'(z = 0.0, 0.1, 0.2, 0.3, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9).
'The starting point for the transitions in this program
'always has Microsoft divided into two RPM firms (msfirms=2).
'   An additional feature of the program allows the value of z to
'change in response to circumstances.  If zbump=0.0, then z is
fixed,
'and does not change in response to circumstances.  If zbump > 0,
'then z changes in response to circumstances.  In the program,
'z responds to the circumstance that one of the RPM firms
'is not producing, because it is achieving negative absolute
profit.
'In this circumstance, the program automatically "bumps down" the
value
'of z for both RPM firms by the amount of zbump.  For example,
'if z=0.7 and zbump=0.3, then if one or both RPM firms would shut
down,
'then the value of z is automatically bumped down to z=0.4.
'In many circumstances, this allows both RPM firms to continue
producing.
'   The user determines the value of zbump as part of the control
module.


DEFDBL A-Z
```

```
DIM prob1r(35, 15), herf(35, 15), sharems(35, 15), pnum(35, 15)
DIM qtotal(35, 15), cost(35, 3), pv(35, 3), price(35, 15)
DIM pims(35, 15), picomp(35, 15)
DIM cs(35, 15), pi(35, 15)


'CONTROL MODULE
CLS
timex = TIMER
'*****User Determines amount by which z should be bumped down,
'     if RPM firm2 is not producing when z=zhold(zcount).*****
zbump = 0!    '*****User determines zbump.*****
'*****If zbump=0, then z is fixed and never changes.
'*****zbump >= 0.  Recommended value is zbump=0.3.****
GOSUB PRINTZCOUNT:
GOSUB SCENREAD:
'This section calls the main module 750 times.
'This control module chooses market tendency:
   'cratio=1 'Ratio for low/high short-run cost is 0.2500
(1/4.0).
   'cratio=2 'Ratio for low/high short-run cost is 0.3333
(1/3.0).
   'cratio=3 'Ratio for low/high short-run cost is 0.4000
(1/2.5).
   'cratio=4 'Ratio for low/high short-run cost is 0.5000
(1/2.0).
   'cratio=5 'Ratio for low/high short-run cost is 0.6667
(1/1.5).
'This control module chooses speed for market share shifts:
   'speed = 1 'Slow speed for market share shifts.
   'speed = 2 'Moderate speed for market share shifts.
   'speed = 3 'High speed for market share shifts.
'In this program, # of msfirms at iteration zero is always two.
msfirms = 2
'This control module chooses z (weight on rival firm's profits).
   'zcount=0 'z = 0.0
   'zcount=1 'z = 0.1
   'zcount=2 'z = 0.2
   'zcount=3 'z = 0.3
   'zcount=4 'z = 0.4
   'zcount=5 'z = 0.5
   'zcount=6 'z = 0.6
   'zcount=7 'z = 0.7
   'zcount=8 'z = 0.8
```

```
   'zcount=9 'z = 0.9
'This control module chooses proportion of long-run cost
'   which is assumed to be a fixed cost.
   'port = 0 'Fixed cost is 0% of long-run cost.
   'port = 1 'Fixed cost is 25% of long-run cost.
   'port = 2 'Fixed cost is 50% of long-run cost.
   'port = 3 'Fixed cost is 75% of long-run cost.
   'port = 4 'Fixed cost is 100% of long-run cost.

FOR cratio = 1 TO 5
   FOR speed = 1 TO 3
     FOR port = 0 TO 4
       FOR zcount = 0 TO 9
         GOSUB MAINMODULE:
       NEXT zcount
     NEXT port
   NEXT speed
NEXT cratio
PRINT TIMER - timex
END


PRINTZCOUNT:
'This submodule assigns values of z to each zcount,
'   and prints these z values for transfer to
'   the subsequent "MS6Summ.bas" program.
DIM zhold(9)
zcount$ = "c:\basic\ms_sim\out\zcount.txt" 'Output zcount data.
OPEN zcount$ FOR OUTPUT AS #1
PRINT #1, "Zcount  Z"
FOR zcount = 0 TO 9
   IF zcount = 0 THEN z = 0!
   IF zcount = 1 THEN z = .1
   IF zcount = 2 THEN z = .2
   IF zcount = 3 THEN z = .3
   IF zcount = 4 THEN z = .4
   IF zcount = 5 THEN z = .5
   IF zcount = 6 THEN z = .6
   IF zcount = 7 THEN z = .7
   IF zcount = 8 THEN z = .8
   IF zcount = 9 THEN z = .9
   zhold(zcount) = z
   PRINT #1, USING "######"; zcount;
   PRINT #1, USING "###.######"; z
```

```
NEXT zcount
CLOSE #1
RETURN
'***** END OF PrintZcount SUBMODULE *****


MAINMODULE:
z = zhold(zcount)
GOSUB FILENAMES: 'Assign file names to input/output files.
GOSUB INITIALIZE:
FOR iter = 1 TO 10
   GOSUB PROBREAD:
   GOSUB PRINTTRAN:
NEXT iter
CLOSE
RETURN
'***** END OF MAIN MODULE *****


FILENAMES:
prob$ = "c:\basic\ms_sim\out\probr0.txt" 'Input RPM transition
probabilities
tran$ = "c:\basic\ms_sim\out\tRPM0000.txt" 'Output RPM transition
factors
IF cratio = 1 THEN crt$ = "1"
IF cratio = 2 THEN crt$ = "2"
IF cratio = 3 THEN crt$ = "3"
IF cratio = 4 THEN crt$ = "4"
IF cratio = 5 THEN crt$ = "5"
IF speed = 1 THEN sp$ = "1"
IF speed = 2 THEN sp$ = "2"
IF speed = 3 THEN sp$ = "3"
IF zcount = 0 THEN zc$ = "0"
IF zcount = 1 THEN zc$ = "1"
IF zcount = 2 THEN zc$ = "2"
IF zcount = 3 THEN zc$ = "3"
IF zcount = 4 THEN zc$ = "4"
IF zcount = 5 THEN zc$ = "5"
IF zcount = 6 THEN zc$ = "6"
IF zcount = 7 THEN zc$ = "7"
IF zcount = 8 THEN zc$ = "8"
IF zcount = 9 THEN zc$ = "9"
IF port = 0 THEN prt$ = "0"
IF port = 1 THEN prt$ = "1"
```

```
IF port = 2 THEN prt$ = "2"
IF port = 3 THEN prt$ = "3"
IF port = 4 THEN prt$ = "4"
replacep$ = sp$
replacet$ = zc$ + crt$ + sp$ + prt$
MID$(prob$, 26, 1) = replacep$
MID$(tran$, 25, 4) = replacet$
PRINT replacet$; " ";
RETURN
'***** END OF FileNames SUBMODULE *****


INITIALIZE:
'Submodule to perform various initialization tasks.
OPEN prob$ FOR INPUT AS #2
OPEN tran$ FOR OUTPUT AS #3
GOSUB ZEROPROB:
GOSUB PROBREAD0:
GOSUB SCENREAD: 'Read scenario list.
GOSUB COSTCOMPUTE: 'Compute costs.
GOSUB PQZERO: 'Iteration 0 prices, quantities, profits & Consumer
Surplus.
GOSUB PQCOMPUTE: 'Compute prices, quantities, profits & Consumer
Surplus.
GOSUB PRINTTRAN0: 'Print transition files.
RETURN
'***** END OF Initialize SUBMODULE *****


ZEROPROB:
'This submodule sets the prob1r(0, .)
'   variable values to zero.
FOR pair = 0 TO 15
   prob1r(0, pair) = 0
NEXT pair
RETURN
'***** END OF ZeroProb SUBMODULE *****


SCENREAD:
'This submodule reads in the scenario costs list.
cost$ = "c:\basic\ms_sim\costlist.txt" 'Input scenario costs
OPEN cost$ FOR INPUT AS #1
LINE INPUT #1, dummy$
```

```
'cost(s,f) = short-run marginal cost of firm f in scenario s.
'finprob(s) = final probability assumed for scenario s.
'wgt(scen) = number of permutations of scenario s.
FOR scen = 1 TO 35
   INPUT #1, scen2, L1, L2, L3, L4, L5, wgt, finprob
     IF scen <> scen2 THEN PRINT "Scenario mismatch", scen, scen2
   INPUT #1, c1, c2, c3
   FOR firm = 1 TO 3
     INPUT #1, pv(scen, firm)
   NEXT firm
NEXT scen
CLOSE #1
RETURN
'***** END OF ScenRead SUBMODULE *****


COSTCOMPUTE:
'Submodule to compute short-run costs, long-run costs,
'   and assumed elasticity of demand.

'This section computes parameters for long-run costs
'   under the assumption that each firm has
'   the same long-run cost function.
'Assume that one portion of Microsoft's
'   long-run cost (LRC) is a long-run fixed cost (FC),
'   while the other portion is a long-run variable cost (VC),
'   which is proportional to output.
lrc = .1855 'computed as MS long-run cost divided by MS monopoly
revenue.
IF port = 0 THEN portion = 0!
IF port = 1 THEN portion = .25
IF port = 2 THEN portion = .5
IF port = 3 THEN portion = .75
IF port = 4 THEN portion = 1!
fc = lrc * portion
vc = lrc * (1 - portion)

'This section computes elasticity of demand (Elas) at
'   monopoly profit maximum, as a function of marginal cost,
'   which is composed of short-run marginal cost (SRC)
'   plus long-run variable cost (VC).
src = .4101 'computed as MS short-run cost divided by MS monopoly
revenue.
mc = src + vc
```

```
elas = 1 / (mc - 1)
elasminus = elas - 1
elasplus = elas + 1
A = elasminus / elas 'Intercept of linear demand curve with price
axis.
b = -1 / elas 'Slope of linear demand curve.
cbase = src 'Base level of short-run marginal cost (cost level
2).
logcbase = LOG(cbase / (A - vc - cbase)) 'Cbase converted to log-
ratios.

'This section computes short-run costs and marginal costs
'   for a given cost spread.
IF cratio = 1 THEN cspread = .950980935#
IF cratio = 2 THEN cspread = .748669813#
IF cratio = 3 THEN cspread = .622288438#
IF cratio = 4 THEN cspread = .469161475#
IF cratio = 5 THEN cspread = .273626703#
FOR scen = 1 TO 35
   FOR firm = 1 TO 3
      pvtemp = (pv(scen, firm) - 180) / 120#
      logpv = logcbase + pvtemp * cspread
      pvratio = EXP(logpv)
      cost(scen, firm) = vc + (A - vc) * pvratio / (1 + pvratio)
   NEXT firm
NEXT scen
RETURN
'***** END OF CostCompute SUBMODULE *****


PQZERO:
'Submodule to compute prices, quantities, profits,
'   and consumer surplus for selected scenarios,
'   for iteration zero, where two Microsoft RPM firms
'   are assumed initially to have no competitors.
'This program assumes that the two MS firms use
'   relative profit maximizing (RPM) incentives,
'   according to the goal functions for each firm:
'   Goal(firm1)=profit(firm1)-z*profit(firm2)
'   Goal(firm2)=profit(firm2)-z*profit(firm1)
scen = 0
firm1 = 1
firm2 = 2
pair1 = firm1 * 4 + firm2
```

```
pair2 = firm2 * 4 + firm1
FOR firm = 1 TO 2
   cost(0, firm) = cost(scen0, firm)
NEXT firm
FOR firm = 3 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
   cost(0, firm) = A
NEXT firm
bump = 0 'Dummy variable to determine if z should be bumped down.
z = zhold(zcount)
GOSUB RPMSUB0:
IF bump = 1 THEN
   z = z - zbump
   GOSUB RPMSUB0:
   END IF
GOSUB ASSIGN:
RETURN
'***** END OF PQzero SUBMODULE *****


PQCOMPUTE:
'Submodule to compute prices, quantities, profits,
'   and consumer surplus for all scenarios and firm pairs.
FOR scen = 1 TO 35
  FOR firm1 = 0 TO 3
      firm2 = 0
      pair1 = firm1 * 4 + firm2
      pair2 = firm2 * 4 + firm1
      delfirm = 0
      bump = 0 'Dummy variable to determine if z should be bumped
down.
      z = zhold(zcount)
      GOSUB APMCOMPUTE:
      GOSUB ASSIGN:
  NEXT firm1
  FOR firm1 = 1 TO 3
    FOR firm2 = 1 TO 3
      IF firm2 <= firm1 THEN 357
      pair1 = firm1 * 4 + firm2
      pair2 = firm2 * 4 + firm1
      bump = 0 'Dummy variable to determine if z should be bumped
down.
      z = zhold(zcount)
```

```
      GOSUB RPMCOMPUTE:
      IF bump = 1 THEN
         z = z - zbump
         GOSUB RPMCOMPUTE:
         END IF
      GOSUB ASSIGN:
357 NEXT firm2
  NEXT firm1
NEXT scen
RETURN
'***** END OF PQcompute SUBMODULE *****


ASSIGN:
'Submodule to assign computed numbers for each scenario
'   and combination of firms.
qtotal(scen, pair1) = qtot
price(scen, pair1) = price
pnum(scen, pair1) = tnum
cs(scen, pair1) = cstemp
qtotal(scen, pair2) = qtot
price(scen, pair2) = price
pnum(scen, pair2) = tnum
cs(scen, pair2) = cstemp
IF qtot = 0 THEN
   share(1) = 1
   share(2) = 0
   share(3) = 0
   GOTO 333
   END IF
FOR firm = 1 TO 3
   share(firm) = qtemp(firm) / qtot
NEXT firm
333 pitot = 0
herf = 0
FOR firm = 1 TO 3
   pitot = pitot + pitemp(firm)
   herf = herf + share(firm) * share(firm)
NEXT firm
herf = herf * 10000
herf(scen, pair1) = herf
herf(scen, pair2) = herf
ms1share = share(firm1)
ms2share = share(firm2)
```

```
msavgshare = (ms1share + ms2share) / 2
sharems(scen, pair1) = msavgshare
sharems(scen, pair2) = msavgshare
mspi1 = pitemp(firm1)
mspi2 = pitemp(firm2)
IF firm1 = 0 THEN mspi1 = 0
IF firm2 = 0 THEN mspi2 = 0
mspitot = mspi1 + mspi2
comppitot = pitot - mspitot
pims(scen, pair1) = mspitot
pims(scen, pair2) = mspitot
picomp(scen, pair1) = comppitot
picomp(scen, pair2) = comppitot
ms1goal = mspi1 - z * mspi2 'Firm 1's RPM goal function.
ms2goal = mspi2 - z * mspi1 'Firm 2's RPM goal function.
RETURN
'***** END OF Assign SUBMODULE *****


RPMCOMPUTE:
'Submodule to compute prices, quantities, profits,
'   and consumer surplus for each RPM scenario.
'   This submodule assumes that two RPM firms
'   choose to produce.
anum = 1 'anum = number of producing APM firms.
num = anum 'num = last producing APM firm.
IF num = firm1 THEN num = num + 1
IF num = firm2 THEN num = num + 1
IF num = firm1 THEN num = num + 1
tnum = anum + 2 'tnum = total number of producing firms.
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   costsum = 0
   FOR firm = 1 TO num
      IF firm <> firm1 AND firm <> firm2 THEN
         costsum = costsum + cost(scen, firm)
      END IF
   NEXT firm
   costsum = (A + costsum) * (1 - z)
   costsum = costsum + cost(scen, firm1) + cost(scen, firm2)
   price = costsum / (3 - anum * z + anum - z)
   qtot = (A - price) / b
```

```
   qapm = 0
   FOR firm = 1 TO num
      IF firm <> firm1 AND firm <> firm2 THEN
         qtemp(firm) = (price - cost(scen, firm)) / b
         qapm = qapm + qtemp(firm)
         pitemp = (price - cost(scen, firm)) * qtemp(firm)
         pitemp(firm) = pitemp - fc
      END IF
   NEXT firm
   qrpm = qtot - qapm
   qgap = (cost(scen, firm2) - cost(scen, firm1)) / b / (1 + z)
   qtemp(firm1) = (qrpm + qgap) / 2
      pitemp = (price - cost(scen, firm1)) * qtemp(firm1)
      pitemp(firm1) = pitemp - fc
   qtemp(firm2) = (qrpm - qgap) / 2
      pitemp = (price - cost(scen, firm2)) * qtemp(firm2)
      pitemp(firm2) = pitemp - fc
   cstemp = qtot * (A - price) / 2
'Must choose which firm (if any) to shut down,
'   based on quantities and profits.
'First, test for negative quantities.
aq = 1 'quantity dummy for APM firm.
   IF qtemp(num) < 0 THEN aq = 0
rq = 1 'quantity dummy for RPM firm.
   IF qtemp(firm2) < 0 THEN rq = 0
IF aq = 0 AND rq = 1 THEN
   GOSUB RPMSUB0:
   RETURN
   END IF
IF aq = 1 AND rq = 0 THEN
   IF bump = 0 THEN
      bump = 1
      RETURN
      END IF
   delfirm = firm2
   GOSUB APMCOMPUTE:
   RETURN
   END IF
IF aq = 0 AND rq = 0 THEN
   IF firm2 > num THEN
      IF bump = 0 THEN
         bump = 1
         RETURN
         END IF
```

```
        delfirm = firm2
        GOSUB APMCOMPUTE:
        RETURN
        END IF
     IF firm2 < num THEN
        GOSUB RPMSUB0:
        RETURN
        END IF
     END IF
'Second, test for negative profits.
api = 1 'profit dummy for APM firm.
     IF pitemp(num) < 0 THEN api = 0
rpi = 1 'profit dummy for RPM firm.
     IF pitemp(firm2) < 0 THEN rpi = 0
IF api = 0 AND rpi = 1 THEN
     GOSUB RPMSUB0:
     RETURN
     END IF
IF api = 1 AND rpi = 0 THEN
     IF bump = 0 THEN
        bump = 1
        RETURN
        END IF
     delfirm = firm2
     GOSUB APMCOMPUTE:
     RETURN
     END IF
IF api = 0 AND rpi = 0 THEN
     IF pitemp(firm2) < pitemp(num) THEN
        IF bump = 0 THEN
           bump = 1
           RETURN
           END IF
        delfirm = firm2
        GOSUB APMCOMPUTE:
        RETURN
     ELSE
        GOSUB RPMSUB0:
        RETURN
     END IF
END IF
'If program reaches here, then all firms are producing.
RETURN
'***** END OF RPMcompute SUBMODULE *****
```

```
RPMSUB0:
'Submodule of RPMcompute submodule,
'   to compute prices and quantities
'   when zero APM firms are producing.
num = 0
anum = num 'anum = number of producing APM firms
tnum = anum + 2 'tnum = total number of producing firms
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   qtemp(num + 1) = 0
   pitemp(num + 1) = 0
   costsum = 0
   costsum = (A + costsum) * (1 - z)
   costsum = costsum + cost(scen, firm1) + cost(scen, firm2)
   price = costsum / (3 - anum * z + anum - z)
   qtot = (A - price) / b
   qapm = 0
   qrpm = qtot - qapm
   qgap = (cost(scen, firm2) - cost(scen, firm1)) / b / (1 + z)
   qtemp(firm1) = (qrpm + qgap) / 2
      pitemp = (price - cost(scen, firm1)) * qtemp(firm1)
      pitemp(firm1) = pitemp - fc
   qtemp(firm2) = (qrpm - qgap) / 2
      pitemp = (price - cost(scen, firm2)) * qtemp(firm2)
      pitemp(firm2) = pitemp - fc
   cstemp = qtot * (A - price) / 2
r2dummy = 1 'Is RPM firm2 producing?
   IF qtemp(firm2) < 0 THEN r2dummy = 0
   IF pitemp(firm2) < 0 THEN r2dummy = 0
IF r2dummy = 0 THEN
   IF firm1 = 1 THEN
      IF bump = 0 THEN
         bump = 1
         RETURN
         END IF
      delfirm = 0
      GOSUB APMSUB1:
      RETURN
      END IF
   IF firm1 = 2 THEN
      IF bump = 0 THEN
```

```
            bump = 1
            RETURN
            END IF
         delfirm = 1
         GOSUB APMSUB2:
         RETURN
         END IF
      END IF
'If program reaches here, then both RPM firms are producing.
RETURN
'***** END OF RPMsub0 SUBMODULE *****


APMCOMPUTE:
'   Submodule to compute prices, quantities, profits,
'and consumer surplus for each APM scenario.
'The delfirm variable is used to determine whether to
'delete one of the firms from the APM scenario.
'  If delfirm=0, no firms are deleted from the computation.
'  If delfirm=1, then firm 1 is deleted from the computation.
'  If delfirm=2, then firm 2 is deleted from the computation.
'  If delfirm=3, then firm 3 is deleted from the computation.
num = 3
IF delfirm = num THEN GOTO APMSUB2:
anum = num 'anum = number of producing APM firms.
IF delfirm > 0 THEN
   IF delfirm <= num THEN anum = num - 1
END IF
tnum = anum 'tnum = total number of producing firms
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   costsum = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
      costsum = costsum + cost(scen, firm)
      END IF
   NEXT firm
   price = (A + costsum) / (anum + 1)
   qtot = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
        qtemp(firm) = (price - cost(scen, firm)) / b
```

```
        qtot = qtot + qtemp(firm)
        pitemp = (price - cost(scen, firm)) * qtemp(firm)
        pitemp(firm) = pitemp - fc
        END IF
      IF firm = delfirm THEN
        qtemp(firm) = 0
        pitemp(firm) = 0
        END IF
   NEXT firm
   cstemp = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF qtemp(num) < 0 THEN pdummy = 0
   IF pitemp(num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN GOSUB APMSUB2:
RETURN
'***** END OF APMcompute SUBMODULE *****


APMSUB2:
'Submodule of APMcompute submodule,
'   to compute prices and quantities
'   when fewer than 3 firms are producing.
num = 2
IF delfirm = num THEN GOTO APMSUB1:
anum = num 'anum = number of producing APM firms.
IF delfirm > 0 THEN
   IF delfirm <= num THEN anum = num - 1
END IF
tnum = anum 'tnum = total number of producing firms
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   costsum = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
      costsum = costsum + cost(scen, firm)
      END IF
   NEXT firm
   price = (A + costsum) / (anum + 1)
   qtot = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
        qtemp(firm) = (price - cost(scen, firm)) / b
```

```
        qtot = qtot + qtemp(firm)
        pitemp = (price - cost(scen, firm)) * qtemp(firm)
        pitemp(firm) = pitemp - fc
        END IF
      IF firm = delfirm THEN
        qtemp(firm) = 0
        pitemp(firm) = 0
        END IF
   NEXT firm
   cstemp = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF qtemp(num) < 0 THEN pdummy = 0
   IF pitemp(num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN GOSUB APMSUB1:
RETURN
'***** END OF APMsub2SUBMODULE *****


APMSUB1:
'Submodule of APMcompute/APMsub2 submodules,
'   to compute prices and quantities
'   when fewer than 2 firms are producing.
num = 1
IF delfirm = num THEN GOTO APMSUB0:
anum = num 'anum = number of producing APM firms.
IF delfirm > 0 THEN
   IF delfirm <= num THEN anum = num - 1
END IF
tnum = anum 'tnum = total number of producing firms
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   costsum = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
      costsum = costsum + cost(scen, firm)
      END IF
   NEXT firm
   price = (A + costsum) / (anum + 1)
   qtot = 0
   FOR firm = 1 TO num
      IF firm <> delfirm THEN
        qtemp(firm) = (price - cost(scen, firm)) / b
```

```
        qtot = qtot + qtemp(firm)
        pitemp = (price - cost(scen, firm)) * qtemp(firm)
        pitemp(firm) = pitemp - fc
        END IF
      IF firm = delfirm THEN
        qtemp(firm) = 0
        pitemp(firm) = 0
        END IF
   NEXT firm
   cstemp = qtot * (A - price) / 2
   pdummy = 1 'Is last firm producing?
   IF qtemp(num) < 0 THEN pdummy = 0
   IF pitemp(num) < 0 THEN pdummy = 0
   IF pdummy = 0 THEN GOSUB APMSUB0:
RETURN
'***** END OF APMsub1 SUBMODULE *****


APMSUB0:
'Submodule of APMcompute/APMsub2,1 submodules,
'   to compute prices and quantities
'   when no firms are producing.
num = 0
anum = num 'anum = number of producing APM firms.
tnum = anum 'tnum = total number of producing firms
FOR firm = 1 TO 3
   qtemp(firm) = 0
   pitemp(firm) = 0
NEXT firm
   price = A
   cstemp = 0
RETURN
'***** END OF APMsub0 SUBMODULE *****


PRINTTRAN0:
'This submodule prints the transition factors for
'   iteration zero, including average consumer surplus,
'   average profits for Microsoft and its competitors,
'   average market share for Microsoft, the industry-wide
'   Herfindahl-Hershman Index (HHI), and the average
'   number of main firms in the industry.
'These transition factors must be multiplied by Microsoft's
'   annual monopoly revenues to determine dollar values.
```

```
cstot = 0
pimstot = 0
picomptot = 0
mktshare = 0
herfindahl = 0
firmnum = 0
scen = 0 'Choose scen=scen0 to assume competitors in period 0.
   FOR firm1 = 0 TO 3
      FOR firm2 = 0 TO 3
         pair = 4 * firm1 + firm2
         tempprob = prob1r(scen, pair)
         cstot = cstot + cs(scen, pair) * tempprob
         pimstot = pimstot + pims(scen, pair) * tempprob
         picomptot = picomptot + picomp(scen, pair) * tempprob
         mktshare = mktshare + sharems(scen, pair) * tempprob
         herfindahl = herfindahl + herf(scen, pair) * tempprob
         firmnum = firmnum + pnum(scen, pair) * tempprob
      NEXT firm2
   NEXT firm1
PRINT #3, "Iter";
PRINT #3, " ConsumerSurpls ";
PRINT #3, "Profit(MS)      ";
PRINT #3, " Profit(comp)    ";
PRINT #3, " MktShare(1-MS)";
PRINT #3, " MktShare(n-MS)";
PRINT #3, " Herfindahl     ";
PRINT #3, " # firms        "
PRINT #3, USING "###"; 0;
PRINT #3, USING "###.#############"; cstot; pimstot; picomptot;
PRINT #3, USING "####.###########"; mktshare * 100; msfirms *
mktshare * 100;
PRINT #3, USING "######.########"; herfindahl;
PRINT #3, USING "##.############"; firmnum
RETURN
'***** END OF PrintTran0 SUBMODULE *****


PRINTTRAN:
'This submodule prints the transition factors for each
'    subsequent iteration, including average consumer surplus,
'    average profits for Microsoft and its competitors,
'    average market share for Microsoft, the industry-wide
'    Herfindahl-Hershman Index (HHI), and the average
'    number of main firms in the industry.
```

```
'These transition factors must be multiplied by Microsoft's
'   annual monopoly revenues to determine true dollar values.
cstot = 0
pimstot = 0
picomptot = 0
mktshare = 0
herfindahl = 0
firmnum = 0
FOR scen = 1 TO 35
   FOR firm1 = 0 TO 3
      FOR firm2 = 0 TO 3
         pair = 4 * firm1 + firm2
         tempprob = prob1r(scen, pair)
         cstot = cstot + cs(scen, pair) * tempprob
         pimstot = pimstot + pims(scen, pair) * tempprob
         picomptot = picomptot + picomp(scen, pair) * tempprob
         mktshare = mktshare + sharems(scen, pair) * tempprob
         herfindahl = herfindahl + herf(scen, pair) * tempprob
         firmnum = firmnum + pnum(scen, pair) * tempprob
      NEXT firm2
   NEXT firm1
NEXT scen
PRINT #3, USING "###"; iter;
PRINT #3, USING "###.############"; cstot; pimstot; picomptot;
PRINT #3, USING "####.###########"; mktshare * 100; msfirms *
mktshare * 100;
PRINT #3, USING "######.########"; herfindahl;
PRINT #3, USING "##.############"; firmnum
RETURN
'***** END OF PrintTran SUBMODULE *****


PROBREAD0:
LINE INPUT #2, temp$
FOR firm1 = 0 TO 3
   INPUT #2, iter2, scen0, firm
      IF 0 <> iter2 THEN PRINT "Iteration mismatch:"; 0; iter2
      IF firm <> firm1 THEN PRINT "Firm1 mismatch:"; firm1; firm
   FOR firm2 = 0 TO 3
      pair = firm1 * 4 + firm2
      INPUT #2, prob1r(0, pair)
   NEXT firm2
NEXT firm1
RETURN
```

```
'***** END OF ProbRead0 SUBMODULE *****


PROBREAD:
FOR scen = 1 TO 35
FOR firm1 = 0 TO 3
   INPUT #2, iter2, scen2, firm
      IF iter <> iter2 THEN PRINT "Iteration mismatch:"; iter;
iter2
      IF scen <> scen2 THEN PRINT "Scenario mismatch:"; scen;
scen2
      IF firm <> firm1 THEN PRINT "Firm1 mismatch:"; firm1; firm
   FOR firm2 = 0 TO 3
      pair = firm1 * 4 + firm2
      INPUT #2, prob1r(scen, pair)
   NEXT firm2
NEXT firm1
NEXT scen
RETURN
'***** END OF ProbRead SUBMODULE *****

'**********END OF Program "MS5TranR.bas".**********
```

Attachment Q.

```
'BASIC Program "MS6Summ.bas".

'Program Number 6 in a series of six programs
'designed to simulate alternative antitrust
'remedies for the Microsoft software industry.

'Copyright, January 23, 2002, Carl Lundgren.

'   This program, "MS6Summ.bas", computes and summarizes the data
'produced by prior programs, including both "MS4TranA.bas"
'and "MS5TranR.bas".

'   This program summarizes in the form
'of aggregates and comparisons the economic meaning
'of the transitions data that were outputted by
'the "MS4TranA.bas and "MS5TranR.bas" programs.
'This program reads in the various "TRAN....txt"
'and "TRPM....txt" files produced by the prior programs
'in order to create summary files for the aggregates:
'   0) No remedy at all, continued monopoly by Microsoft.
'   1) 100% effective conduct remedy starting in 2002.
'   1a) Intermediate conduct remedies, varying
'       in effectiveness: 20%, 40%, 60%, 80%.
'   1b) Structural two-monopolies remedy, computed as
'       having outcomes equivalent to one-third value of
'       2-firm competitive APM structural remedy and
'       two-thirds value of 100% conduct remedy.
'   2) Structural 2-firm APM remedy starting in 2005.
'   3) Structural 3-firm APM remedy starting in 2005.
'   4-15) Structural 2-firm RPM remedies for z=0.1 through z=0.9,
'         starting in 2005.
'   16) Lawful behavior since 1995.
'and for the comparisons:
'   17) Aggregates for all the above alternatives,
'       minus the aggregates for the lawful path.
'
'   The program uses the transition data to estimate
'consumer surplus and profits in each of the years 1995-2025.
'Transitions are assumed to take place over a period
'of 3, 5, or 8 years each.  Years in between the transition
'years are linearly interpolated.
'    These four time paths are aggregated and
```

```
'compared for three sums over three time periods:
'   1) Sum of consumer surpluses.
'   2) Sum of non-Microsoft profits.
'   3) Sum of Microsoft profits.
'   4) Sum of total surpluses.
'   A) Time period 1995-2001.
'   B) Time period 2002-2025.
'   C) Time period 1995-2025.

'    The program reads in data for Microsoft's monopoly
' revenues by year, multiplies them by the relevant factor
' multipliers given by the Transition files (TRAN & TRPM),
' and computes interest or discounts at 7% real annual
' interest rate to billions of year 2002 real dollars.
'   The program produces data summarized for particular scenarios
'in files marked "AGGC....txt", "AGGR....txt", and "YEAR....txt".
'The "AGGC....txt" files (which are most user friendly) summarize
'all past and future data, appropriately discounted, into a
single
'set of figures which may be compared across remedy proposals.
'The "AGGR....txt" files  categorize the aggregate data into
'past and future amounts of consumer surplus, profits, and
'total surplus for each remedy proposal, and how these amounts
'compare with the same amounts along the lawful path.
'The "YEAR....txt" files (which are least user friendly) output
'the calculated amounts, by year, for each remedy proposal and
'the lawful path.

DEFDBL A-Z
DIM aggcs(16, 3), aggcomp(16, 3), aggms(16, 3), aggts(16, 3)
'Aggregates
DIM compcs(16, 3), compcomp(16, 3), compms(16, 3), compts(16, 3)
'Comparisons
DIM aggcsmin(16, 3), aggcompmin(16, 3), aggmsmin(16, 3),
aggtsmin(16, 3) 'Minimums
DIM compcsmin(16, 3), compcompmin(16, 3), compmsmin(16, 3),
comptsmin(16, 3) 'Minimums
DIM aggcsmax(16, 3), aggcompmax(16, 3), aggmsmax(16, 3),
aggtsmax(16, 3) 'Maximums
DIM compcsmax(16, 3), compcompmax(16, 3), compmsmax(16, 3),
comptsmax(16, 3) 'Minimums
DIM aggcsavg(16, 3), aggcompavg(16, 3), aggmsavg(16, 3),
aggtsavg(16, 3) 'Averages
DIM compcsavg(16, 3), compcompavg(16, 3), compmsavg(16, 3),
```

```
IF port >= 0 THEN 'Always true; change to restrict statistics
gathering.
   pvtotal = pvtotal + pvtemp
   avgtotal = avgtotal + 1
FOR p = 0 TO 14
FOR t = 1 TO 3
'First put numbers into temporary variable slots.
   aggcstemp = aggcs(p, t)
   aggcomptemp = aggcomp(p, t)
   aggmstemp = aggms(p, t)
   aggtstemp = aggts(p, t)
   compcstemp = compcs(p, t)
   compcompttemp = compcomp(p, t)
   compmstemp = compms(p, t)
   comptstemp = compts(p, t)
'Second compute minimum values
   IF aggcstemp < aggcsmin(p, t) THEN aggcsmin(p, t) = aggcstemp
   IF aggcomptemp < aggcompmin(p, t) THEN aggcompmin(p, t) =
aggcomptemp
   IF aggmstemp < aggmsmin(p, t) THEN aggmsmin(p, t) = aggmstemp
   IF aggtstemp < aggtsmin(p, t) THEN aggtsmin(p, t) = aggtstemp
   IF compcstemp < compcsmin(p, t) THEN compcsmin(p, t) =
compcstemp
   IF compcompttemp < compcompmin(p, t) THEN compcompmin(p, t) =
compcompttemp
   IF compmstemp < compmsmin(p, t) THEN compmsmin(p, t) =
compmstemp
   IF comptstemp < comptsmin(p, t) THEN comptsmin(p, t) =
comptstemp
'Third compute maximum values
   IF aggcstemp > aggcsmax(p, t) THEN aggcsmax(p, t) = aggcstemp
   IF aggcomptemp > aggcompmax(p, t) THEN aggcompmax(p, t) =
aggcomptemp
   IF aggmstemp > aggmsmax(p, t) THEN aggmsmax(p, t) = aggmstemp
   IF aggtstemp > aggtsmax(p, t) THEN aggtsmax(p, t) = aggtstemp
   IF compcstemp > compcsmax(p, t) THEN compcsmax(p, t) =
compcstemp
   IF compcompttemp > compcompmax(p, t) THEN compcompmax(p, t) =
compcompttemp
   IF compmstemp > compmsmax(p, t) THEN compmsmax(p, t) =
compmstemp
   IF comptstemp > comptsmax(p, t) THEN comptsmax(p, t) =
comptstemp
'Fourth compute average values
```

```
comptsavg(16, 3) 'Averages
DIM aggcswtd(16, 3), aggcompwtd(16, 3), aggmswtd(16, 3),
aggtswtd(16, 3) 'Weighted Averages
DIM compcswtd(16, 3), compcompwtd(16, 3), compmswtd(16, 3),
comptswtd(16, 3) 'Weighted Averages

'CONTROL MODULE
CLS
timex = TIMER
   ystart = 1995 'Start year for antitrust analysis.
   yend = 2025 'End year for antitrust analysis.
   cstart = 2002 'Year to start conduct remedies.
   sstart = 2005 'Year to start structural remedies.
GOSUB PVSETUP:
   revstream = 1 '****User chooses revenue stream = 1,2,3,4.
GOSUB READREVENUES: 'Read in Microsoft's revenues by year.
GOSUB READZCOUNT:
'This control module calls the main module 75 times.
FOR cratio = 1 TO 5
   FOR speed = 1 TO 3
      FOR port = 0 TO 4
         GOSUB MAINMODULE:
      NEXT port
   NEXT speed
NEXT cratio
GOSUB PRINTSTATS: 'Print Macro Statistics
PRINT TIMER - timex
END


MAINMODULE:
GOSUB FILENAMES1: 'Assign file name to input & output files.
GOSUB TRANSREAD: 'Read in transitions data.

FOR length = 1 TO 3
   'Tyears = Number of years between transitions.
   '         This program chooses Tyears=3, 5, or 8.
   IF length = 1 THEN tyears = 3
   IF length = 2 THEN tyears = 5
   IF length = 3 THEN tyears = 8
   GOSUB NOREMEDY: 'Compute outcomes for unlawful monopoly path.
   GOSUB LAWFUL: 'Compute outcomes for lawful competitive path.
   GOSUB CONDUCT: 'Compute outcomes for conduct remedy path.
   GOSUB STRUCTURAL: 'Compute outcomes for structural remedy
```

```
paths.
   GOSUB PRINTYEARS: 'Compute and print year data into files.
   GOSUB AGGREGATE: 'Aggregate years for each path.
   GOSUB COMPARE: 'Compare aggregates between paths.
   GOSUB MACROSTATS: 'Compute averages, weighted averages,
minimums, maximums.
   GOSUB PRINTAGGCOMP: 'Print individual aggregates and
comparisons.
   GOSUB PRINTAGGSHORT: 'Print one-page individual aggregates and
comparisons.
'   GOSUB PRINTAGGSUMM: 'Print summary of all aggregates &
comparisons
NEXT length
RETURN
'***** END OF MAIN MODULE *****

PVSETUP:
'Submodule to open file and set initial values
'   for MACROSTATS submodule.
pvfile$ = "c:\basic\ms_sim\PointVal.csv" 'Input Point Values for
weighted averages.
OPEN pvfile$ FOR INPUT AS #21
LINE INPUT #21, temp$
pvtotal = 0
avgtotal = 0
FOR p = 0 TO 14
FOR t = 1 TO 3
'Initialize minimum values at high number.
   aggcsmin(p, t) = 999999999999#
   aggcompmin(p, t) = 999999999999#
   aggmsmin(p, t) = 999999999999#
   aggtsmin(p, t) = 999999999999#
   compcsmin(p, t) = 999999999999#
   compcompmin(p, t) = 999999999999#
   compmsmin(p, t) = 999999999999#
   comptsmin(p, t) = 999999999999#
'Initialize maximum values at low number.
   aggcsmax(p, t) = -999999999999#
   aggcompmax(p, t) = -999999999999#
   aggmsmax(p, t) = -999999999999#
   aggtsmax(p, t) = -999999999999#
   compcsmax(p, t) = -999999999999#
   compcompmax(p, t) = -999999999999#
   compmsmax(p, t) = -999999999999#
```

```
   comptsmax(p, t) = -999999999999#
'Initilize average values at zero.
   aggcsavg(p, t) = 0
   aggcompavg(p, t) = 0
   aggmsavg(p, t) = 0
   aggtsavg(p, t) = 0
   compcsavg(p, t) = 0
   compcompavg(p, t) = 0
   compmsavg(p, t) = 0
   comptsavg(p, t) = 0
'Initialize weighted average values at zero.
   aggcswtd(p, t) = 0
   aggcompwtd(p, t) = 0
   aggmswtd(p, t) = 0
   aggtswtd(p, t) = 0
   compcswtd(p, t) = 0
   compcompwtd(p, t) = 0
   compmswtd(p, t) = 0
   comptswtd(p, t) = 0
NEXT t
NEXT p
RETURN
'***** END OF PVsetup SUBMODULE *****


READREVENUES:
'Read in Microsoft's revenues by year.
'   Revenues should only pertain to the monopoly
'   portions of Microsoft's revenues.
'   Revenues should be converted to real dollars
'   (relative to general prices) prior to input.
'   Future revenues are projections, under the
'   assumption that Microsoft remains a monopoly.
rev$ = "c:\basic\ms_sim\ms_rev.csv" 'Input revenues data.
DIM rev(30), discount(30)
'First read in revenue data.
OPEN rev$ FOR INPUT AS #1
FOR n = 1 TO 5
   LINE INPUT #1, temp$
NEXT n
FOR year = ystart TO yend
   ysub = year - ystart
   INPUT #1, year2, rev1, rev2, rev3, rev4
   IF year2 <> year THEN PRINT "Year mismatch for revenue data:";
```

```
year; year2
   IF revstream = 1 THEN rev(ysub) = rev1
   IF revstream = 2 THEN rev(ysub) = rev2
   IF revstream = 3 THEN rev(ysub) = rev3
   IF revstream = 4 THEN rev(ysub) = rev4
NEXT year
CLOSE #1
'Second compute adjustments to revenue data for computing
aggregates.
'   adjustment uses 7% per annum real interest/discount rate,
'   adjusted to 2002 (cstart) dollars.
adjust = 1
   ysub = (cstart - 1) - ystart
   discount(ysub) = adjust
FOR year = cstart - 2 TO ystart STEP -1
   ysub = year - ystart
   adjust = adjust * 1.07
   discount(ysub) = adjust
NEXT year
adjust = 1
FOR year = cstart TO yend
   ysub = year - ystart
   adjust = adjust / 1.07
   discount(ysub) = adjust
NEXT year
'Third (optional) output adjusted revenue data.
rev2$ = "c:\basic\ms_sim\out\disc_rev.txt"'Output adjusted
revenues data.
OPEN rev2$ FOR OUTPUT AS #1
FOR year = ystart TO yend
   ysub = year - ystart
   PRINT #1, USING "####"; year;
   PRINT #1, USING "#####.######"; rev(ysub);
   PRINT #1, USING "#####.######"; discount(ysub);
   PRINT #1, USING "#####.######"; rev(ysub) * discount(ysub)
NEXT year
CLOSE #1
RETURN
'***** END OF ReadRevenues SUBMODULE *****


READZCOUNT:
'Submodule to read in the relationship between
'   zcount and z from previous program, "MS5TranR.bas".
```

```
DIM zpath(14)
zcount$ = "c:\basic\ms_sim\out\zcount.txt" 'Input zcount data.
OPEN zcount$ FOR INPUT AS #1
   LINE INPUT #1, temp$
FOR zcount = 0 TO 9
   INPUT #1, zcount2, zpath(zcount + 4)
   IF zcount2 <> zcount THEN PRINT "Zcount mismatch"; zcount;
zcount2
NEXT zcount
CLOSE #1
RETURN
'***** END OF ReadZcount SUBMODULE *****


FILENAMES1:
tran1$ = "c:\basic\ms_sim\out\tran1000.txt" 'Input 1-firm
transition summary
tran2$ = "c:\basic\ms_sim\out\tran2000.txt" 'Input 2-firm
transition summary
tran3$ = "c:\basic\ms_sim\out\tran3000.txt" 'Input 3-firm
transition summary
tran4$ = "c:\basic\ms_sim\out\tran4000.txt" 'Input 4-firm
transition summary
tran5$ = "c:\basic\ms_sim\out\tran5000.txt" 'Input 5-firm
transition summary
trpm0$ = "c:\basic\ms_sim\out\trpm0000.txt" 'Input z=0.0 RPM
transition summary
trpm1$ = "c:\basic\ms_sim\out\trpm1000.txt" 'Input z=0.1 RPM
transition summary
trpm2$ = "c:\basic\ms_sim\out\trpm2000.txt" 'Input z=0.2 RPM
transition summary
trpm3$ = "c:\basic\ms_sim\out\trpm3000.txt" 'Input z=0.3 RPM
transition summary
trpm4$ = "c:\basic\ms_sim\out\trpm4000.txt" 'Input z=0.4 RPM
transition summary
trpm5$ = "c:\basic\ms_sim\out\trpm5000.txt" 'Input z=0.5 RPM
transition summary
trpm6$ = "c:\basic\ms_sim\out\trpm6000.txt" 'Input z=0.6 RPM
transition summary
trpm7$ = "c:\basic\ms_sim\out\trpm7000.txt" 'Input z=0.7 RPM
transition summary
trpm8$ = "c:\basic\ms_sim\out\trpm8000.txt" 'Input z=0.8 RPM
transition summary
trpm9$ = "c:\basic\ms_sim\out\trpm9000.txt" 'Input z=0.9 RPM
```

```
transition summary
year3$ = "c:\basic\ms_sim\out\year0003.txt" 'Output 3-year
factors by year
year5$ = "c:\basic\ms_sim\out\year0005.txt" 'Output 5-year
factors by year
year8$ = "c:\basic\ms_sim\out\year0008.txt" 'Output 8-year
factors by year
aggr3$ = "c:\basic\ms_sim\out\aggr0003.txt" 'Output aggregate 3-
year factors
aggr5$ = "c:\basic\ms_sim\out\aggr0005.txt" 'Output aggregate 5-
year factors
aggr8$ = "c:\basic\ms_sim\out\aggr0008.txt" 'Output aggregate 8-
year factors
aggc3$ = "c:\basic\ms_sim\out\aggc0003.txt" 'One-page aggregate
3-year factors
aggc5$ = "c:\basic\ms_sim\out\aggc0005.txt" 'One-page aggregate
5-year factors
aggc8$ = "c:\basic\ms_sim\out\aggc0008.txt" 'One-page aggregate
8-year factors
IF cratio = 1 THEN crt$ = "1"
IF cratio = 2 THEN crt$ = "2"
IF cratio = 3 THEN crt$ = "3"
IF cratio = 4 THEN crt$ = "4"
IF cratio = 5 THEN crt$ = "5"
IF speed = 1 THEN sp$ = "1"
IF speed = 2 THEN sp$ = "2"
IF speed = 3 THEN sp$ = "3"
IF port = 0 THEN prt$ = "0"
IF port = 1 THEN prt$ = "1"
IF port = 2 THEN prt$ = "2"
IF port = 3 THEN prt$ = "3"
IF port = 4 THEN prt$ = "4"
replace$ = crt$ + sp$ + prt$
MID$(tran1$, 26, 3) = replace$
MID$(tran2$, 26, 3) = replace$
MID$(tran3$, 26, 3) = replace$
MID$(tran4$, 26, 3) = replace$
MID$(tran5$, 26, 3) = replace$
MID$(trpm0$, 26, 3) = replace$
MID$(trpm1$, 26, 3) = replace$
MID$(trpm2$, 26, 3) = replace$
MID$(trpm3$, 26, 3) = replace$
MID$(trpm4$, 26, 3) = replace$
MID$(trpm5$, 26, 3) = replace$
```

```
MID$(trpm6$, 26, 3) = replace$
MID$(trpm7$, 26, 3) = replace$
MID$(trpm8$, 26, 3) = replace$
MID$(trpm9$, 26, 3) = replace$
MID$(year3$, 25, 3) = replace$
MID$(year5$, 25, 3) = replace$
MID$(year8$, 25, 3) = replace$
MID$(aggr3$, 25, 3) = replace$
MID$(aggr5$, 25, 3) = replace$
MID$(aggr8$, 25, 3) = replace$
MID$(aggc3$, 25, 3) = replace$
MID$(aggc5$, 25, 3) = replace$
MID$(aggc8$, 25, 3) = replace$
PRINT replace$; " ";
RETURN
'***** END OF FileNames1 SUBMODULE *****


TRANSREAD:
'Submodule to read in transitions data for time paths:
'   1) Microsoft starts as monopoly.
'   2) Microsoft starts as two APM firms.
'   3) Microsoft starts as three APM firms.
'   4-13) Microsoft starts as two RPM firms (z varies).
FOR p = 1 TO 13
IF p = 1 THEN filein$ = tran1$
IF p = 2 THEN filein$ = tran2$
IF p = 3 THEN filein$ = tran3$
IF p = 4 THEN filein$ = trpm0$
IF p = 5 THEN filein$ = trpm1$
IF p = 6 THEN filein$ = trpm2$
IF p = 7 THEN filein$ = trpm3$
IF p = 8 THEN filein$ = trpm4$
IF p = 9 THEN filein$ = trpm5$
IF p = 10 THEN filein$ = trpm6$
IF p = 11 THEN filein$ = trpm7$
IF p = 12 THEN filein$ = trpm8$
IF p = 13 THEN filein$ = trpm9$
OPEN filein$ FOR INPUT AS #30
LINE INPUT #30, temp$
DIM cstot(15, 11), pimstot(15, 11), picomptot(15, 11), herf(15,
11)
FOR iter = 0 TO 10
   INPUT #30, iter2, cstot(p, iter), pimstot(p, iter),
```

```
picomptot(p, iter)
   INPUT #30, mktshare1, mktshare2, herf(p, iter), firmnum1
     IF iter <> iter2 THEN PRINT "Iteration mismatch #", p, iter,
iter1
NEXT iter
CLOSE #30
cstot(p, 11) = 0
pimstot(p, 11) = 0
picomptot(p, 11) = 0
herf(p, 11) = 0
NEXT p
RETURN
'***** END OF TransRead SUBMODULE *****


NOREMEDY:
'Submodule to compute outcomes for unlawful monopoly path,
'   where Microsoft begins as monopoly in 1995,
'   and continues as a monopoly through 2025.  (Path p=0)
DIM csy(30, 14), pimsy(30, 14), picompy(30, 14), hhi(30, 14)
FOR year = ystart TO yend
   ysub = year - ystart
   tsub = 0
   csy(ysub, 0) = cstot(1, tsub)
   pimsy(ysub, 0) = pimstot(1, tsub)
   picompy(ysub, 0) = picomptot(1, tsub)
   hhi(ysub, 0) = herf(1, tsub)
NEXT year
RETURN
'***** END OF NoRemedy SUBMODULE *****


LAWFUL:
'Submodule to compute outcomes for lawful competitive path,
'   where Microsoft begins as monopoly in 1995,
'   but competitive conditions exist whereby
'   competitors are free to enter.  (Path p=14)
plaw = 14
FOR year = ystart TO yend
   ysub = year - ystart
   tsub = ysub / tyears
   tsub1 = INT(tsub)
   tsub2 = tsub1 + 1
   tfrac1 = tsub - tsub1
```

```
   tfrac2 = tsub2 - tsub
   csy(ysub, plaw) = cstot(1, tsub1) * tfrac2 + cstot(1, tsub2) *
tfrac1
   pimsy(ysub, plaw) = pimstot(1, tsub1) * tfrac2 + pimstot(1,
tsub2) * tfrac1
   picompy(ysub, plaw) = picomptot(1, tsub1) * tfrac2 +
picomptot(1, tsub2) * tfrac1
   hhi(ysub, plaw) = herf(1, tsub1) * tfrac2 + herf(1, tsub2) *
tfrac1
NEXT year
RETURN
'***** END OF Lawful SUBMODULE *****


CONDUCT:
'Submodule to compute outcomes for conduct remedy path,
'   where Microsoft exists as a monopoly in 1995-2001,
'   but competitive conditions begin in 2002 (cstart)
'   whereby competitors are free to enter.  (Path p=1)
FOR year = ystart TO cstart - 1
   ysub = year - ystart
   tsub = 0
   csy(ysub, 1) = cstot(1, tsub)
   pimsy(ysub, 1) = pimstot(1, tsub)
   picompy(ysub, 1) = picomptot(1, tsub)
   hhi(ysub, 1) = herf(1, tsub)
NEXT year
cstart1 = cstart - 1
FOR year = cstart TO yend
   ysub = year - ystart
   tsub = (year - cstart1) / tyears
   tsub1 = INT(tsub)
   tsub2 = tsub1 + 1
   tfrac1 = tsub - tsub1
   tfrac2 = tsub2 - tsub
   csy(ysub, 1) = cstot(1, tsub1) * tfrac2 + cstot(1, tsub2) *
tfrac1
   pimsy(ysub, 1) = pimstot(1, tsub1) * tfrac2 + pimstot(1,
tsub2) * tfrac1
   picompy(ysub, 1) = picomptot(1, tsub1) * tfrac2 + picomptot(1,
tsub2) * tfrac1
   hhi(ysub, 1) = herf(1, tsub1) * tfrac2 + herf(1, tsub2) *
tfrac1
NEXT year
```

```
RETURN
'***** END OF Conduct SUBMODULE *****


STRUCTURAL:
'Submodule to compute outcomes for structural remedy paths,
'   where Microsoft exists as a monopoly in 1995-2004,
'   but Microsoft is divided into 2 or 3 firms in 2005
'   and competitive conditions exist thereafter.
'   Path p=2, Microsoft divided into 2 APM firms.
'   Path p=3, Microsoft divided into 3 APM firms.
'   Paths p=4 thru p=13, Microsoft divided into 2 RPM firms,
'   where z is allowed to vary.
FOR p = 2 TO 13
FOR year = ystart TO sstart - 1
   ysub = year - ystart
   tsub = 0
   csy(ysub, p) = cstot(1, tsub)
   pimsy(ysub, p) = pimstot(1, tsub)
   picompy(ysub, p) = picomptot(1, tsub)
   hhi(ysub, p) = herf(1, tsub)
NEXT year
FOR year = sstart TO yend
   ysub = year - ystart
   tsub = (year - sstart) / tyears
   tsub1 = INT(tsub)
   tsub2 = tsub1 + 1
   tfrac1 = tsub - tsub1
   tfrac2 = tsub2 - tsub
   csy(ysub, p) = cstot(p, tsub1) * tfrac2 + cstot(p, tsub2) *
tfrac1
   pimsy(ysub, p) = pimstot(p, tsub1) * tfrac2 + pimstot(p,
tsub2) * tfrac1
   picompy(ysub, p) = picomptot(p, tsub1) * tfrac2 + picomptot(p,
tsub2) * tfrac1
   hhi(ysub, p) = herf(p, tsub1) * tfrac2 + herf(p, tsub2) *
tfrac1
NEXT year
NEXT p
RETURN
'***** END OF Structural SUBMODULE *****


PRINTYEARS:
```

```
'Submodule to compute and print the data by year into files.
'   Computed data consists of consumer surplus (cs), profits for
'   Microsoft (pims), profits for competitors (picomp),
'   and Herfindahl-Hershman Index (HHI).
'   Data is computed for several time paths:
'   No remedy (continued monopoly) path=0;
'   Perfect conduct remedy starting in 2002 (path=1);
'   Structural remedies starting in 2005 (paths=2-13);
'   Lawful path (competitive behavior) since 1995 (path=14).
'First adjust year factors by multiplying with revenue data.
'   The computed year data is expressed in real terms,
'   but is not adjusted for 7% interest/discount rate.
FOR year = ystart TO yend
   ysub = year - ystart
   FOR path = 0 TO 14
      csy(ysub, path) = csy(ysub, path) * rev(ysub)
      pimsy(ysub, path) = pimsy(ysub, path) * rev(ysub)
      picompy(ysub, path) = picompy(ysub, path) * rev(ysub)
   NEXT path
NEXT year
'Second (optional) print the year data into files.
IF tyears = 3 THEN OPEN year3$ FOR OUTPUT AS #6
IF tyears = 5 THEN OPEN year5$ FOR OUTPUT AS #6
IF tyears = 8 THEN OPEN year8$ FOR OUTPUT AS #6
FOR year = ystart TO yend
   ysub = year - ystart
   PRINT #6, USING "####"; year;
   FOR path = 0 TO 14
      PRINT #6, USING "#####.##########"; csy(ysub, path);
   NEXT path
   PRINT #6,
NEXT year
   PRINT #6,
FOR year = ystart TO yend
   ysub = year - ystart
   PRINT #6, USING "####"; year;
   FOR path = 0 TO 14
      PRINT #6, USING "#####.##########"; pimsy(ysub, path);
   NEXT path
   PRINT #6,
NEXT year
   PRINT #6,
FOR year = ystart TO yend
   ysub = year - ystart
```

```
    PRINT #6, USING "####"; year;
    FOR path = 0 TO 14
       PRINT #6, USING "#####.##########"; picompy(ysub, path);
    NEXT path
    PRINT #6,
NEXT year
    PRINT #6,
FOR year = ystart TO yend
    ysub = year - ystart
    PRINT #6, USING "####"; year;
    FOR path = 0 TO 14
       tstot = csy(ysub, path) + pimsy(ysub, path) + picompy(ysub,
path)
       PRINT #6, USING "#####.##########"; tstot;
    NEXT path
    PRINT #6,
NEXT year
    PRINT #6,
FOR year = ystart TO yend
    ysub = year - ystart
    PRINT #6, USING "####"; year;
    FOR path = 0 TO 14
       PRINT #6, USING "######.#########"; hhi(ysub, path);
    NEXT path
    PRINT #6,
NEXT year
CLOSE #6
RETURN
'***** END OF PrintYears SUBMODULE *****


AGGREGATE:
'Submodule to aggregate years for each path.
'  Agg..(p,t) is the aggregate for path p, time period t.
'    p=0, no remedy path;
'    p=1, 1-firm conduct remedy path;
'    p=2, 2-firm structural remedy path.
'    p=3, 3-firm structural remedy path.
'    p=4 to p=13, 2-firm RPM structural remedy path.
'    p=14, lawful path;
'    t=1, 1995-2001; t=2, 2002-2025; t=3, 1995-2025.
'  AggCS = Aggregate for consumer surplus.
'  AggComp = Aggregate for non-Microsoft profits.
'  AggMS = Aggregate for Microsoft's profits.
```

```
'  AggTS = Aggregate for total surplus.
'First adjust the year data for 7% discount/interest rate.
FOR year = ystart TO yend
   ysub = year - ystart
   FOR path = 0 TO 14
      csy(ysub, path) = csy(ysub, path) * discount(ysub)
      pimsy(ysub, path) = pimsy(ysub, path) * discount(ysub)
      picompy(ysub, path) = picompy(ysub, path) * discount(ysub)
   NEXT path
NEXT year
'Second aggregate the data for the three time periods.
FOR path = 0 TO 14
      cstemp = 0
      picomptemp = 0
      mstemp = 0
   FOR year = ystart TO cstart - 1
      ysub = year - ystart
      cstemp = cstemp + csy(ysub, path)
      picomptemp = picomptemp + picompy(ysub, path)
      mstemp = mstemp + pimsy(ysub, path)
   NEXT year
      aggcs(path, 1) = cstemp
      aggcomp(path, 1) = picomptemp
      aggms(path, 1) = mstemp
      aggts(path, 1) = cstemp + picomptemp + mstemp
      cstemp = 0
      picomptemp = 0
      mstemp = 0
   FOR year = cstart TO yend
      ysub = year - ystart
      cstemp = cstemp + csy(ysub, path)
      picomptemp = picomptemp + picompy(ysub, path)
      mstemp = mstemp + pimsy(ysub, path)
   NEXT year
      aggcs(path, 2) = cstemp
      aggcomp(path, 2) = picomptemp
      aggms(path, 2) = mstemp
      aggts(path, 2) = cstemp + picomptemp + mstemp
      aggcs(path, 3) = aggcs(path, 1) + aggcs(path, 2)
      aggcomp(path, 3) = aggcomp(path, 1) + aggcomp(path, 2)
      aggms(path, 3) = aggms(path, 1) + aggms(path, 2)
      aggts(path, 3) = aggts(path, 1) + aggts(path, 2)
NEXT path
RETURN
```

```
'***** END OF Aggregate SUBMODULE *****


COMPARE:
'Submodule to compare aggregates between different time paths.
'  Comp..(c,t) is comparison c for time period t.
'    c=0, no remedy path minus lawful competitive path.
'    c=1, 1-firm conduct remedy path minus lawful competitive
path.
'    c=2, 2-firm structural remedy path minus lawful competitive
path.
'    c=3, 3-firm structural remedy path minus lawful competitive
path.
'    c=4, 4-firm structural remedy path minus lawful competitive
path.
'    c=5, 5-firm structural remedy path minus lawful competitive
path.
'    t=1, 1995-2001; t=2, 2002-2025; t=3, 1995-2025;
'  CompCS = Comparison for consumer surplus.
'  CompComp = Comparison non-Microsoft profits.
'  CompMS = Comparison for Microsoft's profits.
'  CompTS = Comparison for total surplus.
FOR c = 0 TO 13
   FOR t = 1 TO 3
      compcs(c, t) = aggcs(c, t) - aggcs(plaw, t)
      compcomp(c, t) = aggcomp(c, t) - aggcomp(plaw, t)
      compms(c, t) = aggms(c, t) - aggms(plaw, t)
      compts(c, t) = aggts(c, t) - aggts(plaw, t)
   NEXT t
NEXT c
RETURN
'***** END OF Compare SUBMODULE *****


MACROSTATS:
'Submodule to compute averages, weighted averages, minimums,
maximums.
INPUT #21, cratio2, speed2, port2, tyears2, pvtemp
   IF cratio <> cratio2 THEN PRINT "Cost-ratio mismatch:";
cratio; cratio2
   IF speed <> speed2 THEN PRINT "Speed mismatch:"; speed; speed2
   IF tyears <> tyears2 THEN PRINT "Tyears mismatch:"; tyears;
tyears2
   IF port <> port2 THEN PRINT "Portion mismatch:"; port; port2
```

```
IF port >= 0 THEN 'Always true; change to restrict statistics
gathering.
   pvtotal = pvtotal + pvtemp
   avgtotal = avgtotal + 1
FOR p = 0 TO 14
FOR t = 1 TO 3
'First put numbers into temporary variable slots.
   aggcstemp = aggcs(p, t)
   aggcomptemp = aggcomp(p, t)
   aggmstemp = aggms(p, t)
   aggtstemp = aggts(p, t)
   compcstemp = compcs(p, t)
   compcompttemp = compcomp(p, t)
   compmstemp = compms(p, t)
   comptstemp = compts(p, t)
'Second compute minimum values
   IF aggcstemp < aggcsmin(p, t) THEN aggcsmin(p, t) = aggcstemp
   IF aggcomptemp < aggcompmin(p, t) THEN aggcompmin(p, t) =
aggcomptemp
   IF aggmstemp < aggmsmin(p, t) THEN aggmsmin(p, t) = aggmstemp
   IF aggtstemp < aggtsmin(p, t) THEN aggtsmin(p, t) = aggtstemp
   IF compcstemp < compcsmin(p, t) THEN compcsmin(p, t) =
compcstemp
   IF compcompttemp < compcompmin(p, t) THEN compcompmin(p, t) =
compcompttemp
   IF compmstemp < compmsmin(p, t) THEN compmsmin(p, t) =
compmstemp
   IF comptstemp < comptsmin(p, t) THEN comptsmin(p, t) =
comptstemp
'Third compute maximum values
   IF aggcstemp > aggcsmax(p, t) THEN aggcsmax(p, t) = aggcstemp
   IF aggcomptemp > aggcompmax(p, t) THEN aggcompmax(p, t) =
aggcomptemp
   IF aggmstemp > aggmsmax(p, t) THEN aggmsmax(p, t) = aggmstemp
   IF aggtstemp > aggtsmax(p, t) THEN aggtsmax(p, t) = aggtstemp
   IF compcstemp > compcsmax(p, t) THEN compcsmax(p, t) =
compcstemp
   IF compcompttemp > compcompmax(p, t) THEN compcompmax(p, t) =
compcompttemp
   IF compmstemp > compmsmax(p, t) THEN compmsmax(p, t) =
compmstemp
   IF comptstemp > comptsmax(p, t) THEN comptsmax(p, t) =
comptstemp
'Fourth compute average values
```

```
    aggcsavg(p, t) = aggcsavg(p, t) + aggcstemp
    aggcompavg(p, t) = aggcompavg(p, t) + aggcomptemp
    aggmsavg(p, t) = aggmsavg(p, t) + aggmstemp
    aggtsavg(p, t) = aggtsavg(p, t) + aggtstemp
    compcsavg(p, t) = compcsavg(p, t) + compcstemp
    compcompavg(p, t) = compcompavg(p, t) + compcompttemp
    compmsavg(p, t) = compmsavg(p, t) + compmstemp
    comptsavg(p, t) = comptsavg(p, t) + comptstemp
'Fifth compute weighted average values
    aggcswtd(p, t) = aggcswtd(p, t) + aggcstemp * pvtemp
    aggcompwtd(p, t) = aggcompwtd(p, t) + aggcomptemp * pvtemp
    aggmswtd(p, t) = aggmswtd(p, t) + aggmstemp * pvtemp
    aggtswtd(p, t) = aggtswtd(p, t) + aggtstemp * pvtemp
    compcswtd(p, t) = compcswtd(p, t) + compcstemp * pvtemp
    compcompwtd(p, t) = compcompwtd(p, t) + compcompttemp * pvtemp
    compmswtd(p, t) = compmswtd(p, t) + compmstemp * pvtemp
    comptswtd(p, t) = comptswtd(p, t) + comptstemp * pvtemp
NEXT t
NEXT p
END IF
RETURN
'***** END OF MacroStats SUBMODULE *****


PRINTAGGCOMP:
'Submodule to print aggregates and comparisons.
IF tyears = 3 THEN OPEN aggr3$ FOR OUTPUT AS #7
IF tyears = 5 THEN OPEN aggr5$ FOR OUTPUT AS #7
IF tyears = 8 THEN OPEN aggr8$ FOR OUTPUT AS #7
'First print aggregates.
FOR path = 0 TO 14
   IF path = 0 THEN PRINT #7, "          Aggregates   for
No Remedy    Path:"
   IF path = 1 THEN PRINT #7, "          Aggregates   for
Conduct      Remedy:"
   IF path = 2 THEN PRINT #7, "          Aggregates   for
APM,2-firms  Remedy:"
   IF path = 3 THEN PRINT #7, "          Aggregates   for
APM,3-firms  Remedy:"
   IF path >= 4 AND path <= 13 THEN
      PRINT #7, "          Aggregates   for          RPM,z=";
      PRINT #7, USING "#.###"; zpath(path);
      PRINT #7, "  Remedy:"
      END IF
```

```
   IF path = 14 THEN PRINT #7, "          Aggregates   for
Lawful       Path:"
   PRINT #7, " Time    "; "       CS      "; "   nonMSpi    "; "
MSpi     "; "       TS      "
   FOR t = 1 TO 3
      IF t = 1 THEN PRINT #7, "Past:    ";
      IF t = 2 THEN PRINT #7, "Future:  ";
      IF t = 3 THEN PRINT #7, "Total:   ";
      PRINT #7, USING "#####.#######"; aggcs(path, t);
aggcomp(path, t); aggms(path, t); aggts(path, t)
   NEXT t
   PRINT #7,
NEXT path
'Second print comparisons.
FOR c = 0 TO 13
   IF c = 0 THEN PRINT #7, "          Comparing    No Remedy
minus        LawfulPath:"
   IF c = 1 THEN PRINT #7, "          Comparing    Conduct
minus        LawfulPath:"
   IF c = 2 THEN PRINT #7, "          Comparing    APM,2-firms
minus        LawfulPath:"
   IF c = 3 THEN PRINT #7, "          Comparing    APM,3-firms
minus        LawfulPath:"
   IF c >= 4 AND c <= 13 THEN
      PRINT #7, "          Comparing    RPM,z=";
      PRINT #7, USING "#.###"; zpath(c);
      PRINT #7, "  minus        LawfulPath:"
      END IF
   PRINT #7, " Time    "; "       CS      "; "   nonMSpi    "; "
MSpi     "; "       TS      "
   FOR t = 1 TO 3
      IF t = 1 THEN PRINT #7, "Past:    ";
      IF t = 2 THEN PRINT #7, "Future:  ";
      IF t = 3 THEN PRINT #7, "Total:   ";
      PRINT #7, USING "#####.#######"; compcs(c, t); compcomp(c,
t); compms(c, t); compts(c, t)
   NEXT t
   PRINT #7,
NEXT c
CLOSE #7
RETURN
'***** END OF PrintAggComp SUBMODULE *****
```

```
PRINTAGGSHORT:
'Submodule to print one-page summary of
'   aggregates and comparisons.
IF tyears = 3 THEN OPEN aggc3$ FOR OUTPUT AS #7
IF tyears = 5 THEN OPEN aggc5$ FOR OUTPUT AS #7
IF tyears = 8 THEN OPEN aggc8$ FOR OUTPUT AS #7
'First print totals for alternative remedies.
   PRINT #7, "               Total        Aggregates   Alternative
Remedies:"
   PRINT #7, "  Remedy     "; "      CS     "; "    nonMSpi  "; "
   MSpi    "; "      TS     "
FOR path = 0 TO 14
   IF path = 0 THEN PRINT #7, "No-Remedy:   ";
   IF path = 1 THEN GOSUB AGGSUB:
   IF path = 1 THEN path = 2
   IF path = 2 THEN PRINT #7, "APM,2-firms: ";
   IF path = 3 THEN PRINT #7, "APM,3-firms: ";
   IF path >= 4 AND path <= 13 THEN
      PRINT #7, "RPM,z=";
      PRINT #7, USING "#.###"; zpath(path);
      PRINT #7, ": ";
      END IF
   IF path = 14 THEN PRINT #7, "Lawful Path: ";
   PRINT #7, USING "#####.#######"; aggcs(path, 3); aggcomp(path,
3); aggms(path, 3); aggts(path, 3)
NEXT path
PRINT #7,
'Second print comparisons.
   PRINT #7, "               Comparing    Remedies     minus
Lawful Path:"
   PRINT #7, "  Remedy     "; "      CS     "; "    nonMSpi  "; "
   MSpi    "; "      TS     "
FOR c = 0 TO 13
   IF c = 0 THEN PRINT #7, "No-Remedy:   ";
   IF c = 1 THEN GOSUB COMPSUB:
   IF c = 1 THEN c = 2
   IF c = 2 THEN PRINT #7, "APM,2-firms: ";
   IF c = 3 THEN PRINT #7, "APM,3-firms: ";
   IF c >= 4 AND c <= 13 THEN
      PRINT #7, "RPM,z=";
      PRINT #7, USING "#.###"; zpath(c);
      PRINT #7, ": ";
      END IF
   PRINT #7, USING "#####.#######"; compcs(c, 3); compcomp(c, 3);
```

```
compms(c, 3); compts(c, 3)
NEXT c
CLOSE #7
RETURN
'***** END OF PrintAggShort SUBMODULE *****


AGGSUB:
'Submodule of PRINTAGGSHORT Submodule,
'   to print out variations on conduct remedy.
   temp0cs = aggcs(0, 3)
   temp0comp = aggcomp(0, 3)
   temp0ms = aggms(0, 3)
   temp0ts = aggts(0, 3)
   temp1cs = aggcs(1, 3)
   temp1comp = aggcomp(1, 3)
   temp1ms = aggms(1, 3)
   temp1ts = aggts(1, 3)
   temp2cs = aggcs(2, 3)
   temp2comp = aggcomp(2, 3)
   temp2ms = aggms(2, 3)
   temp2ts = aggts(2, 3)
GOSUB PRINTSUB:
RETURN
'***** END OF AggSub SUBMODULE *****


COMPSUB:
'Submodule of PRINTAGGSHORT Submodule,
'   to print out variations on conduct remedy.
   temp0cs = compcs(0, 3)
   temp0comp = compcomp(0, 3)
   temp0ms = compms(0, 3)
   temp0ts = compts(0, 3)
   temp1cs = compcs(1, 3)
   temp1comp = compcomp(1, 3)
   temp1ms = compms(1, 3)
   temp1ts = compts(1, 3)
   temp2cs = compcs(2, 3)
   temp2comp = compcomp(2, 3)
   temp2ms = compms(2, 3)
   temp2ts = compts(2, 3)
GOSUB PRINTSUB:
RETURN
```

```
'***** END OF CompSub SUBMODULE *****


PRINTSUB:
'Submodule of two submodules of the PRINTAGGSHORT
'   submodule, to print variations on conduct remedy.
'Compute and print 20% effective conduct remedy.
   PRINT #7, " 20% Conduct:";
   PRINT #7, USING "#####.#######"; temp0cs * .8 + temp1cs * .2;
   PRINT #7, USING "#####.#######"; temp0comp * .8 + temp1comp *
.2;
   PRINT #7, USING "#####.#######"; temp0ms * .8 + temp1ms * .2;
   PRINT #7, USING "#####.#######"; temp0ts * .8 + temp1ts * .2
'Compute and print 40% effective conduct remedy.
   PRINT #7, " 40% Conduct:";
   PRINT #7, USING "#####.#######"; temp0cs * .6 + temp1cs * .4;
   PRINT #7, USING "#####.#######"; temp0comp * .6 + temp1comp *
.4;
   PRINT #7, USING "#####.#######"; temp0ms * .6 + temp1ms * .4;
   PRINT #7, USING "#####.#######"; temp0ts * .6 + temp1ts * .4
'Compute and print 60% effective conduct remedy.
   PRINT #7, " 60% Conduct:";
   PRINT #7, USING "#####.#######"; temp0cs * .4 + temp1cs * .6;
   PRINT #7, USING "#####.#######"; temp0comp * .4 + temp1comp *
.6;
   PRINT #7, USING "#####.#######"; temp0ms * .4 + temp1ms * .6;
   PRINT #7, USING "#####.#######"; temp0ts * .4 + temp1ts * .6
'Compute and print 80% effective conduct remedy.
   PRINT #7, " 80% Conduct:";
   PRINT #7, USING "#####.#######"; temp0cs * .2 + temp1cs * .8;
   PRINT #7, USING "#####.#######"; temp0comp * .2 + temp1comp *
.8;
   PRINT #7, USING "#####.#######"; temp0ms * .2 + temp1ms * .8;
   PRINT #7, USING "#####.#######"; temp0ts * .2 + temp1ts * .8
'Compute and print 100% effective conduct remedy.
   PRINT #7, "100% Conduct:";
   PRINT #7, USING "#####.#######"; temp1cs;
   PRINT #7, USING "#####.#######"; temp1comp;
   PRINT #7, USING "#####.#######"; temp1ms;
   PRINT #7, USING "#####.#######"; temp1ts
'Compute and print the two-monopolies structural remedy.
   PRINT #7, "2-Monopolies:";
   PRINT #7, USING "#####.#######"; temp2cs / 3 + temp1cs * 2 /
3;
```

```
   PRINT #7, USING "#####.#######"; temp2comp / 3 + temp1comp * 2
/ 3;
   PRINT #7, USING "#####.#######"; temp2ms / 3 + temp1ms * 2 /
3;
   PRINT #7, USING "#####.#######"; temp2ts / 3 + temp1ts * 2 / 3
RETURN
'***** END OF PrintSub SUBMODULE *****


PRINTSTATS:
'Submodule to print averages, weighted averages, minimums,
maximums.
CLOSE #21
'First print out minimums.
MID$(aggr8$, 25, 3) = "MIN"
MID$(aggc8$, 25, 3) = "MIN"
FOR p = 0 TO 14
FOR t = 1 TO 3
   aggcs(p, t) = aggcsmin(p, t)
   aggcomp(p, t) = aggcompmin(p, t)
   aggms(p, t) = aggmsmin(p, t)
   aggts(p, t) = aggtsmin(p, t)
   compcs(p, t) = compcsmin(p, t)
   compcomp(p, t) = compcompmin(p, t)
   compms(p, t) = compmsmin(p, t)
   compts(p, t) = comptsmin(p, t)
NEXT t
NEXT p
GOSUB PRINTAGGCOMP:
GOSUB PRINTAGGSHORT:
'Second print out maximums.
MID$(aggr8$, 25, 3) = "MAX"
MID$(aggc8$, 25, 3) = "MAX"
FOR p = 0 TO 14
FOR t = 1 TO 3
   aggcs(p, t) = aggcsmax(p, t)
   aggcomp(p, t) = aggcompmax(p, t)
   aggms(p, t) = aggmsmax(p, t)
   aggts(p, t) = aggtsmax(p, t)
   compcs(p, t) = compcsmax(p, t)
   compcomp(p, t) = compcompmax(p, t)
   compms(p, t) = compmsmax(p, t)
   compts(p, t) = comptsmax(p, t)
NEXT t
```

```
NEXT p
GOSUB PRINTAGGCOMP:
GOSUB PRINTAGGSHORT:
MID$(aggr8$, 25, 3) = "AVG"
MID$(aggc8$, 25, 3) = "AVG"
FOR p = 0 TO 14
FOR t = 1 TO 3
   aggcs(p, t) = aggcsavg(p, t) / avgtotal
   aggcomp(p, t) = aggcompavg(p, t) / avgtotal
   aggms(p, t) = aggmsavg(p, t) / avgtotal
   aggts(p, t) = aggtsavg(p, t) / avgtotal
   compcs(p, t) = compcsavg(p, t) / avgtotal
   compcomp(p, t) = compcompavg(p, t) / avgtotal
   compms(p, t) = compmsavg(p, t) / avgtotal
   compts(p, t) = comptsavg(p, t) / avgtotal
NEXT t
NEXT p
GOSUB PRINTAGGCOMP:
GOSUB PRINTAGGSHORT:
'Fourth print out weighted averages.
MID$(aggr8$, 25, 3) = "WTD"
MID$(aggc8$, 25, 3) = "WTD"
FOR p = 0 TO 14
FOR t = 1 TO 3
   aggcs(p, t) = aggcswtd(p, t) / pvtotal
   aggcomp(p, t) = aggcompwtd(p, t) / pvtotal
   aggms(p, t) = aggmswtd(p, t) / pvtotal
   aggts(p, t) = aggtswtd(p, t) / pvtotal
   compcs(p, t) = compcswtd(p, t) / pvtotal
   compcomp(p, t) = compcompwtd(p, t) / pvtotal
   compms(p, t) = compmswtd(p, t) / pvtotal
   compts(p, t) = comptswtd(p, t) / pvtotal
NEXT t
NEXT p
GOSUB PRINTAGGCOMP:
GOSUB PRINTAGGSHORT:
RETURN
'***** END OF PrintStats SUBMODULE *****

'**********END OF Program "MS6Summ.bas".**********

'**********LAST OF SERIES OF SIX PROGRAMS**********
```

Attachment R.

Contents of File "MS_Rev.csv".
The "MS_Rev.csv" file is a needed input file for the "MS6Summ.bas" computer program.

```
Microsoft Corporation,,,,
"Real Annual Revenue, 2001 dollars (billions).",,,,
,,,,"Platforms,"
Calendar,Desktop,Platforms &,Platforms &,Applications
Year,Platforms,Enterprise,Applications,& Enterprise
1995,3.0035316,4.207892342,6.855180159,8.059540901
1996,3.727131393,5.347349902,8.460443423,10.08066193
1997,5.035883238,7.458570139,11.21720468,13.63989158
1998,6.454595209,9.391381895,14.2045433,17.14132999
1999,7.693463232,12.21087139,17.14963014,21.6670383
2000,8.186611784,13.1922708,17.72984147,22.73550048
2001,7.2043035,11.34811009,16.7864329,20.93023949
2002,9.14247463,14.95519357,19.79287211,25.60559105
2003,10.58883605,17.7114904,22.8211218,29.94377615
2004,12.00140966,20.45382314,25.77105291,34.22346639
2005,13.36456237,23.13621511,28.61300897,38.38466171
2006,14.67011841,25.72877347,31.33233776,42.39099283
2007,15.91566918,28.21539046,33.92583204,46.22555332
2008,17.10294472,30.59079228,36.39838725,49.88623481
2009,18.23641933,32.85759662,38.760186,53.38136329
2010,19.3222093,35.02373565,41.02449912,56.72602548
2011,20.36725465,37.10038404,43.20607024,59.93919963
2012,21.3787453,39.10039929,45.31999424,63.04164823
2013,22.36374177,41.03721389,47.38098491,66.05445702
2014,23.32894261,42.92409405,49.40293308,68.99808453
2015,24.28055711,44.77367791,51.39867211,71.89179291
2016,25.22425072,46.59771715,53.37988484,74.75335127
2017,26.1651381,48.40695999,55.35710303,77.59892492
2018,27.107806,50.21112823,57.33976344,80.44308567
2019,28.05635302,52.01895334,59.33629582,83.29889613
2020,29.01443792,53.83824715,61.35422596,86.17803519
2021,29.98533062,55.6759901,63.40028299,89.09094247
2022,30.97196248,57.5384259,65.48050406,92.04696748
2023,31.97697372,59.43115563,67.60033258,95.05451449
2024,33.002757,61.35922702,69.76470794,98.12117797
2025,34.0514965,63.32721672,71.97814598,101.2538662
2026,35.1252027,65.3393044,74.24481019,104.4589119
2027,36.22574276,67.39933867,76.56857413,107.74217
2028,37.35486715,69.51089506,78.95307569,111.1091036
2029,38.51423258,71.67732649,81.40176416,114.5648581
2030,39.70542191,73.90180714,83.91794075,118.114326
```

Contents of File "PointVal.csv".
The "PointVal.csv" file is a needed input file for the "MS6Summ.bas" computer program.

```
Cost-ratio,Speed,Portion,T-years,Point Values
1,1,0,3,1
1,1,0,5,1
1,1,0,8,1
1,1,1,3,2
1,1,1,5,2
1,1,1,8,2
1,1,2,3,2
1,1,2,5,2
1,1,2,8,2
1,1,3,3,2
1,1,3,5,2
1,1,3,8,2
1,1,4,3,1
1,1,4,5,1
1,1,4,8,1
1,2,0,3,1
1,2,0,5,1
1,2,0,8,1
1,2,1,3,2
1,2,1,5,2
1,2,1,8,2
1,2,2,3,2
1,2,2,5,2
1,2,2,8,2
1,2,3,3,2
1,2,3,5,2
1,2,3,8,2
1,2,4,3,1
1,2,4,5,1
1,2,4,8,1
1,3,0,3,1
1,3,0,5,1
1,3,0,8,1
1,3,1,3,2
1,3,1,5,2
1,3,1,8,2
1,3,2,3,2
1,3,2,5,2
1,3,2,8,2
1,3,3,3,2
1,3,3,5,2
1,3,3,8,2
1,3,4,3,1
1,3,4,5,1
1,3,4,8,1
```

2,1,0,3,1
2,1,0,5,1
2,1,0,8,1
2,1,1,3,2
2,1,1,5,2
2,1,1,8,2
2,1,2,3,2
2,1,2,5,2
2,1,2,8,2
2,1,3,3,2
2,1,3,5,2
2,1,3,8,2
2,1,4,3,1
2,1,4,5,1
2,1,4,8,1
2,2,0,3,1
2,2,0,5,1
2,2,0,8,1
2,2,1,3,2
2,2,1,5,2
2,2,1,8,2
2,2,2,3,2
2,2,2,5,2
2,2,2,8,2
2,2,3,3,2
2,2,3,5,2
2,2,3,8,2
2,2,4,3,1
2,2,4,5,1
2,2,4,8,1
2,3,0,3,1
2,3,0,5,1
2,3,0,8,1
2,3,1,3,2
2,3,1,5,2
2,3,1,8,2
2,3,2,3,2
2,3,2,5,2
2,3,2,8,2
2,3,3,3,2
2,3,3,5,2
2,3,3,8,2
2,3,4,3,1
2,3,4,5,1
2,3,4,8,1

3,1,0,3,2
3,1,0,5,2
3,1,0,8,2
3,1,1,3,4
3,1,1,5,4
3,1,1,8,4
3,1,2,3,4
3,1,2,5,4
3,1,2,8,4
3,1,3,3,4
3,1,3,5,4
3,1,3,8,4
3,1,4,3,2
3,1,4,5,2
3,1,4,8,2
3,2,0,3,2
3,2,0,5,2
3,2,0,8,2
3,2,1,3,4
3,2,1,5,4
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Review of Industrial Organization **11**: 533–550, 1996.
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Using Relative Profit Incentives to Prevent Collusion

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Abstract. This paper describes a new economic method for preventing oligopoly collusion. The method eliminates incentives for collusion by making managerial compensation depend on relative profits rather than absolute profits. This alteration of managerial incentives sets up a zero-sum game among the firms in an industry, yielding the result that firms no longer have incentive to collude, either actually or tacitly, with regard to prices or outputs. The method also ameliorates the imperfectly competitive outcomes which can result from even noncooperative oligopoly interactions.

Key words: Oligopoly, collusion, relative profits, zero-sum game, managerial incentives.

Introduction

The purpose of this paper is to present an alternative method for preventing collusion.[1] The method eliminates incentives for both actual and tacit collusion, and ameliorates the imperfectly competitive outcomes which can result from even noncooperative oligopoly interactions. The method prevents exploitation of oligopoly power, but is not a general cure for the market power problems of either strict monopoly or monopolistic competition.

Section I introduces and verbally describes the basic method of providing relative profit maximizing incentives for owners and managers of business firms. Section II reviews some related literature. Section III illustrates the method using a particular mathematical example. Section IV discusses some practical concerns related to implementing the method. Section V focuses on how firm owners can be prevented from making management stress absolute profits over relative profits. Section VI concludes. Three mathematical appendices derive: (A) the optimal weighting of rival firms' profits under a relative profit incentive scheme; (B) short-run equilibrium; and (C) Bertrand equilibrium for differentiated products.

* The author would like to thank numerous individuals for their comments on previous versions of this paper.

[1] NOTICE OF PATENT PENDING: This paper describes a method of economic regulation for preventing collusion upon which the author and inventor has applied for a patent. A patent on this invention, if such should be granted, would only restrict actual use of the described invention; it would not restrict in any way the verbal or written discussion, description, or criticism of that invention.

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I. Basic Method

In an industry structure with only a few firms, collusion is a serious possibility, even when it is illegal. Tacit collusion, which does not require illegal communication among conspirators, can also occur.

The basic concept which underlies this proposed method is the perception that causing managers of firms to participate in a zero-sum game, or its equivalent or near-equivalent, will hinder or prevent cooperation or collusion among the managers of different firms. In a zero-sum game it is possible for one firm's manager to gain only if another firm's manager loses, since there is only a fixed quantity of rewards to go around. In a nonzero-sum game it is frequently possible for everyone to gain through cooperation (collusion) as opposed to noncooperation, since cooperation may increase the total quantity of rewards available to go around.

A zero-sum game for industry may be instituted by forcing firms as a whole to participate in a zero-sum game and/or by arranging zero-sum compensation arrangements for the managers of different firms. When the goal of firms is maximizing profits, instituting a zero-sum game in profits means that firms are motivated to maximize relative profits rather than absolute profits. That is, firms attempt to maximize the difference of their own firm's absolute profits relative to an average of other firms' absolute profits. Alternatively and equivalently, firms attempt to maximize the difference of their own firm's absolute profits relative to the average absolute profits of a group of competing firms, of which group the firm is a member.

A good way to institute a zero-sum game among firms in an industry is by motivating managers to seek relative profits rather than absolute profits. The usual way to motivate managers to pursue a particular goal is to pay managers in accordance with success in achieving that goal. If the goal is to maximize absolute profits, managers should expect to receive more compensation, the higher profits turn out to be. By altering the rules for managerial compensation in the appropriate way, we can make sure that managers are motivated to maximize relative profits rather than absolute profits.

The key to understanding this method rests upon the seemingly trivial observation that successful collusion increases the absolute profits of firms, but does not increase the relative profits of firms. When firms collusively raise prices, the relative profits of each firm cannot increase on average. Only one of two things can happen: Either (1) absolute profits of each firm rise equally and relative profits of each firm stay the same, or (2) the absolute profits of each firm do not rise equally, in which case some firms gain relative profit and some firms lose relative profit. If the second case holds true, any firm which loses relative profit from the collusive agreement will want to cheat (assuming it seeks relative profit), since it gains relative profit in the short run by cheating and it gains relative profit in the long run by breaking up the collusive agreement. If the first case holds true, no firm gains relative profit by maintaining the collusive agreement in the long run, and every firm gains relative profit by cheating in the short run. In a relative profit

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maximizing industry there is no incentive for all the firms to enter into or maintain any collusive agreement. Competitive behavior must result.

Setting up a zero-sum game in profits does not in any way require placing any cap or limitation on the amount of absolute or relative profit which any individual firm may earn. Rather, there is simply a definitional change in the type of profit which a firm or firm manager is expected to maximize. The main difference between absolute profit maximizing (APM) firms and relative profit maximizing (RPM) firms is that RPM firms are not motivated to collude. In the absence of collusion, absolute profit and relative profit are very similar. RPM firms are just as strongly motivated as APM firms to seek other sources of profit, such as reducing costs of production or improving product quality. RPM firms are not deliberately inefficient nor do they try to slow down technical progress. They merely refuse to collude, even tacitly.

Government is assumed able to observe costs and revenues *ex post*, but is not assumed able to observe either demand curves or cost functions. The proposed regulation is not heavy-handed. Price controls, profit controls, central commands, and the like are no part of the proposal. Under the relative-profit scheme of regulation, firms are perfectly free to try to make as much profit as they can, set whatever prices they wish, sell whatever products they wish, and to enter or exit industries and product lines as they please. Application of the RPM regulatory scheme need not extend beyond those firms which are most likely to collude (i.e., the largest firms within an oligopoly industry). Competitive industries, of course, do not need to be included (though no harm would come if they were).

II. Review of Some Related Literature

Only in Donaldson and Neary (1984) does there first appear a suggestion that the principles of relative profit maximizing might be put to practical use by altering the incentives of firms or managers. Donaldson and Neary suggest that relative profit maximizing managers in a "socialist industry" composed wholly of government-owned firms can achieve efficient outcomes with a minimum of administrative supervision by a central planner. They also prove numerous game theory propositions in this connection. Although they indirectly allude to the anti-collusive features of the incentive scheme, they never directly state this property outright. Consequently, they appear to have overlooked the possibility of extending the scheme to prevent collusion in privately-owned or "capitalist" industries. Also, they appear to impose the unwarranted restriction that each manager must be paid dollar-for-dollar for each dollar of relative profit which a firm earns (p. 102).

Two basic propositions in the Donaldson and Neary (1984) paper are worth special mention. The first is that RPM firms producing multiple or joint products will tend to produce at minimum cost and price efficiently (pp. 104–5, 109–10). This means that the incentive scheme is capable of being applied, not only to single-product firms and industries, but also to multi-product firms and industries.

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Secondly, RPM firms, unlike their APM counterparts, have little or no strategic incentive to increase their market shares in a cost-inefficient manner by installing excess capital (pp. 105, 107–9).

The theoretical suggestion that firms with absolute profit incentives might under certain (presumably rare) circumstances try to behave as if they desired to maximize relative profits appears to have been made as early as 1960. Bishop (1960), describing the alleged "warfare" of oligopolists in the absence of collusion, Shubik and Levitan (1980), describing "beat-the-average" games, and Jones (1980), describing the outcome of a classroom game, each derive first-order conditions for a constant-sum game in relative profits. Jones also derives second-order conditions. Two reasons are suggested for such behavior: (1) Businessmen might be naturally rivalrous, caring more about relative position than absolute position, or (2) businessmen may be carrying out threats in order to elicit more favorable collusive agreements from their rivals in the future. These three works do not suggest any practical application for the mathematical principles of relative profit maximizing.

Although they do not anticipate the present subject matter, several other papers are worth mentioning. Holmstrom (1982) and Aron (1988) explore the use of relative performance evaluations for the quite distinct purpose of attempting more accurate evaluations of managerial performance. Gibbons and Murphy (1990) ask whether, in fact, managers tend to be paid according to relative performance. Fouraker and Siegel (1963) and Vickers (1985) consider relative profit goals and incentives of a different type, namely maximization of the difference between absolute profits of own firm and *total* absolute profits of rival firms, rather than *average* absolute profits of rival firms. Fershtman and Judd (1987) and Sklivas (1987) also consider alternative managerial incentives, but not relative profit incentives. Shleifer (1985) and Tam (1988) describe what may be the best currently known alternatives for regulating oligopoly markets, aside from antitrust enforcement or structural reform. Both of these alternatives require the regulation of prices, whereas the present method does not.

In summary, none of the previous literature suggests that relative performance incentives can be used as a general method for preventing collusion.

III. An Illustrative Example

Let G be some statistic which describes something about a firm. If the firm's managers are rewarded for achieving higher levels of G, then maximizing G will be the firm's goal or objective.

For purposes of this example, assume that there are N ($N \geq 2$) identical firms. Each firm produces a single, homogenous product at a constant marginal cost of C. The market demand is linear, with $P = A - bQ$, where $Q = \Sigma Q_i$ and Q_i is firm output. Assume that each firm pursues an identical goal function, which has a coefficient of unity in own firm profits and a coefficient of W in rival firm profits. The goal function for firm i and rival firm(s) j looks as follows:

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$$\begin{aligned} G_i &= \pi_i + W \sum_{j \neq 1} \pi_j \\ &= \pi_i + W(N-1)\pi_j \\ &= (PQ_i - CQ_i) + W(N-1)(PQ_j - CQ_j) \end{aligned} \tag{1}$$

If $W = 0$, then the firm's goal is simply to maximize its own economic profit. This is the absolute profit maximizing (APM) goal. If $W = 1$, then the firm has a joint profit maximizing (JPM) goal. If all N firms have JPM goals, the industry will surely collude. On the other hand, if $W = -1/(N-1)$, then the firm has a relative profit maximizing (RPM) goal. The RPM goal is calculated by starting with own firm profits and subtracting off a weighted average of the $N-1$ rival firm profits.

If we assume noncooperative behavior and Cournot conjectures, firm i maximizes its goal function by choosing Q_i such that:

$$\begin{aligned} \partial G_i/\partial Q_i &= (P - C) + (\partial P/\partial Q_i)[Q_i + W(N-1)Q_j] = 0 \\ &= (A - bQ_i - b(N-1)Q_j - C) \\ &\quad -b(Q_i + W(N-1)Q_j) = 0 \end{aligned} \tag{2}$$

For a symmetric, noncooperative equilibrium, assume that $Q_n = Q_i = Q_j$. Define $W_M = 1 + W(N-1)$. We can calculate the following quantities, price-cost margins, absolute profits, and goal fulfillments for each firm:

$$\begin{aligned} Q_n &= (A - C)/[b(N + W_M)] \\ P_n - C &= (A - C)W_M/(N + W_M) \\ \pi_n &= (A - C)^2 W_M/[b(N + W_M)^2] \\ G_n &= (A - C)^2 W_M^2/[b(N + W_M)^2] \end{aligned} \tag{3}$$

Now, assume instead that each firm pursues a collusive ("monopoly") equilibrium, in which each firm attempts to maximize its goal function under the assumption that all firms cooperate by setting the same level of output (Q_M) and receiving the same level of profit (π_M). The goal function takes the form:

$$\begin{aligned} G_M &= [1 + W(N-1)]\pi_M \\ &= W_M \pi_M \\ &= W_M(PQ_M - CQ_M) \end{aligned} \tag{4}$$

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When $W > -1/(N-1)$, $W_M > 0$, so that joint goal fulfillment is equivalent to maximizing joint absolute profits. When $W < -1/(N-1)$, $W_M < 0$, joint goal fulfillment requires the minimization of joint absolute profits, or the maximization of joint losses. When $W = -1/(N-1)$, $W_M = 0$, we have a zero-sum game in relative profits. When $W_M = 0$, collusion can in no way improve the sum of relative profits for all N firms, since these must always add to zero. When $W_M = 0$, there is no incentive for all N firms to collude either to raise prices or to lower prices from the prices that would exist in a noncooperative equilibrium.

In what follows, assume that $W \geq -1/(N-1)$, so that $W_M \geq 0$ and joint maximization of absolute profits is a (weakly) plausible goal of collusion. (When $W_M = 0$, firms are collectively no better off, but neither are they collectively worse off, from collusion.) Then the collusive equilibrium has the following solution:

$$\begin{aligned}
\partial G_M/\partial Q_M &= W_M(P-C) + (\partial P/\partial Q_M)W_M Q_M = 0 \\
&= W_M(A - bNQ_M - C) - bNW_M Q_M = 0 \\
Q_M &= (A-C)/[2bN] \\
P_M - C &= (A-C)/2 \\
\pi_M &= (A-C)^2/[4bN] \\
G_M &= (A-C)^2 W_M/[4bN] \qquad (5)
\end{aligned}$$

We now consider the one-period incentive for a firm to cheat on a collusive agreement. This can be calculated under the assumption that a single firm chooses its output to maximize its own goal function, taking as given that rival firms choose the agreed-upon collusive output level:

$$\begin{aligned}
G_C &= \pi_i + W(N-1)\pi_j(Q_j = Q_M) \\
&= (PQ_i - CQ_i) + W(N-1)(PQ_M - CQ_M) \qquad (6)
\end{aligned}$$

This has solution:

$$\begin{aligned}
\partial G_C/\partial Q_i &= (P-C) + (\partial P/\partial Q_i)(Q_i + W(N-1)Q_M) = 0 \\
&= (A - bQ_i - b(N-1)Q_M - C) - b(Q_i + W(N-1)Q_M) = 0 \\
Q_c &= (A-C)(N+2-W_M)/[4bN] \\
P_C - C &= (A-C)(N+W_M)/[4N] \\
\pi_C &= (A-C)^2(N+2-W_M)(N+W_M)/[16bN^2] \\
\pi_j &= (A-C)^2(N+W_M)/[8bN^2] \\
G_C &= (A-C)^2(N+W_M)^2/[16bN^2] \qquad (7)
\end{aligned}$$

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The reward to a firm which colludes in a repeated game with its rivals is:

$$R_M = G_M + \sum_{t=1}^{\infty} G_M/(1+r)^t = G_M + G_M/r \tag{8}$$

The value of r depends not simply on the cost of capital and risk premia, but also includes the probability that collusion may break down, perhaps because of industry changes or government intervention. The length of the time period, t, depends on the time it takes for rivals to discover that cheating has occured, after which collusion breaks down. The shorter the time period needed to detect cheating, the lower the value of r. The reward to a firm which cheats in period $t = 0$ and sees the noncooperative equilibrium in subsequent periods is:

$$R_C = G_C + \sum_{t=1}^{\infty} G_n/(1+r)^t = G_C + G_n/r \tag{9}$$

$R_M > R_C$ (so that collusion is sustainable) whenever the collusion/cheating ratio shown below exceeds r:

$$(G_M - G_n)/(G_C - G_M) = 4NW_M/(N + W_M)^2 > r \tag{10}$$

For a given N within the relevant range, this ratio reaches its maximum value of 1 when $W_M = N$ (JPM) and reaches its minimum value of 0 when $W_M = 0$ (RPM). The ratio rises monotonically when W_M increases from 0 to N. As might be expected, when $W_M = 1$ (APM), this ratio falls (i.e., collusion is harder to sustain) when the number of firms (N) increases.

To summarize, when firms are given RPM incentives and placed in a zero-sum game, the incentive to collude is eliminated, but the incentive to cheat on collusion is maintained. No collusive agreement can benefit all firms in a zero-sum game, and any such agreement would in any case be subject to overwhelming incentives for most or all firms to cheat. This was shown verbally in Section I and is illustrated in this section using a particular mathematical model. The details of a mathematical model can be varied endlessly, but the qualitative conclusion will always be the same, given the verbal proof in Section I.

IV. Practical Implementation

Economists traditionally present theory and presume (sometimes unrealistically) that the manner of its practice will be immediately apparent. With respect to many practical concerns which some economists and laymen have raised, some brief answers are indicated below.

1. *Would government regulators need extensive and expensive data to enforce the proposed scheme?* No. The only data needed are data on costs, revenues, profits, and managerial compensation. Since this data must be collected in any case, either

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by government for tax purposes, or by accountants as a prudent way for managers and stockholders to keep tabs on a firm's activities and cash flows, it follows that the method can be implemented at little or no extra cost.

This data is readily observable, so governmental omniscience is not required to implement the method. In particular, it is not assumed that government can observe either cost functions or demand curves, nor is it assumed that government can calculate optimal prices, profits, or output levels. Hence, the RPM method can be practiced, even if government is unable (because of information limitations) to set optimal prices or quantities directly.

2. *Would the use of accounting data to measure costs, revenues, and profits cause economic distortions?* Perhaps, but a more relevant question might be, would such distortions be any greater under RPM than under APM? The purpose of the method is to prevent collusion, not to calculate true economic costs or profits. Even under current arrangements, inability to measure true economic cost prevents stockholders from motivating managers with proper incentives to maximize absolute profits. Whatever may be (for motivational purposes) the most accurate way to measure absolute profits can also be used as a good way to measure relative profits. Regardless of whether profits are calculated using accounting data or other imperfect data, collusion will be prevented, and there is unlikely to be any significant incremental effect in causing additional misallocation of resources.

3. *How does one measure "relative profit"?* Aside from accounting measures, one way to estimate absolute profit is to look at changes in the value of a firm's total outstanding stock over a period of time and make adjustments at an appropriate interest rate for dividends paid or new stock shares issued over the same period of time. Since changes in both short-term and long-term profit potential affect the firm's value, this method of ascertaining profit gives managers the least incentive to manipulate accounting procedures, or to manipulate events in response to mistaken accounting rules. To calculate relative profits by this method, one simply looks at the change in value for one firm and subtracts off a weighted average of the change in value for rival firm(s).

An alternative method for measuring relative profit makes use of a new forecasting method, described by Lundgren (1995). This method provides efficient incentives for unbiased human forecasts of any variable value, including the future absolute profits or relative profits of any firm or any subcomponent of a firm, and such forecasts can be made as free of accounting biases as stock values. An advantage of the forecasting method is that it can be used to separate out the industry-specific profits of a conglomerate operating in several industries.

4. *How does one apply the relative profit concept to industries which contain multi-industry conglomerates?* Most multi-industry conglomerates adopt the multi-division form of organization, in which each industry division is operated essentially as a separate profit center, with separate accounting for each industry of operation. If the conglomerate operates in unrelated industries, there is unlikely to be any economy of scale or scope that would be wasted if the conglomerate

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were required to break itself up into single-industry parts. If a break-up is deemed undesirable because of economies of scale or scope, and if it is infeasible to issue separate securities for each industry subsidiary of the firm, then one can either use accounting techniques or use the forecasting technique described in Lindgren (1995). If a firm simply produces multiple (but closely related) products, the firm is best understood as producing in a single industry – a circumstance which requires no special treatment, as shown in Donaldson and Neary (1984, pp. 104–5, 109–110).

5. *How does one define the "market" or "industry" for purposes of imposing the zero-sum game?* Since it is not the purpose of the scheme to determine legal culpability for monopolization, but simply to eliminate incentives for collusion, it is not necessary to answer the tricky question of how broadly or narrowly the market should be defined. It is generally preferable to define the industry/market rather narrowly, so that only a very few, very similar firms are placed in each zero-sum game. That is, if there is a broadly defined industry with several firms, it is generally preferable to impose more than one zero-sum game on the several firms, by grouping the firms into more narrowly defined sub-industries, and imposing a zero-sum game on each of the smaller groups. Unlike under current antitrust law, it is not necessary to inquire whether more distantly related firms are actually part of the same "market".

6. *How does one sustain incentives for innovation and technological progress?* Innovations may be either costless or costly, and may be either patentable or unpatentable. If innovations are costless, we may presume that relative profit maximizers will adopt them, since profit maximization implies cost minimization. If innovations are costly, but patentable, the patent law provides incentive for innovation. Since RPM incentives are designed to induce competition, they should not be applied to situations where monopoly, and hence absolute profit maximizing, is the preferred public policy. Fortunately, both absolute profit and relative profit are measured in compatible money units, so there is nothing to prevent the institution of APM incentives for patented activities and RPM incentives for unpatented activities, even with respect to the same manager in the same firm.[2]

If innovations are costly, but unpatentable, RPM firms still have an incentive to reduce costs, if gains from innovation can be captured for a period of time until competitors follow suit. This incentive is proportional to firm output. The conventional Schumpeterian "wisdom" that a competitive industry is less innovative than an oligopolistic industry confounds the influence of firm size with the competitive/noncompetitive nature of firm interaction. It is mainly the size of firm output, not the size of a collusive price-cost margin, which determines the size of the incentive to reduce unit costs.

[2] There are various ways this can be done. For example, if firm A has a patent and firm B is a rival, any royalty payment from firm B to firm A would not be counted against either firm A or firm B in the calculation of relative profits. A complete exposition would require a separate paper.

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7. *How does one prevent RPM industries from sustaining chronic losses?* Chronic losses would occur only if marginal cost lies consistently below average cost for a particular industry. In such case, the industry can be made viable by offering an industry lump-sum subsidy in the exact amount of the industry's economic losses. Lump-sum subsidies may be distributed equally to all firms in a zero-sum group without affecting relative profits, and hence without inducing behavior to manipulate the size of the subsidy. Financing the subsidy through general revenues yields marginal cost pricing. Financing through a special industry tax yields average cost pricing.

8. *How does one ensure that RPM firms do not sabotage rival firms' operations?* Since relative profits rise when rival firm profits fall, there is arguably an increased incentive to sabotage rival firm operations. An increased incentive to cause sabotage need not imply a significant increase in actual sabotage. A situation of mutual sabotage can only arise if legal penalties are very weak, since rival firms have incentive to investigate, report, and prosecute sabotage activities which reduce their levels of profit.

Nevertheless, even if we were to suppose that serious sabotage problems would arise from an unmodified RPM incentive scheme, it is possible to modify the incentive scheme slightly so as to eliminate the sabotaging incentives. This modification would require a deduction in managerial compensation which offsets (or further penalizes) any gain in managerial compensation resulting from any gain in relative profits due to sabotage occurring in rival firms, even if legal culpability for the sabotage cannot be established. In other words, one may convert the zero-sum game into a negative-sum game, if sabotage is observed. (One can apply the same reasoning to lawsuits.)

9. *How does one ensure that corporate managers will not evade the regulation of salary policies?* The regulation of managerial compensation has nothing to do with the total amount of the salary and bonuses, but only the methods of their calculation. Even if we suppose that the value of relative profits is lower, on average, than the value of absolute profits, the noncontingent salary component of a manager's compensation can always be raised to compensate. No reduction in the average levels of managerial compensation is required. For the same level of risk and expected compensation, managers do not care whether bonuses are contingent on relative profit or absolute profit.

10. *Does the scheme represent an unwarranted intrusion into managerial compensation policies which have heretofore been unregulated?* The proposal does not actually require government to *determine* the managerial incentive schemes. It simply requires that the contingent part of any managerial incentive scheme must be based on relative firm performance, rather than absolute firm performance. In order to prevent the incentive for managerial collusion, it is not necessary that government determine the overall level of managerial compensation, nor is it necessary that government determine and implement any particular method for measuring

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relative firm performance. The minor intrusion, if it be such, is justified by the important public purpose at stake: Preventing collusion.

11. *How does one prevent collusion among managers to reduce managerial effort levels?* Instituting a zero-sum game in managerial income does not mean instituting a zero-sum game in managerial effort levels, so collusion to reduce managerial efforts is at least conceivable. However, collusion to reduce effort levels is not a serious threat, since a) managers of firms typically work in separate locations, and b) the work of managers consists mainly of mental efforts. Therefore, since managerial effort is essentially unobservable, any agreement to reduce effort levels cannot be easily monitored or enforced by colluding managers.

However, simply for argument's sake, suppose that managerial effort is actually (at least partly) observable. For example, suppose effort can be measured based on hours spent "on the job". In that case, one can pay managers based both on absolute effort and on relative performance. If the compensation rate for effort is made high enough, managers will no longer have incentive to collude to reduce effort levels, even if such collusion could be made perfectly enforceable.

12. *How does one ensure that firm owners will not find ways of making management stress absolute profits over relative profits?* This is the subject of the next section.

V. Owners, Managers, and Incentives

There are at least two ways of instituting relative profit incentives for firms. First, top management (including the board of directors) can be given long-term compensation contracts based on relative performance. Secondly, one can impose the zero-sum game in profits on whole firms (owners), and not just managers. Government may adopt only the first set of measures, only the second set, or both sets simultaneously.

The second method can be implemented by 100% taxing (subsidizing) the combined economic profits (losses) of an industry and allocating the tax (subsidy) equally to each firm. The tax (subsidy) would be on *industry* profits, *not* individual *firm* profits. As a result of the industry tax/subsidy scheme, after-tax profits to owner-shareholders are equivalent to pre-tax relative profits, which means owners will try to maximize relative profits rather than absolute profits. Although this method appears economically viable, it may not be politically palatable, given the potential for redistributions of income between stockholders and the government.

In firms or industries where owners and managers are one and the same, these two methods are essentially equivalent. No choice is possible. However, most important oligopoly industries are probably composed of large corporations which maintain a separation between ownership and direct managerial control. This well-known aspect of the internal structure of the modern corporation presents an interesting avenue by which government can enforce antitrust policy. Rather than impose relative profit incentives directly upon owners through taxes and sub-

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sidies, government can influence firm behavior simply by altering the incentives of management.

However, if owners are not made the direct subjects of taxes and subsidies which impose relative profit incentives, this raises the issue of whether absolute wealth maximizing stockholders can somehow reimpose APM incentives on RPM managers. The current state of corporate affairs is that managers, not stockholders, basically control the large corporation. Managers effectively appoint the boards of directors, to whom they are ostensibly responsible. Indirectly, through their choice of board members, managers set their own salaries. Managers have no incentive to change this state of affairs.

Stockholders are numerous and dispersed. Individually, most stockholders do not have enough votes to unseat management. Obtaining collective action to unseat management requires significant expense, which most stockholders find too costly to undertake. Controlling management is a "public good" for all stockholders, which most stockholders find rational to "free ride" upon by not attempting to provide it. The only stockholders who might have an incentive to undo management policies are the largest or principal stockholders. The remaining stockholders are of no consequence, except as voters who might side with the principal stockholder in any fight against management.

Consider, therefore, an industry in which the top two, three, or four firms have been placed into a zero-sum game in terms of managerial incentives. Each firm has a different principal owner. If the same person or entity is a principal owner in two or more of the top firms in an oligopoly industry, this should be regarded as an antitrust violation, just the same as interlocking directorates are so regarded. Hence, we assume different principal owners. Any conspiracy to undo the relative incentive scheme must involve the principal owners, since the managers themselves have no such incentive.

To be effective, the conspiracy must convert all or most managers from relative profit goals to absolute goals. To convert only one manager to absolute profit goals would not generate the kind of collusion among business firms which could substantially raise prices and profits, and thereby make the conspiracy (with its attendant risks) worthwhile from a private perspective. The conspiracy must therefore involve the principal owners of different firms acting in combination. The principal owners, being already wealthy, will not rationally risk jail time simply to increase their wealth still further. Suppose, nevertheless, that the principal owners attempt a conspiracy. What means would they use to influence management?

There are basically only two avenues by which the principal owners might try to influence management: compensation and employment. Either avenue may be pursued overtly or covertly.

First consider overt operations. The principal owner persuades stockholder voters to alter the conditions of employment or compensation. For example, the principal owner might use the annual stockholder meetings to directly hire or fire the manager, according to whether the manager pursued or failed to pursue collusive

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policies alongside other firms. Alternatively, the annual meetings might be used to raise or lower the base salary for future employment in a manner designed to undo the relative profit incentives paid in previous years.

Use of the annual stockholder meetings for either purpose would be an unusual or abnormal business practice. Use of the annual meetings for these purposes by an RPM firm would clearly be a suspect practice, prompting an antitrust investigation. More simply, use of a stockholder meeting to directly determine managerial employment or compensation might be made a *per se* antitrust violation, when performed by an RPM firm.

Thus, the following is recommended for instituting RPM incentives on management: Both the managers and the boards of directors are given long-term contracts containing relative performance incentives, which are not altered from year to year in a manner that might allow an owner to undo the RPM incentives. Any part of the compensation (including stock holdings or stock options) which is contingent on the firm's performance must be based on relative performance, not absolute performance. All compensation and compensation arrangements of managers and directors of RPM firms are disclosed to the antitrust authorities. Managerial employment is determined by the board of directors (all of whom are paid according to RPM incentives), not by either stockholders or principal owners, unless the principal owners have been converted to RPM incentives. The directors have overlapping terms, and are not all elected at once.

In situations where a principal owner (or other stockholder) wishes to have an active role in management or on the board of directors of an RPM firm, such owner or stockholder must have his stockholdings converted into assets which provide RPM incentives. This can be accomplished either by shorting the stock of rival RPM firms, and/or by imposing a tax/subsidy on the stockholder which mimicks the change in value of the stock in rival RPM firms. If the principal stockholder desires to be a passive investor, this change in incentive is not required.

Consider now possible covert operations. Assume that the principal owner has not acknowledged any active interest in the corporation, and has not been converted to RPM incentives. How can a principal owner with APM incentives undo the RPM incentives of firm managers? There are only two possibilities: threats and bribes. Threats are particularly likely to be reported to the antitrust authorities, could result in extra jail time, and will presumably not be resorted to. This leaves bribery.

The rich stockholder may choose to bribe either the manager or the directors. The manager might be bribed to behave collusively. The directors might be bribed to hire and fire managers based on willingness to collude. Bribing the directors is likely to be cheaper, but also less effective and more likely to be reported. Even if successful, bribing the directors to fire a manager is particularly likely to be reported by the manager. This leaves only bribing the manager directly.

A conspiracy by principal owner(s) will not stop at trying to institute APM incentives on RPM managers. Rather, the rational goal would be to attempt to institute joint-profit maximizing (JPM) incentives on the managers. Bribing the

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managers of all the important firms in the industry to institute JPM incentives is the only procedure that would guarantee collusion. Re-instituting APM incentives merely provides the opportunity for collusion, but does not guarantee its occurrence.

The possibility that principal owner(s) might bribe the manager(s) of APM firms to collude, or provide them with JPM incentives exists even today. Yet one rarely (or never?) hears of principal owner(s) attempting to bribe or covertly pay firm managers in this manner. If such behavior does not happen when firm managers are paid according to APM incentives, why should it happen if managers are paid according to RPM incentives?

In short, an illegal conspiracy of stockholders to re-impose absolute profit incentives onto firm managers is unlikely. The small stockholder has little influence and insufficient incentive to launch such a conspiracy. The large stockholder is too wealthy to want to risk jail time. Any such conspiracy would have to be explicit (and therefore detectable), not merely tacit.

VI. Conclusion

It has been shown that institution of a zero-sum game among a group of firms by means of relative profit maximizing incentives is capable of reducing or eliminating incentives for firms to collude, either actually or tacitly. This mild change in managerial incentives can be imposed at essentially zero public or private cost, yet it reaps potentially huge benefits.[3]

Appendix A. Optimal Weighting of Goal Functions

This appendix derives the conditions for goal functions needed to achieve a zero-sum game with desirable long-run properties. Suppose there are N ($N \geq 2$) firms in an industry. Let $\pi_1, \pi_2, \ldots, \pi_N$ be the profits earned by these firms, and let G_1, $G_2, \ldots, G_N$ be the goal functions for these firms. Let w_{ij} be the weight placed on firm j's profits in firm i's goal function, and let K_i be an arbitrary constant which adjusts firm i's goal satsifaction upwards or downwards (e.g., a fixed salary component in managerial pay). Goal functions which are linear in profits have the form:

$$G_i = \sum_{j=1}^{N} w_{ij}\pi_j + K_i \tag{A.1}$$

for all $i \in [1, N]$, where all w's and K's are fixed constants.

The zero-sum conditions require:

$$\sum_{i=1}^{N} w_{ij} = 0, \tag{A.2}$$

[3] One famous estimate of the deadweight cost of monopoly power (including oligopoly) is between 1/2% and 2% of G.N.P. (Scherer and Ross, 1990, p. 667)

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Suppose each firm sells a standardized product and that price depends solely on industry output: $P = p(Q)$, where $Q = \Sigma Q_i$. Assume further (which is likely in the long run) that cost functions are identical for each firm: $TC_i = C(Q_i)$. Hence, $\pi_i = PQ_i - C(Q_i)$, so that we obtain:

$$G_i = \sum_{j=1}^{N} w_{ij}(PQ_j - C(Q_j)) + K_i \tag{A.3}$$

Define $a_{ji} = \partial Q_j / \partial Q_i$ as any arbitrary conjecture which firm i entertains about the reaction function of firm j ($a_{ii} = 1$). Thus:

$$(\partial G_i / \partial Q_i) = \sum_{j=1}^{N} a_{ji} w_{ij}[P - C'(Q_j)] + p'(Q) \sum_{j=1}^{N} w_{ij} Q_j = 0 \tag{A.4}$$

Assuming that N firms in the industry is a given and that marginal cost is increasing, then the optimal industry outcome occurs only when firm outputs are identical ($Q_j = Q/N$) and price equals marginal cost [$P - C'(Q_j) = 0$] for each firm. These conditions are met only when the weights on profits meet the following conditions:

$$\sum_{j=1}^{N} w_{ij} = 0 \tag{A.5}$$

These N conditions for long-run industry optimality are in addition to the N conditions in (A.2) on weights needed to insure the zero-sum nature of the game. Short-run effects[4] not analyzed here may perhaps place additional restrictions on the optimal values for weights in the goal functions of firms.

Appendix B. Short-run Cost Differences

This appendix employs a 2-firm game to model the consequences of short-run cost differences between firms. Let $C_1(Q_1)$ and $C_2(Q_2)$ be the cost functions of firms 1 and 2, and let $a_{12} = \partial Q_1 / \partial Q_2$ and $a_{21} = \partial Q_2 / \partial Q_1$ be any arbitrary conjectures which each firm entertains about the reaction functions of the other firm. The problem itself may be stated thus:

$$G_1 = \pi_1 - \pi_2 = p(Q)Q_1 - C_1(Q_1) - p(Q)Q_2 + C_2(Q_2), \tag{B.1}$$

$$G_2 = \pi_2 - \pi_1 = p(Q)Q_2 - C_2(Q_2) - p(Q)Q_1 + C_1(Q_1). \tag{B.2}$$

[4] These short-run effects include possible incentives for pair-wise or subset collusion, or possible concerns about distribution of output among firms, if short-run costs differ significantly among firms and there are three or more firms in the same zero-sum game.

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The first order conditions are:

$$\begin{aligned}\partial G_1/\partial Q_1 &= p'(Q)(1+a_{21})(Q_1-Q_2)+p(Q)(1-a_{21})\\ &\quad -C_1'(Q_1)+a_{21}C_2'(Q_2)=0\end{aligned} \tag{B.3}$$

$$\begin{aligned}\partial G_2/\partial Q_2 &= p'(Q)(1+a_{12})(Q_2-Q_1)+p(Q)(1-a_{12})\\ &\quad -C_2'(Q_2)+a_{12}C_1'(Q_1)=0\end{aligned} \tag{B.4}$$

It can be shown that the only solution which satisfies Equations (B.3) and (B.4) has the form:

$$p(Q)=\frac{C_1'(Q_1)+C_2'(Q_2)}{2} \tag{B.5}$$

$$(Q_1-Q_2)=\frac{C_1'(Q_1)-C_2'(Q_2)}{2p'(Q)} \tag{B.6}$$

Equation (B.5) tells us that price will be set equal to the average of the marginal costs of the two firms. Equation (B.6) tells us that the more efficient firm will produce more output than the less efficient firm, since $p'(Q) < 0$.

Appendix C. Differentiated Products

This appendix models what happens when products are differentiated and firms compete in prices (Bertrand conjectures). Let the demand structure for the two firms be defined in terms of quantities demanded as a function of two prices: $Q_1 = Q_1(P_1, P_2)$ and $Q_2 = Q_2(P_1, P_2)$. It is reasonable to assume $(\partial Q_j/\partial P_j) < 0$ and $(\partial Q_i/\partial P_j) > 0$ for all i and j, $j \neq i$. The problem is stated thus:

$$\begin{aligned}G_1=\pi_1-\pi_2 &= Q_1(P_1,P_2)P_1-C_1(Q_1(P_1,P_2))\\ &\quad -Q_2(P_1,P_2)P_2+C_2(Q_2(P_1,P_2))\end{aligned} \tag{C.1}$$

$$\begin{aligned}G_2=\pi_2-\pi_1 &= Q_2(P_1,P_2)P_2-C_2(Q_2(P_1,P_2))\\ &\quad -Q_1(P_1,P_2)P_1+C_1(Q_1(P_1,P_2))\end{aligned} \tag{C.2}$$

The first-order conditions are:

$$\begin{aligned}(\partial G_1/\partial P_1) &= Q_1+P_1(\partial Q_1/\partial P_1)-C_1'(Q_1)(\partial Q_1/\partial P_1)\\ &\quad -P_2(\partial Q_2/\partial P_1)+C_2'(Q_2)(\partial Q_2/\partial P_1)=0\end{aligned} \tag{C.3}$$

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$$(\partial G_2/\partial P_2) = Q_2 + P_2(\partial Q_2/\partial P_2) - C_2'(Q_2)(\partial Q_2/\partial P_2) - P_1(\partial Q_1/\partial P_2) + C_1'(Q_1)(\partial Q_1/\partial P_2) = 0 \quad \text{(C.4)}$$

We may rearrange these conditions as expressing the determinants of price-cost margins:

$$P_1 - C_1'(Q_1) = \frac{-Q_1 + [P_2 - C_2'(Q_2)](\partial Q_2/\partial P_1)}{(\partial Q_1/\partial P_1)} \quad \text{(C.5)}$$

$$P_2 - C_2'(Q_2) = \frac{-Q_2 + [P_1 - C_1'(Q_1)](\partial Q_1/\partial P_2)}{(\partial Q_2/\partial P_2)} \quad \text{(C.6)}$$

The corresponding conditions for APM firms with Bertrand conjectures are:

$$P_1 - C_1'(Q_1) = \frac{-Q_1}{(\partial Q_1/\partial P_1)} \quad \text{(C.7)}$$

$$P_2 - C_2'(Q_2) = \frac{-Q_2}{(\partial Q_2/\partial P_2)} \quad \text{(C.8)}$$

Suppose we have a situation where two monopolistically competitive firms satisfy equations (C.7) and (C.8) because both firms are maximizing absolute profits. Assume that both firms have positive price-cost margins. Now suppose that one (or both) of the firms is converted into being a relative profit maximizer. If firm one is so converted, its price-cost margin is reduced, because the difference between the right-hand-side terms in equations (C.5) and (C.7) is negative:

$$\frac{[P_2 - C_2'(Q_2)](\partial Q_2/\partial P_1)}{(\partial Q_1/\partial P_1)} < 0 \quad \text{(C.9)}$$

Similarly, if firm 2 is converted to relative profit maximizing (assuming firm 1 maintains a positive price-cost margin), it too will wish to reduce its price-cost margin by expanding output and lowering price. Bertrand competition is absolutely the most competitive behavior which it is reasonable to postulate about APM firms, yet RPM firms compete even harder.

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EXHIBIT 2

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,	)	
	)	
Plaintiff,	)	
	)	
v.	)	
	)	
	)	
MICROSOFT CORPORATION,	)	CIVIL ACTION NO. 94-1564 (SS)
	)	
Defendant.	)	
	)	

FINAL JUDGMENT

WHEREAS Plaintiff, United States of America, having filed its Complaint in this action on July 15, 1994, and Plaintiff and Defendant, by their respective attorneys, having consented to the entry of this Final Judgment without trial or adjudication of any issue of fact or law; and without this Final Judgment constituting any evidence or admission by any party with respect to any issue of fact or law;

NOW, THEREFORE, before any testimony is taken, and without trial or adjudication of any issue of fact or law, and upon consent of the parti

for comments
alt. ex.

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ORDERED, ADJUDGED AND DECREED a:

I.

JURISDICTION

This Court has jurisdiction of the subject matter of this action and of the person of the Defendant, Microsoft Corporation ("Microsoft"). The Complaint states a claim upon which relief may be granted against the Defendant under Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2.

II.

DEFINITIONS

(A) "Covered Product(s)" means the binary code of (1) MS-DOS 6.22, (2) Microsoft Windows 3.11, (3) Windows for Workgroups 3.11, (4) predecessor versions of the aforementioned products, (5) the product currently code-named "Chicago," and (6) successor versions of or replacement products marketed as replacements for the aforementioned products, whether or not such successor versions or replacement products could also be characterized as successor versions or replacement products of other Microsoft Operating System Software products that are made available (a) as stand-alone products to OEMs pursuant to License Agreements, or (b) as unbundled products that perform Operating System Software functions now embodied in the products listed in subsections (1) through (5). The term "Covered Products" shall not include "Customized" versions of the aforementioned products developed by Microsoft; nor shall it apply to Windows NT Workstation and its successor versions, or Windows NT Advanced Server.

(B) "Customized" means the substantial modification of a product by Microsoft to meet the particular and specialized requirements of a final customer of a computer system. It

does not include the adaptation of such a product in order to optimize its performance in connection with a Personal Computer System manufactured by an OEM.

(C) "Duration" means, with respect to a License Agreement, the period of time during which an OEM is authorized to license, sell or distribute any of the Covered Products.

(D) A "License Agreement" means any license, contract, agreement or understanding, or any amendment thereto, written or oral, express or implied, pursuant to which Microsoft authorizes an OEM to license, sell or distribute any Covered Product with its Personal Computer System(s).

(E) A "Minimum Commitment" means an obligation of an OEM to pay Microsoft a minimum amount under a License Agreement, regardless of actual sales.

(F) "Lump Sum Pricing" means any royalty payment for a Covered Product that does not vary with the number of copies of the Covered Product that are licensed, sold or distributed by the OEM or of Personal Computer Systems distributed by the OEM.

(G) "New System" means a system not included or designated in a Per System License.

(H) "NDA" means any non-disclosure agreement for any pre-commercial release of a Covered Product that imposes any restriction on the disclosure or use of any such pre-commercial release of any Covered Product or any information relating thereto.

(I) "OEM" means an original equipment manufacturer or assembler of Personal Computer Systems or Personal Computer System components (such as motherboards or sound cards) or peripherals (e.g., printers or mice) that is a party to a License Agreement.

(J) "Per Copy License" means any License Agreement pursuant to which the OEM's royalty payments are calculated by multiplying (1) the number of copies of each Covered Product licensed, sold or distributed during the term of the License Agreement, by (2) a per copy royalty rate agreed upon by the OEM and Microsoft, which rate may be determined as provided in Section IV (H).

(K) "Per Processor License" means a License Agreement under which Microsoft requires the OEM to pay Microsoft a royalty for all Personal Computer Systems that contain the particular microprocessor type(s) specified in the License Agreement.

(L) "Per System License" means a License Agreement under which Microsoft requires the OEM to pay Microsoft a royalty for all Personal Computer Systems which bear the particular model name(s) or number(s) which are included or designated in the License Agreement by the OEM to Microsoft, at the OEM's sole option and under the terms and conditions as set forth herein.

(M) "Personal Computer System" means a computer designed to use a video display and keyboard (whether or not the video display and keyboard are actually included) which contains an Intel x86, or Intel x86-compatible microprocessor.

(N) "Operating System Software" means any set of instructions, codes, and ancillary information that controls the operation of a Personal Computer System and manages the interaction between the computer's memory and attached devices such as keyboards, display screens, disk drives, and printers.

III.

APPLICABILITY

This Final Judgment applies to Microsoft and to each of its officers, directors, agents, employees, subsidiaries, successors and assigns; and to all other persons in active concert or participation with any of them who shall have received actual notice of this Final Judgment by personal service or otherwise.

IV.

PROHIBITED CONDUCT

Microsoft is enjoined and restrained as follows:

(A) Microsoft shall not enter into any License Agreement for any Covered Product that has a total Duration that exceeds one year (measured from the end of the calendar quarter in which the agreement is executed).

Microsoft may include as a term in any such License Agreement that the OEM may, at its sole discretion, at any time between 90 and 120 days prior to the expiration of the original License Agreement, renew such License Agreement for up to one additional year on the same terms and conditions as those applicable in the original license period.

The License Agreement shall not impose a penalty or charge of any kind on an OEM for its election not to renew all or any portion of a License Agreement. In the event that an OEM does not exercise the option to renew a License Agreement as provided above, and a new License Agreement is entered between Microsoft and the OEM, the arm's length negotiation of different terms and conditions, specifically including a higher royalty rate(s), will not by itself constitute a penalty or other charge within the meaning of the foregoing sentence.

The Duration of any License Agreement with any OEM not domiciled in the United States or the European Economic Area that will not be effective prior to regulatory

approval in the country of its domicile may be extended at the option of Microsoft or the OEM during the time required for any such regulatory approval.

License Agreement provisions that do not bear on the licensing or distribution of the Covered Products may survive expiration or termination of the License Agreement.

(B) Microsoft shall not enter into any License Agreement that by its terms prohibits or restricts the OEM's licensing, sale or distribution of any non-Microsoft Operating System Software product.

(C) Microsoft shall not enter into any Per Processor License.

(D) Except to the extent permitted by Section IV (G) below, Microsoft shall not enter into any License Agreement other than a Per Copy License.

(E) Microsoft shall not enter into any License Agreement in which the terms of that agreement are expressly or impliedly conditioned upon:

(1) the licensing of any other Covered Product, Operating System Software product or other product (provided, however, that this provision in and of itself shall not be construed to prohibit Microsoft from developing integrated products); or

(2) the OEM not licensing, purchasing, using or distributing any non-Microsoft product.

(F) Microsoft shall not enter into any License Agreement containing a Minimum Commitment. However, nothing contained herein shall prohibit Microsoft and any OEM from developing non-binding estimates of projected sales of Microsoft's Covered Products for use in calculating royalty payments.

(G) Microsoft's revenue from a License Agreement for any Covered Product shall not be derived from other than Per Copy or Per System Licenses, as defined herein. In any Per System License:

(1) Microsoft shall not explicitly or implicitly require as a condition of entering into any License Agreement, or for purposes of applying any volume discount, or otherwise, that any OEM include under its Per System License more than one of its Personal Computer Systems;

(2) Microsoft shall not charge or collect royalties for any Covered Product on any Personal Computer System unless the Personal Computer System is designated by the OEM in the License Agreement or in a written amendment. Microsoft shall not require an OEM which creates a New System to notify Microsoft of the existence of such a New System, or to take any particular actions regarding marketing or advertising of that New System, other than creation of a unique model name or model number that the OEM shall use for internal and external identification purposes. The requirement of external identification may be satisfied by placement of the unique model name or model number on the machine and its container (if any), without more. The OEM and Microsoft may agree to amend the License Agreement to include any new model of Personal Computer System in a Per System License. Nothing in this clause shall be deemed to preclude Microsoft from seeking compensation from an OEM that makes or distributes copies of a Covered Product in breach of its License Agreement or in violation of copyright law;

(3) The License Agreement shall not impose a penalty or charge on account of an OEM's choosing at any time to create a New System. Addition of a New System to the OEM's License Agreement so that Covered Products are licensed for distribution with such New

System and royalties are payable with respect thereto shall not be deemed to constitute a penalty or other charge of any kind within the meaning of the foregoing sentence;

(4) All OEMs with existing Per System Licenses, or Per Processor Licenses treated by Microsoft under Section IV (J) as Per System Licenses, will be sent within 30 days following entry of this Final Judgment in a separately mailed notice printed in bold, boxed type which shall begin with the sentence "You are operating under a Microsoft Per System License," and shall continue with the language contained in the first four quoted paragraphs below. All new or amended Per System Licenses executed after September 1, 1994 shall contain a provision that appears on the top half of the signature page in bold, boxed type shall begin with the sentence "This is a Microsoft Per System License," and which shall continue with the language contained in the first four quoted paragraphs below.

> "As a Customer, you may create a 'New System' at any time that does not require the payment of a royalty to Microsoft unless the Customer and Microsoft agree to add it to the License Agreement."
>
> "Any New System created may be identical in every respect to a system as to which the Customer pays a Per System royalty to Microsoft provided that the New System has a unique model number or model name for internal and external identification purposes which distinguishes it from any system the Customer sells that is included in a Per System License. The requirement of external identification may be satisfied by placement of the unique model name or model number on the machine and its container (if any), without more."
>
> "If the customer does not intend to include a Microsoft operating system product with a New System, the Customer does not need to notify Microsoft at any time of the creation, use or sale of any such New System, nor does it need to take any particular steps to market or advertise the New System."
>
> "Under Microsoft's License Agreement, there is no charge or penalty if a Customer chooses at any time to create a New System incorporating a non-Microsoft operating system. If the Customer intends to include a Microsoft operating system product with the New System, the Customer must so notify Microsoft, after which the parties may enter into arm's length negotiation with respect to a license to apply to the New System."

In the case of OEMs with Per Processor Licenses treated as Per System Licenses pursuant to Section IV (J), the notice shall include the following paragraph at the beginning of the notice:

> "All models covered by your Per Processor License are now treated as subject to a Per System License. You may exclude any such model from being treated as subject to a Per System License by notifying Microsoft in writing. Such notice to Microsoft must include the model designation to be excluded from the Per System License. Such exclusion shall take effect on the first day of the calendar quarter next following Microsoft's receipt of such notice."

(H) Microsoft may not use any form of Lump Sum Pricing in any License Agreement for Covered Product(s) executed after the date of this Final Judgment. It is not a violation of this Final Judgment for Microsoft to use royalty rates, including rates embodying volume discounts, agreed upon in advance with respect to each individual OEM, each specific version or language of a Covered Product, and each designated Personal Computer System model subject to the License Agreement.

(I) OEMs that currently have a License Agreement that is inconsistent with any provision of this Final Judgment may, without penalty, terminate the License Agreement or negotiate with Microsoft to amend the License Agreement to eliminate such inconsistent provisions. An OEM desiring to terminate or amend such a License Agreement shall give Microsoft ninety (90) days written notice at any time prior to January 1, 1995.

(J) If an OEM has a License Agreement that is inconsistent with any provision of this Final Judgment, Microsoft may enforce that License Agreement subject to the following:

(1) if the License Agreement is a Per Processor License, Microsoft shall treat it as a Per System License for all existing OEM models that contain the microprocessor type(s) specified in the License Agreement except those models that the OEM opts in writing to exclude

and such exclusion shall take effect on the first day of the calendar quarter next following Microsoft's receipt of such notice; and

(2) Microsoft may not enforce prospectively any Minimum Commitment.

(K) Microsoft shall not enter into any NDA:

(1) whose duration extends beyond (a) commercial release of the product covered by the NDA, (b) an earlier public disclosure authorized by Microsoft of information covered by the NDA, or (c) one year from the date of disclosure of information covered by the NDA to a person subject to the NDA, whichever comes first; or

(2) that would restrict in any manner any person subject to the NDA from developing software products that will run on competing Operating System Software products, provided that such development efforts do not entail the disclosure or use of any Microsoft proprietary information during the term of the NDA; or

(3) that would restrict any activities of any person subject to the NDA to whom no information covered by the NDA has been disclosed.

(L) The form of standard NDAs will be approved by a Microsoft corporate officer and all non-standard language in NDAs that pertains to matters covered in Section (K) above will be approved by a Microsoft senior corporate attorney.

(M) Within thirty (30) days of the entry of this Final Judgment, Microsoft will provide a copy of this Final Judgment to all OEMs with whom it has License Agreements at that time except for those with licenses solely under the Small Volume Easy Distribution (SVED) program or the Delivery Service Partner (DSP) program.

V.

connection with its monitoring or securing of compliance with any Undertaking by or Decision against Microsoft that relates to Microsoft's licensing of any Covered Product. In addition, Defendant shall not object to disclosure to Plaintiff by DG-IV of any other information provided by defendant to DG-IV, or to cooperation between DG-IV and Plaintiff in the enforcement of this Judgment, provided that Microsoft shall receive in advance a detailed description of the information to be provided and the Plaintiff will accord any Microsoft information received from DG-IV the maximum confidentiality protection available under applicable law. Specifically, Plaintiff will treat Microsoft information that it receives from DG-IV as "confidential business information" within the meaning of the Freedom of Information Act, 5 U.S.C. § 552, with Microsoft deemed a "submitter" of the information under the statute. Plaintiff shall take precautions to ensure the security and confidentiality of Microsoft information provided in electronic form.

(E) If at the time information or documents are furnished by Defendant to Plaintiff, Defendant represents and identifies in writing the material in any such information or document to which a claim of protection may be asserted under Rule 26(c)(7) of the Federal Rules of Civil Procedure, and Defendant marks each pertinent page of such material "Subject to claim of protection under Rule 26(c)(7) of the Federal Rules of Civil Procedure," then ten days notice shall be given by Plaintiff to Defendant prior to divulging such material in any legal proceeding (other than a grand jury proceeding) to which Defendant is not a party.

VI.

FURTHER ELEMENTS OF JUDGMENT

(A) This Final Judgment shall expire on the seventy eighth month after its entry.

(B) Jurisdiction is retained by this Court over this action and the parties thereto for the purpose of enabling any of the parties thereto to apply to this Court at any time for further orders and directions as may be necessary or appropriate to carry out or construe this Final Judgment, to modify or terminate any of its provisions, to enforce compliance, and to punish violations of its provisions.

VII.

PUBLIC INTEREST

Entry of this Final Judgment is in the public interest.

Entered: _____

UNITED STATES DISTRICT JUDGE

_____

EXHIBIT 3

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	)	Civil Action No. 94-1564 (SS) Competitive Impact Statement

Exhibit
comments
B 2

COMPETITIVE IMPACT

Pursuant to Section 2(b) of the Antitrust Proce
(h), the United States submits this Competitive Impact
Judgment submitted for entry with the consent of defen
antitrust proceeding.

NATURE AND PURPOSE OF T

On July 15, 1994, the United States filed a civil antitrust Complaint to prevent and restrain Microsoft Corporation ("Microsoft") from using exclusionary and anticompetitive contracts to market its personal computer operating system software, in violation of Sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2. As alleged in the Complaint, Microsoft has used these contracts to restrain trade and to monopolize the market for operating systems for personal computers using the x86 class of microprocessors, which comprise most of the world's personal computers. As used herein, "PC" refers to personal computers that use this class of microprocessor.

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The Complaint alleges that Microsoft has used its monopoly power to induce PC manufacturers to enter into anticompetitive, long-term licenses under which they must pay Microsoft not only when they sell PCs containing Microsoft's operating systems, but also when they sell PCs containing non-Microsoft operating systems. These anticompetitive, long-term licenses have helped Microsoft to maintain its monopoly. By inhibiting competing operating systems' access to PC manufacturers, Microsoft's exclusionary licenses slow innovation, raise prices, and deprive consumers of an effective choice among competing PC operating systems.

The Complaint also alleges that in connection with pre-release testing of a new Microsoft operating system code-named "Chicago," Microsoft sought to impose unreasonably restrictive and anticompetitive non-disclosure agreements on a number of leading developers of applications software products. These non-disclosure agreements would have unreasonably restricted the ability of software developers to work with competing operating systems or to develop competitive products or technologies.

The Complaint seeks to prevent Microsoft from continuing or renewing any of the anticompetitive practices alleged to violate the Sherman Act, and thus to provide fair opportunities for other firms to compete in the market for PC operating systems.

The United States and Microsoft have agreed that the proposed Final Judgment may be entered after compliance with the Antitrust Procedures and Penalties Act.[1] Entry of the Final

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[1] The proposed Final Judgment that was filed with the Complaint on July 15, 1994 contained several omissions and inconsistencies in the numbering of paragraphs and sub-paragraphs. With the Defendant's consent, a corrected version of the Final Judgment is being filed with this Competitive Impact Statement. See Attachment. Paragraph and sub-paragraph numbers in this Competitive Impact Statement refer to the numbers used in the corrected version of the Final Judgment.

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Judgment will terminate this civil action, except that the Court will retain jurisdiction for further proceedings that may be required to interpret, enforce, or modify the Judgment, or to punish violations of any of its provisions.

DESCRIPTION OF THE PRACTICES INVOLVED IN THE ALLEGED VIOLATIONS

If this case were to proceed to trial, the United States would prove the following:

Microsoft develops, licenses, sells, and supports several types of software products for personal computers, including operating systems and applications. An operating system is software that controls the basic operations of the personal computer. Applications software, such as word processing programs and spread sheets, runs "on top of" an operating system to enable the computer to perform a broad range of useful functions. Operating systems are designed to work with specific microprocessors, the integrated circuits that function as the "brain" of the computer. Most of the personal computers in the world today use the x86 class of microprocessors, originally designed by Intel, and now including microprocessors manufactured by other companies that use a substantially similar architecture and instruction set. Original equipment manufacturers ("OEMs") that sell PCs and customers who buy such machines cannot use operating systems written for other microprocessors.

In 1981, Microsoft introduced a PC operating system called the Microsoft Disk Operating System ("MS-DOS"), the original version of which Microsoft licensed to IBM for use in IBM's PC. As IBM's PC experienced considerable commercial success, other OEMs also used MS-DOS in order better to emulate the IBM PC. In 1985, Microsoft introduced "Windows," a more sophisticated PC operating system product designed for use in conjunction with MS-DOS.

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Windows allowed users to give instructions with a "mouse" or similar device and also to run more than one application at a time. Microsoft quickly gained a monopoly in the market for PC operating systems worldwide. For almost a decade, Microsoft's market share has consistently exceeded 70%.[2]

Development, testing, and marketing of a new PC operating system involves considerable time and expense. A new operating system faces additional barriers to entry, including the absence of a variety of high quality applications to run on the system; the small number of people trained on and using the system, which discourages customers from buying it and software companies from writing applications to run on it; and, since the overwhelming majority of PCs are sold with a pre-installed operating system, the difficulty of convincing OEMs to offer and promote the system.

Microsoft has used exclusionary and anticompetitive contract terms to maintain its monopoly. OEMs believe that a substantial portion of their customers will want a PC with MS-DOS and Windows, and therefore feel that they must be able to offer their customers MS-DOS and Windows. With thin profit margins, OEMs want to obtain these products at the lowest possible cost.

Beginning in 1988, and continuing until July 15, 1994, Microsoft induced many OEMs to execute anticompetitive "per processor" licenses. Under a per processor license, an OEM pays

---

[2] In 1993, Microsoft's MS-DOS operating system constituted approximately 79 % of the operating systems sold to PC manufacturers. PC-DOS accounted for approximately 13 % of such sales, OS/2 constituted approximately 4 %, DR-DOS constituted approximately 3 %, and Unix operating systems constituted approximately 1 %. A chart showing these market shares is attached as Exh. 1.

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Microsoft a royalty for each computer it sells containing a particular microprocessor, whether the OEM sells the computer with a Microsoft operating system or a non-Microsoft operating system. In effect, the royalty payment to Microsoft when no Microsoft product is being used acts as a penalty, or tax, on the OEM's use of a competing PC operating system. Since 1988, Microsoft's use of per processor licenses has increased. In fiscal year 1993, per processor licenses accounted for an estimated 60% of MS-DOS sales to OEMs and 43% of Windows sales to OEMs.[3] Collectively, the OEMs who have such per processor contracts are critical to the success of competing operating system vendors, but those OEMs effectively are foreclosed to Microsoft's competitors.

Microsoft has further foreclosed the OEM channel through the use of long-term contracts with major OEMs, some expiring as long as five years from their original negotiation date. In some cases, these contracts have left OEMs with unused balances on their minimum commitments, which Microsoft can allow to be used if the contract is extended, but which would be forfeited if the OEM does not extend the contract. These practices have allowed Microsoft to extend the effective duration of its OEM contracts, further impeding the access of PC operating system competitors to the OEM channel.

In addition to using anticompetitive OEM licenses, Microsoft has also employed anticompetitive restrictions in certain of its non-disclosure agreements ("NDAs"). Microsoft

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[3] Per processor licenses accounted for an increasing proportion of Microsoft's operating system sales in the 1988 - 1993 period. Twenty per cent of all units of MS-DOS that were sold to OEMs in FY 1989 were sold pursuant to per processor licenses. That percentage increased to 22 % in FY 1990; 27 % in FY 1991; 50 % in FY 1992; and to 60 % in FY 1993. A chart showing this increasing use of per-processor licenses is attached as Exh. 2.

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anticipates commercially releasing Chicago, the next version of Windows, in late 1994 or early 1995. In preparation for its release, Microsoft has allowed certain third parties, including independent software vendors ("ISVs") who write applications, to have access to pre-release versions of Chicago, a process known in the software industry as "beta testing." This permits Microsoft to receive feedback from the beta testers, and the ISVs to begin writing applications for Chicago prior to its release.

In connection with beta testing Chicago, Microsoft employed, as it has in prior beta tests, NDAs prohibiting disclosure of confidential information. In this instance, however, Microsoft sought to impose on certain leading software companies far more restrictive NDAs than it had previously used. These NDAs would have precluded developers from working on competitive products and technologies for an unreasonably long period of time.

Through these practices, Microsoft has excluded competitors by unreasonable and anticompetitive means, thereby lessening competition and maintaining a monopoly in the PC operating system market. Microsoft's licensing practices deter OEMs from entering into licensing agreements with operating system rivals and discourage OEMs who agree to sell non-Microsoft operating systems from promoting those systems. By depriving rivals of a significant number of sales that they might otherwise secure, Microsoft makes it more difficult for its rivals to convince ISVs to write applications for their systems, for OEMs to offer and promote their systems, and for users to believe that their systems will remain viable alternatives to MS-DOS and Windows.

Microsoft's exclusionary contracts harm consumers. OEMs that sign Microsoft's exclusionary licenses but offer consumers a choice of operating systems may charge a higher price, in order to cover the double royalty, for PCs using a non-Microsoft operating system.

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Even consumers who do not receive a Microsoft operating system still pay Microsoft indirectly. Thus, Microsoft's licensing practices have raised the cost of personal computers to consumers.

Microsoft's conduct also substantially lengthens the period of time required for competitors to recover their development costs and earn a profit, and thereby increases the risk that an entry attempt will fail. In combination, all these factors deter entry by competitors and thus harm competition. By deterring the development of competitive operating systems, Microsoft has deprived consumers of a choice of potentially superior products. Similarly, the slower growth of competing operating systems has retarded the development of applications for such systems.

EXPLANATION OF THE PROPOSED FINAL JUDGMENT

The proposed Final Judgment will end Microsoft's unlawful practices that restrain trade and perpetuate its monopoly power in the market for PC operating systems. In addition, the proposed Final Judgment contains provisions that are remedial in nature and designed to assure that Microsoft will not engage in the future in exclusionary practices designed to produce the same or similar effects as those set forth in the Complaint.

In particular, Sections IV (A), (C), and (F) prohibit Microsoft's use of the specific exclusionary practices alleged in the complaint -- "per processor" contracts, lengthy terms, and minimum commitments -- that foreclose competing PC operating system vendors from much of the OEM channel. Sections IV (K)-(L) prohibit the use of anticompetitive non-disclosure agreements in conjunction with Microsoft's distribution of pre-commercial releases of operating system software products. Sections IV (B), (E), (G), and (H) impose prohibitions that go beyond the alleged exclusionary practices in order to ensure that Microsoft's future contracting practices -

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- not challenged here because not yet used -- do not unreasonably impede competition. Sections IV (J) and (M) are designed to bring existing contracts into immediate compliance with the proposed Final Judgment.

Scope of the Final Judgment

The injunctions in Section IV generally apply to "covered products" which are defined, in Section II (A), as the binary code of MS-DOS 6.22; Microsoft Windows 3.11; Windows for Workgroups 3.11; predecessor versions of those products; the product currently code-named "Chicago" (the planned successor to Microsoft Windows 3.11); and other successor versions of or products marketed as replacements for the aforementioned products. This definition includes all Microsoft's PC operating system products in which the defendant currently possess a substantial degree of market power. The definition does not encompass, and specifically excludes, Windows NT Workstation and Windows NT Advanced Server, neither of which has a significant share of a relevant market at this time.

The definition of "covered product" was drafted with the recognition that Microsoft will continue to modify its operating system products throughout the duration of the Final Judgment. The prohibitions in the decree will apply to the successor and replacement products of those existing operating system products that have substantial market power. The decree will govern the licensing of such products if they are made available as stand-alone products to OEMs pursuant to license agreements, or as unbundled products that perform operating system software functions now embodied in the specifically listed existing products. Moreover, the decree will govern the licensing of successor versions of or products marketed as replacements for MS-DOS 6.22, Microsoft Windows 3.11, Windows for Workgroups 3.11, and "Chicago,"

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even if such successor or replacement products could also be characterized as successors or replacements of operating system software products that are not covered, such as Windows NT Workstation or Windows NT Advanced Server.

Prohibition of the Licensing Violations

The three anticompetitive features of Microsoft's license agreements that are challenged in the complaint -- the excessive duration of those agreements, the requirement of royalty payments on a "per processor" basis, and large minimum commitments -- are addressed principally in Sections IV (A), IV (C) and IV (F) of the Final Judgment.

Duration: Section IV (A) limits the duration of Microsoft's license agreements with OEMs to one year, with OEMs having the option to renew a license for one additional one year term on the same terms and conditions as in the first year. This limitation on the duration of license agreements, along with the safeguards provided in Section IV (G), will ensure that vendors of competing operating systems will have regular and frequent opportunities to attempt to market their products to OEMs. Absent such opportunities, Microsoft's competitors might be unable to reach the level of market penetration needed for profitable operation in a reasonable period of time, even if they are offering products that are deemed superior by those customers who have an opportunity to buy them.

Per Processor Licenses: Section IV (C) prohibits the use of per processor licenses.[4] Section II (K) defines per processor licenses as licenses that require the OEM to pay a royalty for

[4]Section IV (J) (1) converts all per processor licenses to per system licenses, except those models which an OEM excludes, which will thereafter be subject to the limitations imposed on Microsoft by Section IV (G).

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all personal computer systems that contain specified microprocessors. As noted above, the requirement to pay a royalty to Microsoft on the sale of a PC that has a non-Microsoft operating system is comparable, in its economic effect, to the imposition of a "tax" on the competing operating system. Per processor licenses are also very similar to exclusive dealing or requirements contracts; the OEM in effect is obtaining the right to use Microsoft's operating system, and is paying an operating system royalty, for all of its operating system "requirements" for use on PCs using the designated microprocessors.

Minimum Commitments: Section IV (F) will bar Microsoft from entering into any license agreement containing a minimum commitment.[5] While minimum commitments are not in and of themselves illegal, they can be used to achieve a similar effect as that accomplished through per processor licenses or exclusive dealing contracts. If the minimum commitment is greater than the number of units of Microsoft software that the OEM expects or would otherwise desire to use at any time during the term of the contract, the minimum commitment creates a disincentive for an OEM to make incremental purchases of non-Microsoft operating systems. In that context, the minimum commitment also operates in effect to require a royalty payment to Microsoft, even for PCs that use a non-Microsoft operating system. This effect will be ended by Section IV (F).

Restoring Competition To The Market Through Prophylactic Additional Relief

The proposed Final Judgment not only bans Microsoft's unlawful practices, but also contains additional provisions which are prophylactic in nature, and are intended to ensure that

[5] Section IV (J) (2) prohibits Microsoft from prospectively enforcing minimum commitments in existing license agreements.

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the anticompetitive effects of those practices are not replicated through use by Microsoft of other exclusionary practices.

Microsoft Prohibited From Limiting OEM Sales of Competing Operating System Products: Section IV (B) bars Microsoft from entering into license agreements that prohibit or restrict an OEM from licensing, selling, or distributing competing operating system products. In addition, Section IV (E) prohibits Microsoft from expressly or impliedly conditioning its licenses of operating systems on the licensing, purchase, use or distribution not only of other covered products, but also any other Microsoft product, or non-Microsoft product. Without these provisions Microsoft could force OEMs to purchase covered products and thus accomplish anticompetitive effects similar to those achieved through its unlawful licensing practices, or attempt to extend or protect its monopoly in any covered product by conditioning its licenses on the licensing, purchase or use of other products.

Microsoft Limited to Per Copy and Per System Licenses: Sections IV (D) and IV (G) require Microsoft to use either "per copy" or "per system" licenses. Per copy licenses, if used in conjunction with pro-competitive volume discounts, pose few competitive concerns. Per system licenses, if not carefully fenced in, could be used by Microsoft to accomplish anticompetitive ends similar to "per processor" licenses. However, if an OEM easily can designate models not subject to a per system license, it can use non-Microsoft operating systems on those models without incurring a royalty obligation to Microsoft. If an OEM need not pay a royalty to Microsoft for anything but the number of copies of the Microsoft operating system that it actually uses, that OEM will not be deterred from licensing, purchasing or using competing operating system products.

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Restrictions on Per System Licenses: The Final Judgment also places restrictions on the use of per system licenses to ensure that they are not used in an exclusionary manner. In particular, Section IV (G) specifies that per system licenses must allow the licensee to create "new systems" that can be sold without incurring a royalty obligation to Microsoft if they do not utilize a Microsoft product. Under Section IV (G), an OEM need only designate a new model name or number to create a "new system." Microsoft may not require the OEM even to notify Microsoft of the creation of a new system; nor may Microsoft impose requirements relating to the marketing or advertising of a new system, or penalize an OEM for creating a new system. Section IV (G) (4) requires Microsoft to notify within 30 days following entry of this Final Judgment all existing OEM licensees under per system licenses and all OEM licensees with per processor licenses who choose to let them be converted to per system licenses (a provision discussed below) of their rights to create new systems that will not be subject to any existing per system license. This notice provision ensures that existing licensees promptly know of their rights to avoid royalty payments under per system contracts if they choose to create new systems.

Microsoft Prohibited From Using Lump Sum Pricing: Section IV (H) also serves a prophylactic function, prohibiting the use of lump sum pricing in license agreements for covered products. As defined in Section II (F), lump sum pricing is any royalty payment that does not vary with the number of copies of the covered product (under per copy licenses) or the number of personal computer systems (under per system licenses) that are licensed, sold, or distributed by the OEM. This restriction, like the prohibitions on minimum commitments and requirements

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contracts, restricts conduct that could be used by Microsoft to achieve effects comparable to the effects of the conduct challenged by the government, and for that reason is enjoined.[6]

Neither Section IV (H) nor any other provision of the proposed Final Judgment prohibits the use of royalty rates, including rates embodying volume discounts, agreed upon in advance with respect to each individual OEM, each specific version or language of a covered products, and each designated personal computer system model. Nothing in the Final Judgment, however, in any way sanctions Microsoft structuring any volume discount whose purpose or effect is to impose de facto requirements contracts or exclusive arrangements on the OEM. As discussed below in connection with alternatives to the proposed Final Judgment, given Microsoft's monopoly power in operating systems, such practices can violate the antitrust laws.

Transition Rules

In the Stipulation consenting to the entry of the proposed Final Judgment, Microsoft agreed to abide by the provisions of the proposed Final Judgment immediately upon the filing of the Complaint, i.e., as of July 15, 1994. Among other things, the transition provisions described herein will require Microsoft to abide by the foregoing limitations and prohibitions when entering

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[6] If a license agreement established a minimum commitment greater than the OEM's requirements for operating systems (an agreement that would be prohibited under this decree), the minimum commitment would constitute, in effect, a lump sum payment. Regardless of the number of copies distributed by the OEM, its royalty payment to Microsoft would not vary. A lump sum pricing arrangement imposed by a monopolist that allowed unlimited use of the licensed product for a single fee calibrated to the anticipated total operating system needs of a particular OEM would also produce a similar economic effect as a requirements contract or a per processor license: the OEM would owe the same royalty to Microsoft whether it chose to use a Microsoft operating system on all of the PCs it sold, or only on some of the PCs it sold, and would, in effect, "pay twice" if it chose to purchase a non-Microsoft operating system for some of its PCs.

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into any license agreements with OEMs after July 15, 1994. Certain additional provisions of the proposed Final Judgment also apply to existing license agreements that are inconsistent with the proposed Final Judgment's requirements for new license agreements.

Under Section IV (I), existing OEM licensees may terminate or negotiate with Microsoft to amend their agreements to make them consistent with the requirements of the Final Judgment.

Section IV (J) provides that if an OEM chooses not to exercise either of these options, Microsoft must abide by the following rules. First, under Section IV (J) (1), a per processor license must be treated as a "per system" license; OEM models that contain the microprocessor(s) specified in such a per processor license will be considered to be covered by the "per system" license unless the OEM opts in writing to exclude such model from coverage. As already noted, OEMs may freely sell PCs with non-Microsoft operating systems, and avoid any obligation to pay royalties to Microsoft under a per system license, simply by designating such PCs as a new system with a separate model number or name. Second, under Section IV (J) (2), Microsoft may not enforce any minimum commitment in an existing license agreement.

These provisions further two consistent goals. Opportunities for competition in the PC operating system market are fostered by a rapid end to the unlawful practices embodied in existing licenses. At the same time, the transition rules avoid creating hardships for OEMs by not unnecessarily disrupting established commercial relationships with Microsoft. Indeed, OEMs are not required to terminate or amend their existing contracts with Microsoft; the choice to do so is theirs alone. Microsoft, however, may not enforce the per processor or minimum commitment features of any existing contract. Providing OEMs with this choice minimizes the costs of the

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transition from existing license agreements that are inconsistent with the decree to new license agreements, while ensuring that any unavoidable transition costs be borne largely by Microsoft.

To ensure that existing licensees learn of their rights under the proposed Final Judgment, Section IV (M) requires Microsoft to provide a copy of the Final Judgment to all OEMs with which it has license agreements, except for those who have licenses only under Microsoft's Small Volume Easy Distribution program or the Delivery Service Partner program.

Non-Disclosure Agreements

Finally, the proposed Final Judgment contains provisions that prevent Microsoft from imposing unlawfully restrictive NDAs on developers of applications software.

Sections IV (K) (1) limits the duration of any NDA to the earliest of (a) the commercial release of the product covered by the NDA, (b) an earlier public disclosure of the information covered by the NDA, or (c) one year after the information is disclosed to the person subject to the NDA. Section IV (K) (2) provides that NDAs may not restrict subject parties from developing software products that will run on competing operating systems, if such development does not entail the use or disclosure of Microsoft proprietary information during the term of the NDA.

In combination, these provisions recognize that whatever Microsoft's legitimate interest in protecting the confidentiality of proprietary information covered by the NDAs, the need for any such protection must be balanced against the competitive consequences of any restriction imposed on others concerning disclosure and use of the information. The proposed Final Judgment ensures that any NDA imposed by Microsoft will not extend beyond the point that the

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requirements of the Antitrust Procedures and Penalties Act have been satisfied. The Court then must determine whether the proposed decree is in the public interest, pursuant to Section 5 (e) of the Clayton Act, 15 U.S.C. § 16 (e).[7]

ALTERNATIVES TO THE PROPOSED FINAL JUDGMENT

In addition to the remedies provided in the proposed Final Judgment, the Department also considered whether to require limitations on the manner in which Microsoft could structure volume discount pricing arrangements for covered products. While the Department recognizes that volume discount pricing can be and normally is pro-competitive, volume discounts also can be structured by a seller with monopoly power (such as Microsoft) in such a way that buyers, who must purchase some substantial quantity from the monopolist, effectively are coerced by the structure of the discount schedule (as opposed to the level of the price) to buy all or substantially all of the supplies they need from the monopolist. Where such a result occurs, the Department believes that the volume discount structure would unlawfully foreclose competing suppliers from the marketplace -- in this case, competing operating systems -- and thus may be challenged.

The Department ultimately concluded that it would not require provisions in the Final Judgment to attempt to proscribe in advance the various means by which Microsoft could

---

[7] In making this public interest determination, "[t]he balancing of competing social and political interests affected by a proposed antitrust consent decree must be left, in the first instance, to the discretion of the Attorney General. The court's role in protecting the public interest is one of insuring that the government has not breached its duty to the public in consenting to the decree. The court is required to determine not whether a particular decree is the one that will best serve society, but whether the settlement is `within the reaches of the public interest.'" United States v. Bechtel Corp., 648 F.2d 660, 666 (9th Cir.), cert. denied, 454 U.S. 1083 (1981) (citations and internal quotations omitted). Accord United States v. Western Electric Co., 993 F.2d 1572, 1576 (D.C. Cir. 1993); United States v. American Tel. and Tel. Co., 552 F. Supp. 131, 151 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983).

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attempt to structure volume discounts as a means to thwart competition rather than as a means of promoting competition. The Department reached this conclusion because it does not have evidence that Microsoft has, to date, in fact structured its volume discounts to achieve anticompetitive ends. The Department did, however, communicate to Microsoft its concern and stated its intent to initiate an investigation and antitrust enforcement proceeding, if warranted, should Microsoft adopt anticompetitive volume discount structures in its future license agreements. Given the procompetitive impact of the provisions of the proposed Final Judgment, the normally procompetitive nature of volume discount pricing, and the absence of any evidence that Microsoft has used volume discounting in an anticompetitive manner to date, the Department believes that this resolution is appropriate on the record at this time.

Another alternative to the proposed Final Judgment would be a full trial of this case. The Department of Justice believes that such a trial would involve substantial cost to the United States and is not warranted since the proposed Final Judgment provides all of the relief that the United States seeks in its Complaint and includes substantial additional prophylactic measures as well.

DETERMINATIVE MATERIALS AND DOCUMENTS

No materials or documents of the type described in Section 2(b) of the Antitrust

MTC-00030631_0254

Procedures and Penalties Act, 15 U.S.C. § 16(b), were considered in formulating the proposed Final Judgment.

Dated: July 27, 1994

Respectfully submitted,

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MTC-00030631_0255

EXHIBIT 4

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

EXHIBIT

FILED

JAN 10 1995

Clerk, U. S. District Court
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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

UNITED STATES

Plain

vs.

n No. 94-1564 (SS)

MICROSOFT CORI

Defenc

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

MEMORAI **TION TO**

The economic arguments in t ...emorandum were prepared in extensive consultation with the following economists. However, because of the shortness of time, counsel retained complete responsibility for the contents of this document.

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The Department of Justice has determined that from 1988 through July 1994, a period during which the number of personal computers in the United States virtually exploded, Microsoft Corporation successfully used a variety of unlawful and "anticompetitive" practices to maintain its monopoly position in the market for "operating systems" for use with personal computers. As a result of these unlawful practices, Microsoft has been able to preclude any meaningful competition in the market while increasing the installed base of Microsoft operating systems from well under 20 million in 1988 to approximately 120 million in 1994.

This memorandum[1] will show that under established economic theory, this now-massive installed base will enable Microsoft, if unchecked, both to maintain its monopoly in the operating systems market, and to leverage its installed base to dominate and monopolize the markets for applications and other software products. This brief also will show that the Department's proposed decree completely fails to address the consequences of the huge increase in installed base that Microsoft has procured through illegal practices. Instead, the Department simply proposes to shut the barn door now that the horse has already gone.

Under established economic theory, it is clear that the proposed decree will neither result in an increase in competition in the operating systems market, nor prevent Microsoft from monopolizing the remainder of the software industry. These amici accordingly urge the Court to require further submissions from the Department, both by way of expert affidavits and the production of documents, to explain how permitting Microsoft to profit from

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[1] This memorandum amici curiae is submitted by Wilson, Sonsini, Goodrich & Rosati on behalf of certain clients that prefer to retain their confidentiality. Hence, they are not identified in this submission.

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its illegal conduct not just by continuing, but by expanding, its monopolization of the software industry can be argued to be in the "public interest."

I

INTRODUCTION AND SUMMARY

This Court has been asked to endorse the proposed Consent Decree between the Department of Justice and Microsoft without being provided with any of the information upon which a meaningful determination under the Tunney Act could be based. Thus, for example, the Department's investigation ostensibly inquired regarding "alleged false product preannouncements" by Microsoft. 59 Fed. Reg. 59,426, 59,427 (Nov. 17, 1994). At the September 29, 1994 hearing on this matter, the Court referred to this issue, noting that in the book Hard Drive,[2] Microsoft was said "time after time" to predatorially preannounce products "with the intent [to] freeze other people from coming out with their product." Tr. of Status Call, Sept. 29, 1994, at 16:21-22. The following colloquy then took place between Microsoft's counsel and the Court:

> The Court: [H]ow do you answer those charges?
>
> Mr. Urowsky: Those charges we believe are entirely false.
>
> The Court: In other words, the vaporware charge is false?
>
> Mr. Urowsky: That's correct.

Id. at 15:7-12, 16:18-17:1.

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[2] James Wallace & Jim Erickson, Hard Drive: Bill Gates and the Making of the Microsoft Empire (1992).

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Microsoft's representations, however, are belied by Microsoft's own documents, produced to the Government during the course of its investigation. (Examples of such documents are attached hereto at Appendix Exs. 21 and 22.)[3] Thus, for example, a Microsoft manager was involved in spearheading two product preannouncements during one six-month period. In one instance, the manager wrote that in response to "Borland's announce[ment of] TurboBASIC at the November Comdex," he simultaneously worked "to develop a [Microsoft] spec[ification] that could beat TurboB," while also formulating a promotional campaign "that could hold our position until [QB3, the Microsoft product] hit the market."[4] He stated that he "reviewed [this] promotion plan with Bill G. before implementation." Id. The Microsoft documents state that Steve Ballmer, one of Microsoft's top executives, favorably commented on this strategy, saying that the "best way to stick it" to Borland was such a "QB3 preannounce to hold off Turbo buyers."[5]

In the same document, the Microsoft manager wrote that Microsoft was "not as far along on the response to [Borland's] Turbo C," a second product, because Microsoft was "further from product announcement." According to the Microsoft document, the Microsoft manager:

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[3] Exhibit numbers refer to selected supporting documents which have been included in the Appendix to this Memorandum of Amici, filed herewith. For the Court's convenience, documents in the Appendix have been organized alphabetically by publication title.

[4] Microsoft Corp. Employee Performance Review, dated May 4, 1987, at 3 (Ex. 21). (Although this review has become a public document, these amici have redacted the review to safeguard the employee's privacy interests.)

[5] Microsoft Corp. Employee Performance Review, dated Nov. 2, 1987, at 8 (Ex. 21). (Although this review has become a public document, these amici have redacted the review to safeguard the employee's privacy interests.)

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> developed a rollout plan for [Microsoft's products] QuickC and CS that focused on minimizing Borland's first mover advantage by preannouncing with an aggressive communication campaign.[6]

The manager was given the highest possible rating on his performance review (a "5-") for his "public relations" handling of this "C preannouncement."[7]

Perhaps even more striking than the incongruence between Microsoft's representations and its own documents is the silence by the Department, both in its written submissions and in its oral presentation to the Court, regarding its findings on this and other matters. The Department has not taken the position (nor, presumably, could it, without some explanation of the documents that have been submitted to it) that Microsoft has not engaged in practices such as predatory preannouncements, or the seeding of what are referred to as "undocumented calls" (secret elements in an operating system that make a competitor's applications program operate less well than a rival Microsoft program).[8] Instead, the Department simply has asserted that it had determined that "no further action was warranted" on these matters -- presumably a conclusion that it asks this Court to take completely on faith, since it has provided the Court with literally no explanation for its decision.

Most remarkable of all, however, is the absence of any information in any of the Department's submissions regarding the adequacy of its proposed remedy for Microsoft's illegal monopolistic conduct. Based on the Department's own allegations, from 1988 to 1994 Microsoft used a variety of illegal tactics to maintain its monopolistic share in the rapidly growing

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[6] Id. at 6.

[7] Microsoft Corp. Employee Performance Review, dated May 4, 1987, supra, at 3 (Ex. 21).

[8] Examples of such "undocumented calls" will be described in Section IV, infra.

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operating systems market -- and thus increased the size of its installed base through the use of illegal tactics from no more than 18 million[9] to approximately 120 million users.[10] Having acknowledged that Microsoft thus illegally acquired its massive installed base, the Department nonetheless has failed to proffer any basis for concluding that simply prohibiting these practices in the future will remedy the unassailable position that Microsoft has gained as a result of its unfair and illegal practices.

Certainly no one in the industry believes that the Department's proposed remedies will have the slightest effect in unseating Microsoft from the position that it now illegally occupies. As one competitor observed after the consent decree was announced, "[t]he consent decree seems to have set [Microsoft] free. . . . Now, they are running rampant over

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[9] According to industry consultant Jerry Schneider, Microsoft's installed base in March 1988 was only nine to twelve million. Dump DOS? No Way, Not Yet, Computer Decisions, March 1988 at 50 ("between nine and twelve million DOS machines"). Indeed, according to Business Week, no more than twelve million PCs had been sold by April 1988. Will Sun Melt the Software Barrier, Business Week, April 18, 1988, at 72 ("Sun aims to coax a portion of the 12 million owners of PCs and clones into the UNIX camp.") The more expansive measure taken by industry analysts at International Data Corp. indicated there were "approximately 18 million IBM PCs and compatibles worldwide," in March 1988. Alan Radding, IBM PC Orphans Hang On To A Good Thing, Computerworld, March 7, 1988, at 81. Therefore, even under the assumption that Microsoft's operating system software had been installed in every IBM PC or compatible sold by 1988, Microsoft's installed base at that time was no larger than eighteen million. Cf. Christopher O'Malley, The New Operating Systems, Personal Computing, October 1986, at 181 ("better than 95 percent [of then-existing] PC's and compatibles use] Microsoft's disk operating system.").

[10] Amy Cortese, Next Stop, Chicago, Business Week, Aug. 1, 1994, at 24 ("120 million MS-DOS customers (including 55 million Windows users)"). See also OS Overview, Computer Reseller News, Aug. 22, 1994, at 223 (International Data Corporation table) (DOS and Windows installed base of 110.1 million).

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everything."[11] Microsoft entirely agrees. As Bill Gates observed in his response to the proposed decree:

> None of the people who run [Microsoft's seven] divisions are going to change what they do or think or forecast. Nothing. There's one guy in charge of [hardware company] licenses. He'll read the agreement.

Elizabeth Corcoran, Microsoft Deal Came Down to a Phone Call, Washington Post, July 18, 1994, at A1 (Ex. 42).

Nor have events since the decree was proposed provided the slightest basis for believing that the Department's proposed remedy will have any effect. In a nationally televised press conference on July 16, 1994, Attorney General Janet Reno predicted that the Department's settlement with Microsoft would have two results: it "will save consumers money [and] enable them to have a choice when selecting operating systems."[12] In fact, however, in the six months since the proposed settlement was announced, press reports indicate that Microsoft has literally doubled the price of its operating system to computer manufacturers.[13]

Moreover, far from the decree leading to an increase in competition in the operating systems market, a key competitor in that market, the maker of DR DOS, has subsequently withdrawn from the market. The competitor observed in withdrawing from the

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[11] Amy Cortese, No Slack for Microsoft Rivals, Business Week, Dec. 19, 1994, at 35 (Ex. 5).

[12] Attorney General Janet Reno, Department of Justice Press Conference Transcript Microsoft Settlement (July 16, 1994) at 2 (Ex. 12).

[13] Amy Cortese, Business Week, Dec. 19, 1994, supra, at 35 (Ex. 5) ("Computer makers have been startled to learn that they will be asked to swallow a huge price hike for their use of Windows 95 -- to as much as $70 per PC, vs. roughly $35 today.").

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market that "the battle for the desktop is over and MS DOS and Windows have won."[14] The withdrawal of DR DOS from the market is of particular note since it was DR DOS that the authors of Hard Drive pointed to as providing the most likely source of meaningful competition to Microsoft in the operating systems market. See Hard Drive, supra, at 398.[15]

Having failed to explain how its proposal will remedy Microsoft's illegal acquisition of its massive installed base in the operating systems market, the Department's submission does not even touch on Microsoft's use of that illegally acquired installed base to leverage into -- and acquire market power in -- other software markets. In analyzing the strength of the Department's case against Microsoft, Hard Drive identified Microsoft's weakness in application programs as the principal reason (apart from the competition provided by products such as DR DOS) why Microsoft's dominant position arguably would not hurt consumers. With respect to application programs, the authors in 1992 argued that

> Microsoft does not come close to dominating the Big Three of applications--word processing, databases and spreadsheets. WordPerfect is far ahead of Microsoft Word, Lotus 1-2-3 is still ahead of Excel, and Microsoft has nothing to compete against Ashton-Tate's dBASE.

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[14] Larry Campbell, Novell to Introduce SuperNOS Strategy, South China Morning Post, Sept. 20, 1994, at 1 (Ex. 37) (quoting Robert Frankenburg speech to Networld + InterOp '94 conference). See also Bob Lewis, Ten Troublesome Trends in Computing That Are Sure to Spook You, InfoWorld, Oct. 31, 1994, at 82 ("Let's all admit that NextStep and QNX should have all of the market if there was any justice," but Microsoft's "Windows and DOS have more than 80 percent market share, so the war is over!").

[15] Nor has the irony of this withdrawal been lost on the computer industry. As one observer noted: "July [of 1994] saw Microsoft in full agreement with the Justice Department. Microsoft agreed to withdraw the 'per processor' option that most PC suppliers found the cheapest way to buy DOS [in order to] encourage firms to offer alternatives to Microsoft's operating systems. Shortly afterward, Novell announced that it was stopping development of DR-DOS." Jack Schofield, Computing 94: Processor Wars and Rumors of Delays, Guardian, Dec. 29, 1994, at T14.

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Hard Drive, supra, at 398.

What a difference three years can make -- at least when, like Microsoft, a company can leverage its installed base in operating systems, and finance early losses in applications with monopoly profits from operating systems. Under the headline "MICROSOFT'S DOMINATION," Dataquest Inc. has reported the 1994 market revenue and share figures for the applications market:

> "Lotus 1-2-3, WordPerfect, dBASE, Paradox and Harvard Graphics once dominated their respective categories," said Dataquest analyst Karl Wong. "Today, Microsoft products have replaced each of these one-time product category leaders."

Microsoft's Domination, San Jose Mercury News, December 21, 1994, at 1F (Ex. 35).[16]

Microsoft did not achieve its dominant position in operating systems and applications through free and open competition on a level playing field. Rather, it used the illegal tactics challenged in the Government's complaint to create a huge installed base in operating systems. Then, it took unfair advantage of its installed base to give its own applications group a head start and its programs a performance advantage over applications competitors -- precisely the concern voiced in Hard Drive[17] and echoed by this Court.[18]

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[16] Indeed, in 1990 Microsoft began to bundle its application products together into so-called "suites." These suites are the fastest growing segment of the applications market, and Microsoft commands more than 85% of the suite market. See Personal Computing Software Worldwide, Dataquest, June 27, 1994, at 20 (selected pages at Ex. 11) (unit shipments of suites grew more than 350% in 1993); id. at 27 (Microsoft's 1993 market share for suites is 85.4%); Doug VanKirk, Integrated Office Suites, InfoWorld, Feb. 7, 1994, at 51 ("Microsoft owns a 90 percent share of the suite market. . . .").

[17] Hard Drive, supra, at 398-99.

[18] Tr. of Status Call, Sept. 29, 1994, at 25-28.

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"Microsoft has never had a hit among its MS-DOS applications programs."[19] Yet, in the past few years, Microsoft has come from nowhere to provide the lion's share of business application programs.[20]

As explained in this brief, Microsoft achieved that result by the illegal tactics charged by the Government, and by illegal tying techniques, monopoly leveraging, and otherwise predatorially exploiting its monopoly position in one market to achieve market power in other markets. Because of the type of economic forces that prevail in these markets, rigorous economic analysis predicts that, unless restrained by Government action, Microsoft will succeed in using its dominance in operating systems to monopolize all other aspects of transaction software, from desktop applications to online systems. Microsoft's goal is to identify and control every "strategic component," "choke point" or "leverage point" in the information economy.[21] And Microsoft is already close to achieving a complete lock-in in desktop applications.

This Memorandum of Amici argues that the Proposed Final Judgment is not in the public interest and should not be entered by this Court. Indeed, it is economically impossible to achieve the stated goals of greater choices and lower prices for operating systems without (1) addressing the increase in installed base that Microsoft has procured through illegal practices and (2) restraining Microsoft's use of that installed base to dominate the markets for applications and other software products.

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19 Ron White, Microsoft Gives the New Word, PC Week, Oct. 20, 1987, at 95.

20 See, e.g., Brent Schlender, Bill Gates: What Doesn't He Want, Fortune, Jan. 16, 1995, at 36.

21 Id. at 47.

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This Memorandum of Amici is divided into seven sections. This first section provides a summary and overview of the brief. The second section addresses the scope of investigation and power of this Court under the Tunney Act. In particular, the second section argues that, under 15 U.S.C. § 16(e), the Court not only can but should consider the effect of the proposed decree beyond the operating systems market. The section further argues that the Department's submission falls far short of providing the Court with an adequate record upon which to act, and provides no factual predicate for concluding that the decree's remedy is even arguably within the "public interest" under Section 16(e).

The remainder of the brief explains that the Government cannot effectively restore and maintain competition -- even in the operating systems market -- without addressing both the consequences of the "installed base" that Microsoft increased through illegal means, and the use of Microsoft's resulting market power more broadly. Section III describes the markets and technologies in which Microsoft operates and lays a foundation for an understanding of Microsoft's conduct and strategic direction. The section begins by describing the interrelationships among complicated software technologies and demonstrates that the various markets in which Microsoft competes are parts of a large network that can be entered by a competitor's product through a few key gateways, the principal gateway being the desktop operating system. Using economic analysis, the section then argues that the economic characteristics of the technologies and markets at issue differ markedly from other, more conventional industries, in that these products (software products) and markets (networks) exhibit "increasing returns," also sometimes called "network effects." The section discusses the underlying characteristics of the technology that gave rise to these conditions and the likely consequences that these circumstances will produce.

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Section IV of the brief explains Microsoft's strategy and evaluates Microsoft's prospects for complete domination of all of the interconnected software markets. The section begins by explaining that Microsoft increased its "installed base" in operating systems through the illegal practices charged in the Government's complaint. The section then explains and documents the fact that Microsoft pursues a strategy of leverage from "gateway" markets, like the desktop operating system in which it is dominant, to strategic markets in which its competitive position is weak (as was the case in applications). Microsoft targets such strategic markets, establishes marketing and technological links to those markets from established monopolies in gateway markets, and leverages its power to monopolize the target markets. In other words, it transfers the installed base of a gateway market it dominates to create an installed base in the strategic target market. The section focuses primarily on the desktop market, describing in some detail the method by which Microsoft (according to the Government's Tunney Act filing) used illegal activities to increase its installed base in operating systems and then leveraged its monopoly over the operating system to dominate applications. In particular, the section describes Microsoft's tactics of bundling and unbundling functions into and out of its operating system to disadvantage its competitors in the applications market.

Section V of the Memorandum of Amici applies "increasing returns" economics to suggest that Microsoft likely will achieve a monopoly position for its products throughout the entire personal computer network unless restrained by Government action. The section rejects various arguments that could be put forward to justify such monopolization, including the arguments (1) that alternative networks created by alliances of competitors will provide competition, and (2) that the benefits derived from integration of a single product line are worth the cost in loss of free competition throughout the network. The section concludes by suggesting

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that absent meaningful governmental intervention, the American software industry will be monopolized by Microsoft, with the only competition coming from protected markets and competition abroad.

Section VI evaluates the possibilities and prospects for governmental intervention from the legal perspective. The section begins with an evaluation of the proposed Final Judgment, observing that the Government's Tunney Act filing concedes that Microsoft, through the use of illegal practices, has acquired an enormous installed base that constitutes an overwhelming barrier to entry. The only sanction proposed by the Government, requiring Microsoft to cease the behavior that permitted it to acquire this entrenched installed base, will have no effect in diminishing the installed base, easing barriers to entry, or otherwise precluding Microsoft from using the illegally acquired installed base to monopolize the operating system market or other markets. The section considers specific strategies for relief adopted by previous Administrations in comparable situations and analyzes legal precedents supporting such strategies.

Finally, Section VII of the brief proposes procedures this Court may wish to adopt in order to exercise its appropriate role in Tunney Act proceedings. The section urges the Court to order the production of key Microsoft documents and to require the Government to produce detailed and predictive economic models of the type previously employed to support consent decrees adopted through Tunney Act procedures.

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II

THE PERMISSIBLE SCOPE OF THIS COURT'S REVIEW

In 1974 Congress enacted the Antitrust Procedures and Penalties Act ("APPA"), also known as the "Tunney Act," 15 U.S.C. §§ 16(b)-(h) (1994), out of concern with "prior practice, which gave the [Justice] Department almost total control of the consent decree process, with only minimal judicial oversight." United States v. American Tel. & Tel., 552 F.Supp. 131, 148 (D.D.C. 1982) ("AT&T"), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983). To remedy this practice, Congress sought to eliminate "judicial rubber stamping" of such consent decrees,[22] providing that "[b]efore entering any consent judgment ... the court shall determine that the entry of such judgment is in the public interest." 15 U.S.C. § 16(e). Circuit Judge Aldrich, sitting by designation in United States v. Gillette Co., 406 F.Supp. 713 (D. Mass. 1975) (cited by both the Department and Microsoft), observed upon reviewing the legislative history of the Act:

> The legislative history shows clearly that Congress did not intend the court's action to be merely pro forma, or to be limited to what appears on the surface. Nor can one overlook the circumstances under which the act was passed, indicating Congress' desire to impose a check not only on the government's expertise -- or at the least, its exercise of it -- but even on its good faith.

Id. at 715.[23]

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[22] As the sponsor of the Act, Senator Tunney, declared: "Specifically, our legislation will . . . make our courts an independent force rather than a rubber stamp in reviewing consent decrees, and it will assure that the courtroom rather than the backroom becomes the final arbiter in antitrust enforcement." The Antitrust Procedures and Penalties Act: Hearings on S. 782 and S. 1088 before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary, 93rd Cong., 1st Sess. (1973).

[23] Accord AT&T, 552 F. Supp. at 148 (Congress had "found that consent decrees often (continued...)

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Despite this clear statutory intent, the oral and written submissions in the present case have suggested that the Court's review should be circumscribed in ways not supported either by the statute or by existing case law. First, the submissions may be taken as suggesting that the Court should look only to the impact of the proposed decree on the operating system market in determining whether the decree is in the public interest. See, e.g., 59 Fed. Reg., at 59,429. The law, however, plainly is otherwise. For example, in United States v. BNS Inc., 858 F.2d 456 (9th Cir. 1988), -- a case relied upon by the Department -- the Court observed that "the statute suggests that a court may, and perhaps should, look beyond the strict relationship between complaint and remedy in evaluating the public interest." 858 F.2d at 462 (quoting United States v. Bechtel Corp., 648 F.2d 660, 666 (9th Cir.), cert. denied, 454 U.S. 1083 (1981)). While the court's public interest determination may not be based on a different market from the one identified in the complaint, the Ninth Circuit emphasized that this did not mean that only effects on that market can or should be considered:

> [T]he statute clearly indicates that the court may consider the impact of the consent judgment on the public interest, even though that effect may be on an unrelated sphere of economic activity. For example, the government's complaint might allege a substantial lessening of competition in the marketing of grain in a specified area. It would be permissible for the court to consider the resulting increase in the price of bread in related areas.

Id. at 463 (emphasis added).

Under the Department's own authority, therefore, the Court's inquiry is not limited to the effect of the proposed judgment on the operating system market. To the contrary,

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[23](...continued)
failed to provide appropriate relief, either because of miscalculations by the Justice Department or because of the 'great influence and economic power' wielded by antitrust violators").

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the Court can (and, it is submitted, should) determine the effect of the proposed judgment on other areas impacted by Microsoft's monopolistic conduct. As will be discussed in more detail in Section IV, infra, for example, Microsoft has used its illegally acquired market position to leverage into and acquire a monopoly in other related markets. The failure of the decree to "break up or render impotent [this] monopoly power found to be in violation of the Act." AT&T, 552 F. Supp. at 150 -- indeed, its tacit decision to leave Microsoft free to profit from its unlawful market power by leveraging into other software markets -- is something that the Court should consider in evaluating the public interest served (or disserved) by the proposed decree.

A second limitation implied in the submissions to the Court also is without authority in the case law, namely, that the Court is limited to considering those matters that the Department has identified in its complaint. That is not the law. See, e.g., BNS, 858 F.2d at 462 ("a court may consider matters not discussed in the complaint"); Gillette, 406 F.Supp. at 715 ("Congress did not intend the court's action to be . . . limited to what appears on the surface"). Indeed, simply accepting at face value the Department's analysis -- and even its good faith -- amounts to precisely the kind of "rubber stamping" that the APPA expressly rejects. The Court is required, in evaluating the Department's proposed decree, to determine whether it "meets the requirements for an antitrust remedy -- that is, if it effectively opens the relevant markets to competition and prevents the recurrence of anticompetitive activity." AT&T, 552 F. Supp. at 153. If the Department has determined not to address a practice -- for example, Microsoft's "bundling" of operating and applications programs, discussed in more detail in Section IV, infra -- which forecloses any meaningful chance of competition in the operating systems market, that fact must be considered by the Court in assessing the adequacy of the decree as a remedy for the charged violations. That is so regardless of whether the Department

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has chosen to turn a blind eye to the consequences of such bundling on the effectiveness of its proposed decree.

Finally, prior submissions to the Court have emphasized that in assessing whether the decree is in the "public interest" under Section 16(e), the Court should not "determine whether the resulting array of rights and liabilities is the one that will best serve society, but only to confirm that the resulting settlement is within the reaches of the public interest." United States v. Western Electric Co., 900 F.2d 283, 309 (D.C. Cir. 1990), cert. denied, 498 U.S. 911 (1990) (citations and quotations omitted; emphasis in original). This standard clearly is correct, but the parties' further assertion -- that the submissions already made by the Department are sufficient to satisfy this standard -- equally clearly is not.

A comparison of the information provided in those cases relied upon by the Department, with that provided here, highlights just how far short the Department has fallen in providing this Court with an adequate record upon which to act. For example, the Department relies heavily upon the Court of Appeals' decision affirming a modification of the consent decree in United States v. Western Electric Co., Inc., 993 F.2d at 1572. See 59 Fed. Reg. at 59,429.[24] However, in finding that there was a sufficient "factual foundation for the judgment call made by the Department of Justice and to make its conclusion reasonable," 993 F.2d at 1582, the Court of Appeals in that case expressly pointed to the "array of prominent economists (including two Nobel laureates, Stigler and Arrow)," who had submitted affidavits in the record that supported the Department's position. These affidavits provided detailed support for the

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[24] An initial difference between that case and the present one, of course, is that the initial decree in that case was entered after the District Court had already heard approximately 11 months of trial testimony from roughly 350 witnesses. See AT&T, 552 F. Supp. at 140.

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factual predicates underlying the Department's proposal, including the view that the Bell operating companies would not be able to discriminate or engage in cross-subsidization; that government oversight would be effective in regulating their behavior; and that the proposal would enhance competition in the relevant markets. See id. at 1578-82.

This Court, by contrast, has not been provided with the affidavit of any economist, or for that matter of anyone else, that would provide a factual predicate for any of the matters that it must decide in reviewing the adequacy of the proposed decree. The Department has provided no factual basis (other than its say-so) for believing that the remedies proposed in the decree would be sufficient to "pry open to competition" the operating systems market, AT&T, 552 F. Supp. at 150; that Microsoft's other anticompetitive practices (undocumented calls, predatory preannouncements, anticompetitive bundling and unbundling, early disclosure to Microsoft applications programmers) will not undermine the effectiveness of the decree; and so forth. Although this case involves an industry of unquestioned significance to the future of the American economy -- one of comparable importance to AT&T itself -- the Department has in fact given this Court nothing to go on other than the purest ipse dixit. Indeed, it is hard to imagine how the Department could claim that its request for approval of the decree amounts to anything but a request for a "rubber stamp" when it has so notably failed to say anything other than "trust us."

Nor does the Department's submission compare favorably with the information available to other courts in cases cited by the Department. In Gillette, for example, which first formulated the "reaches of the public interest" standard, see 406 F. Supp. at 716, Judge Aldrich concluded that he was able to make an independent determination regarding the adequacy of the proposed decree because "the record [in the case] is both open and extensive." Id. at 715.

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Here, the record is neither. Indeed, the transcripts of the hearings on September 29, 1994 and November 2, 1994 are replete with inquiries by the Court regarding matters inextricably tied to the adequacy of the proposed remedy -- inquiries that repeatedly failed to yield any information at all, or (even worse) information that is at odds with the record.

The example of preannouncements already has been discussed above: despite Microsoft's unequivocal denial, and the Department's silence, the documentary record shows that such predatory preannouncements in fact are used by Microsoft. Nor is this the only example highlighted by the transcript. Equally striking is the Court's effort to ascertain whether the Department had concluded that a "Chinese Wall" exists between Microsoft's operating system and applications divisions. Noting the discussion of this point in Hard Drive, the Court may have been left with the impression during the hearing that such a "Chinese Wall" in fact exists. See Tr. of Status Call, Sept. 29, 1994, at 27:11-28:1. Certainly that is the impression that Microsoft previously has sought to convey, dating all the way back to 1983.[25] Indeed, throughout the spring and summer of 1991, after the FTC announced its investigation of Microsoft in March 1991, Microsoft persisted in its claim that the company's applications and systems development groups were separated.[26]

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[25] See, e.g., A Fierce Battle Brews Over the Simplest Software Yet, Business Week, November 21, 1983, at 114 (Ex. 2) (quoting Microsoft executive Steve Ballmer) ("There is a very clean separation between our operating system business and our applications business . . . It's like the separation of church and state").

[26] See, e.g., Paul Andrews, Can Microsoft Just Do It?, Seattle Times, March 18, 1991, at B1 (Microsoft "repeatedly" asserted "that a 'Chinese Wall' exists between its applications and systems divisions"); Microsoft and IBM Under Investigation by FTC, Technical Computing, Apr. 1, 1991 ("Microsoft maintains that it does not take unfair advantage of advance knowledge of operating systems in designing its consumer products. It says there is a 'Chinese Wall' between systems and applications"); Michael Stroud, FTC Widens Probe of Microsoft

(continued...)

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Now, however, at the end of a long footnote in its written submission, Microsoft disavows that any such "Chinese Wall" exists -- and, indeed, derides the idea as "irrational." See Microsoft Mem. at 7 n.12. The Department, again, has been silent. Was its determination that "no further action [is] warranted" on this issue, 59 Fed. Reg. at 59,427, based on Microsoft's earlier representation that a "Chinese Wall" in fact exists? Was it based on the conclusion that there is no "Chinese Wall," but it does not matter? If not, why not?

The answers to these and other questions may remain unanswered because no satisfactory answer is available. As shown in Sections III through VI, infra, the Government cannot effectively restore competition in the operating systems market without addressing the consequences of Microsoft's illegally-acquired "installed base," and its broader use of its acquired market power. The Government's proposed consent decree, however, fails to do either.

III

THE ECONOMIC CHARACTERISTICS OF THE SOFTWARE INDUSTRY

Section III is divided into two parts. Subsection A provides background by describing the structure of the software industry and how it has changed over time in response to

[26](...continued)
Dominence, Investor's Daily, Apr. 15, 1991, at 1 ("Microsoft maintains that it keeps a 'Chinese Wall' between its operating system and applications divisions to prevent such an unfair advantage from occurring"); Sean Silverthorne, AMD Files $2 Billion Antitrust Suit Against Intel, Investor's Daily, August 30, 1991, at 1 (Microsoft responds to charges that its application developers receive "inside knowledge" about the company's operating systems by claiming that Microsoft "has erected a 'Chinese Wall' between the two operations.").

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Microsoft's prior conduct in the market. Subsection B describes the economic characteristics of the technologies and markets at issue here.

A. Market And Technology Background

The relevance of much of the material in this section, particularly the schematic diagrams, is fleshed out and explained to a great extent in the subsequent sections. If the Court is unfamiliar with these markets, the Court may find it useful at this point to read The Economist[27] article, and the Harvard Business Review[28] article, both found in the Appendix.

At the outset, two characteristics of these markets and technologies should be emphasized. First, the products at issue are software products, composed almost entirely of intellectual property content. Because of the nature of software, there can be greater flexibility in the formation of vertical relationships than often is present with respect to more conventional products. Unlike a pipeline, for example, many competitors can vertically link their software, through software compatibility, to products in the markets above and below them. So, for example, a number of different companies can make word processing application programs that work equally well with Microsoft's operating system so long as they all have the same technical information on a timely basis. It is not necessary for Microsoft to bundle -- or literally tie together -- its operating system and word processing program in order to ensure that the two programs work well together. With software, the efficiency benefits of vertical integration can be achieved without foreclosing access to competitors.

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[27] The Computer Industry Survey: Reboot System and Start Again, The Economist, Feb. 27-Mar. 5, 1993, at 3 (Ex. 14).

[28] Charles R. Morris and Charles H. Ferguson, How Architecture Wins Technology Wars, Harv. Bus. Rev., Mar. 1993, at 86 (Ex. 16).

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Second, the Stipulated Complaint and Final Judgment in this case focus on the personal computer operating system and the applications that run on top of it. Together, the personal computer operating system and the applications that run on it are sometimes known as the "business desktop." But the desktop is really only an interrelated component of a network that contains desktops (or "clients") and "servers." These software networks bear many of the characteristics that economists have associated with networks in other industries, including "increasing returns" or "network effects," as described in Subsection B. Indeed, software networks manifest increasing returns, or demand-side economies of scale, more strongly than networks in more conventional industries.

The network at issue here has four components, two on the "business" side and two on the "home" side. On both the home and business sides, there is a desktop, or "client," component, and a "server" component that links the desktop into a broader network. The network as a whole can be diagramed as follows:

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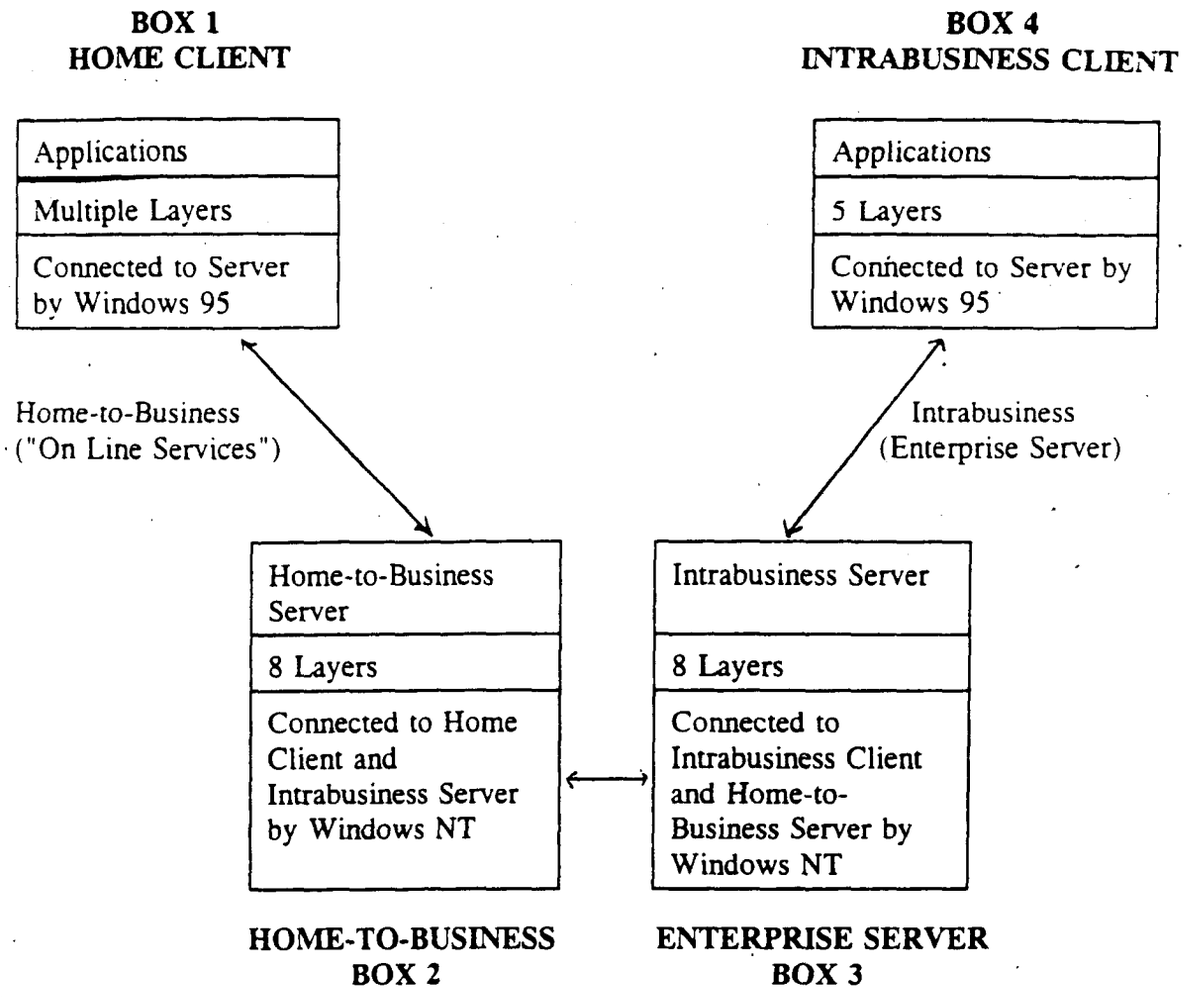

Figure 1

The following description attempts to provide some explanation for each of these boxes: the intrabusiness client, which runs on the "desktop"; the enterprise "server," meaning the hardware and software applications that run on a more centralized computer and that link the clients together; the home "client;" and the home-to-business server, that similarly links home personal computers ("PCs") into a larger network. This brief then discusses two particular technologies that play a critical role in understanding Microsoft's strategy: OLE and Windows.

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1. The Business Desktop

The personal computer or "PC" was initially devised as a stand-alone device, but today it is usually used as part of a network. This is certainly the case in business, and will increasingly be the case in the home.[29] The PC, both stand-alone and as part of a network, is often referred to as "the desktop." The FTC Investigation and the DOJ investigation of Microsoft have focussed on the desktop.

Prior to Microsoft Windows, the intrabusiness "client side" or desktop could have been thought of as having four layers.

Level	Name	Examples
4	Applications	Lotus 1-2-3, dBASE, WordPerfect, Harvard Graphics
3	Development Tools	Basic, Pascal, C
2	OS	Apple, CPM, MS DOS, DR DOS
1	Hardware	IBM, Apple, Kaypro

Figure 2

[29] See, e.g., All Things Considered (NPR broadcast, Nov. 17, 1994) ("if there's a sub-theme to this whole [Comdex] conference, it's networking, and Microsoft is the company that wants to connect all those different boxes that are going to be in your house."); Elizabeth Corcoran, Microsoft Heads Home: Software Giant Targets Huge Consumer Market With a Host of High-Tech Innovations, Washington Post, Nov. 13, 1994, at H1 (Ex. 44).

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Today, the market looks more like Figure 3 below. It reflects two principal changes, each of which will be explained in Section IV, infra. First, Microsoft succeeded in forcing the market to migrate to a new operating system or "OS" (Windows), thereby inserting a new layer, the "graphical user interface" (GUI) layer (layer 3), between the operating system and the applications. Second, using its leverage in layers 2 and 3, it has become dominant as well in development tools (layer 4) and business applications (layer 5).[30]

Level	Name	Examples
5	Applications	(a) Desktop applications (e.g., Lotus 1-2-3, dBASE, MS Word, MS Excel, WordPerfect) The Microsoft Office is a bundle of these applications made exclusively by Microsoft. (b) Client applications as part of a network (e.g., Oracle Financials, SAP, Peoplesoft, D&B Software, etc.)
4	Development Tools	Basic, Pascal, C, Borland C++, Powersoft
3	GUI and/or OS Services	MS Windows
2	Operating System	DOS, Apple, OS2/WARP, UNIX
1	Hardware	IBM, Apple, Compaq, Dell

Figure 3

[30] Layer 5 has been broken out into two parts to reflect the development of what are known in the industry as "client-server" applications: applications that run partially on the desktop, and partially on server hardware connected to the desktop by a computer network.

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The Justice Department investigation of Microsoft has focussed primarily on operating systems (Levels 2 and 3 in Figure 3), -- but the Government's Tunney Act submission also considers the applications layers (Levels 4 and 5) insofar as they impact competition in operating systems. In order to evaluate the proposed Final Judgment, a slightly more detailed understanding of the operating system layer is necessary.

The Government's complaint defines the market as operating systems that run on the Intel chip set (known as "X86" chips). 59 Fed. Reg. at 42,847 (Complaint ¶ 13). There were formerly three principal operating system vendors for this market -- Microsoft (MS DOS and Windows), Novell (DR DOS) and IBM (PC-DOS and OS/2). Novell, as indicated above, has withdrawn from this market, and Microsoft is unquestionably a monopolist, currently enjoying a greater than 90% market share.[31] Software written for the current version of Windows (v. 3.1) and prior versions will also run on the IBM OS/2 operating system. However, software written expressly for Microsoft's next release of Windows (Windows 95), due out in August of 1995, will not run on the IBM OS/2 operating system. Don Clark and Laurie Hays, Microsoft's New Marketing Tactics Draw Complaints, Wall St. J., Dec. 12, 1994, at B6 (Ex. 41).

There are a few other competing desktop operating systems that run on different chip sets. For example, Apple's Macintosh operating system runs on a Motorola chip set. And the UNIX operating system generally runs on a specially designed chip, such as the "RISC" (reduced instruction set) chip designed by Sun Microsystems.

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[31] PC Week, Feb. 21, 1994, at 39 (Paine Webber, Inc. Table) (excluding sales of Macintosh -- which does not use X86 chips -- Microsoft's 1994 market share was 92.4%). See also Computerworld, Dec. 6, 1993, at 99 (International Data Corp. Table) (Microsoft 1992 market share is 92.5%).

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Even including these other operating systems in the same market as those that run on the Intel chip, Microsoft has an overwhelming market share, with well over 85%. As the Government's Complaint correctly points out, applications software written for an Intel chip operating system will not run on the Apple Macintosh or Sun RISC workstation without significant modification -- known as "porting." Frequently, porting application software to a new chip set and operating system entails a significant re-engineering of the software. Hence, the Government does not include operating systems for the different chip sets within the same antitrust market.

However, the Government fails to point out that the only companies in the market for developing business application software for the operating systems sold by Apple and Sun, for example, are also the business application vendors on the Windows platform -- e.g., Novell/WordPerfect, Lotus, Borland, etc., and Microsoft, itself, of course. The significance of this fact is discussed in greater detail infra. The point here, however, is that if Microsoft were able to monopolize the market for business applications software, it would severely inhibit competition from vendors of operating systems that run on other chips but nevertheless compete with the Microsoft operating system (e.g., Apple and Sun).[32]

Figure 4 shows what the intrabusiness client side probably will look like once Microsoft's strategy of vertical integration of markets within the client is completely executed.

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[32] The situation with respect to UNIX is slightly more complex, but in the final analysis, the situation is the same. UNIX has a strong following among technical engineering (as opposed to business) users of computers. There are companies that have written technical engineering application programs (such as "computer aided design" programs) to run on UNIX. But, as with Apple, the business applications vendors for the UNIX platform are the same companies that write applications for Windows. Hence, by controlling business desktop application programs, Microsoft can keep UNIX from penetrating the business desktop market.

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It shows the completion of Microsoft's leverage from layers 2 and 3 to further its domination of all aspects of layers 4 and 5.

Level	Name	Examples
5	Applications	Desktop Applications, e.g., Microsoft Word, Microsoft Excel, Microsoft Access, and Client Server Applications
4	Development Tools	MS Basic, MS C, MS C++, Microsoft Visual Basic, Microsoft Visual C++, OLE
3	Graphical User Interface	MS Windows
2	Operating System	MS DOS
1	Hardware	X86 PC Hardware and Other Hardware in Figure 3

Figure 4

2. The Intrabusiness Server

The "server" is the direct lineal descendant of the mainframe computer. Prior to the advent of the personal computer, companies operated using a mainframe, to which "dumb" terminals were connected. Personal computer technologies now allow many computing functions to be performed on the desktop by an individual worker, but workers within a business still need to share information with each other and access a body of data simultaneously. The "server," a dedicated hardware platform with its own server operating system, allows this to happen. Indeed, increasingly, workers within a business will want simultaneous access to several bodies of data and several different application programs, so that, for example, textual documents containing spreadsheets can be prepared by a number of employees working at the same time.

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There are two basic components of the server markets. The intrabusiness server is the backbone of business. Microsoft has projected that there will be 300 million servers in the business community, running everything from phone systems, to copying systems, to cash registers. J. William Semich, The Long View From Microsoft: Component DBMSs, Datamation, Aug. 1, 1994, at 40 (Ex. 10). If a single company controls all business server markets and applications, that company has far greater market power in various sections of the economy than, say, mere control of the desktop would bestow. The second server component, home-to-business, will be described in a subsequent section.

Today, the "server" side of the intrabusiness environment has approximately eight layers. It would unnecessarily complicate this brief of amici to describe the intrabusiness server markets in great detail. There are, however, three important points about the intrabusiness server markets that are relevant for this Court's consideration. First, the most important layer in the server market is the operating system level. The two leading competitors in this market at present are Novell's "Netware" product and Microsoft's NT product.[33] The operating system is important because the other products in the server market run on top of the server operating system in much the same way as desktop applications run on top of Windows. The operating system level is also important because it is the level through which the server is connected to the business desktop and (through on-line services) to the home client.

Second, as was the case on the desktop four years ago, competition is vigorous at all levels of the server market. At each of the eight levels, there are a number of competitors,

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[33] Laura DiDio, NetWare, NT Server to Divide Lion's Share, Dec. 26, 1994, at 77 ("The network operating system arena looks like a two-horse race in 1995, with Novell, Inc.'s NetWare 4.1 and Microsoft Corp.'s Windows NT Server 3.5 locked in a battle for first place.").

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each striving to make better products at cheaper prices. This condition represents a significant (and welcome) departure from the state of the computer industry prior to the advent of personal computer and server technology. In an earlier period, there were only a few vertically integrated companies in the computer industry, such as IBM, DEC and Wang. These companies attempted to supply all aspects of computer technology -- from the underlying chips and operating systems, to applications, to distribution, and even including service and support of previously sold computers. Generally speaking, consumers have benefitted enormously by the fragmentation of the industry into horizontal layers characterized by vigorous competition. Consumers have been able to choose the technologically superior and most cost effective product at each level and combine those products into a system that addresses the consumers' needs. The pro-competitive benefits of the industries' current horizontal alignment is discussed in some detail in the Economist article (Ex. 14).

Finally, Microsoft is pursuing a vertical integration strategy on the intrabusiness server side similar to that pursued on the business desktop side. This strategy is only briefly discussed elsewhere in this paper. The Court can get further information concerning Microsoft's strategy, goals and prospects for success from the following articles found in the Appendix: Stuart J. Johnston and Ed Scannell, Server Suite Could Squeeze Market, Computerworld, Oct. 10, 1994, at 4 (Ex. 7); How Microsoft's Server Strategy Will Change The Industry - Parts I & II, Report by Summit Strategies Inc.; J. William Semich, Datamation, Aug. 1, 1994, supra, at 40 (Ex. 10). Obviously, after complete execution of this strategy, Microsoft products would be dominant or exclusive on each of the server layers.

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3. The Home-to-Business Server

The second aspect of server technology is the home-to-business server market, sometimes known as "online services." Today, most online services run off mainframe computers the way LEXIS and NEXIS do. Businesses will increasingly need to sell directly into the home through online services in order to remain competitive. Control by a single company of the home-to-business server market would have significant economic ramifications.

Although there is a vigorous online services market in place, the home-to-business server does not yet exist, except in Microsoft's plans. It can be readily assumed that the home-to-business server would look much like the intrabusiness server, with only Microsoft products being vertically integrated.

Level	Name	Examples
8	Vertical Applications	Home banking, home shopping, news, product support, portfolio management, plus other "Marvel" (the Microsoft online service) applications
7	Horizontal Applications	
6	Development Tools	Same as Intrabusiness Server, plus Blackbird (OLE-based development tools; see InfoWorld 10/24/94)
5	Server Applications	Microsoft EMS E-mail; Microsoft Tiger Video Distribution
4	Database Services	Microsoft SQL Server (bundled with Marvel)
3	OS Services	Windows NT (bundling MS Services)
2	OS Networking	Windows NT (with Marvel Server Code)
1	Hardware	Intel or Alpha (DEC) chip

Figure 5

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4. Home Computer Market

The home computer market is in its incipiency. The most important applications programs on the home client are "home banking" (also sometimes known as "personal finance") and tax preparation.[34] The most successful company in this market, Intuit, Inc., makes the largest selling home banking ("Quicken") and tax preparation ("TurboTax") programs. The only substantial competition to Intuit's products comes from Microsoft. Yet, despite a very substantial commitment in marketing staff and resources, Microsoft has gained only a 10% share. Microsoft has therefore elected to take over the home finance market by purchasing the leading software developer, Intuit, rather than by making better products to compete against it. The Microsoft acquisition of Intuit was announced on October 13, 1994 and is still under review by the Department of Justice. It is the largest acquisition in the history of the industry with Microsoft paying twice as much for Intuit as that company was worth in the stock market.[35]

The Microsoft acquisition of Intuit is highly strategic. It is a key element in Microsoft's plans to dominate all of information processing and will be discussed in a subsequent section. If the Microsoft-Intuit deal is consummated, it is not difficult to project what the home client will look like given Microsoft's recent announcement concerning "Marvel" (described in a subsequent section).

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[34] See, e.g., Michelle Flores, Probe of Microsoft is Extended -- Justice Dept. Asks For More Information, Seattle Times, Nov. 22, 1994, at B11 (electronic banking is the "killer app. of the '90s").

[35] Prior to rumors of the acquisition, Intuit's stock traded at 40 3/4. John Eckhouse, Giant Microsoft Buys Intuit for $1.5 Billion, San Francisco Chronicle, Oct. 14, 1994, at A1, A19. Each Intuit share is to receive 1.336 Microsoft shares at the closing. Id. Based on Microsoft's January 3, 1995 closing price of 60 3/16, each Intuit share receives over $80.

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Level	Name	Examples
5	Applications	Microsoft Works, Quicken (Intuit), TurboTax, Encarta, etc.
4	Development Tools	For example, language features of Microsoft Excel
2-3	GUI/OS/Networking	Windows 95 with Marvel Client Code
1	Hardware	PC Hardware

Figure 6

In summary, in each of the four components of the software industry, Microsoft's overall business approach and strategy is based on the creation of technological linkages between layers within the same market (e.g., DOS to Windows on the desktop) and between layers in one market and corresponding layers in another market (e.g., Windows NT to the Microsoft Network to Windows 95 on the home client). To fully understand Microsoft's strategy and its economic implications, however, it is necessary to understand two additional strategic Microsoft technologies: OLE and Windows. This Memorandum of Amici will address each in turn.

5. OLE

OLE (object linking and embedding) is a strategic technology for Microsoft on both the client and server side. It is the Microsoft-imposed standard for sharing information both among applications, and between applications and the operating system. During the Justice Department investigation, desktop application companies complained that Microsoft seeded OLE to its own application developers before giving it to ISV's (independent software vendors),

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thereby giving its own applications a lengthy head start over the competition.[36] As set forth in a subsequent section, these charges are supported by ample evidence and constitute the clearest examples of Microsoft's use of operating system information and specifications to achieve an unfair head start in the application markets. This is precisely the issue raised by this Court.[37]

Even more striking is the fact that Microsoft continues to exercise the very same strategy on the server side. See, e.g., J. William Semich, Datamation, Aug. 1, 1994, supra, at 40, 41-44 (Ex. 10) ("If you think OLE is everywhere in the future, the answer is yes"). Microsoft has made it clear that OLE will be strategic technology for the home-to-business server market, but Microsoft has not provided sufficient specifications to independent database server providers to enable them to release equally well-behaved products on the same time schedule as Microsoft's own products.[38]

6. Windows

The business desktop connects to the server through the Windows operating system ("OS") and the home-to-business server ("online services") also connect to the home computer through the Windows operating system. Microsoft has several different Windows

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[36] See Brian Livingston, Undocumented Windows Calls, InfoWorld, Nov. 16, 1992, at 98 (Ex. 19); Doug Barney and Ilan Greenberg, ISVs Dampen Microsoft Furor for OLE, InfoWorld, July 18, 1994, at 1.

[37] Tr. of Status Call, Sept. 29, 1994, at 25-28.

[38] Microsoft has made numerous presentations around the country that specifically make this point and written documentation from these presentations has been provided to the Justice Department.

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products that provide OS, GUI and networking capabilities. A brief (and superficial) description of these products is included at this point to avoid confusion.[39]

a. Desktop

Microsoft's first Windows products were targeted for the desktop and were built on top of Microsoft's dominant desktop operating system MS-DOS. Because of their DOS legacy, these products are unable to take full advantage of the capabilities of the 32-bit microprocessors they run on. Microsoft's current product in this area is Windows 3.1, which, due in part to the illegal per-processor licensing challenged by the Government, is pre-installed on most desktop systems presently sold.

Microsoft plans to proliferate Windows 95 (also known in the press as "Chicago" or "Windows 4.0") widely next year as the successor to Windows 3.1. Windows 95 is a true 32-bit operating system, but it is being targeted to the mainstream personal computer market. It also includes advanced networking features.

Windows NT was Microsoft's first true operating system for 32-bit microprocessors. NT's principal use is in the server market (discussed below) but Microsoft has also targeted its NT marketing to power users running high-end personal computers or workstations.

b. Server

Windows NT can also be used as an operating system for a network server. Microsoft markets a version of NT with advanced server capabilities, called Windows NT

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[39] For a more thorough discussion, see Miles B. Keyhoe, The Winds of Change, HP Professional, Aug. 1994, at 40 (Ex. 17). See also Microsoft Corporation, Microsoft Windows NT and Client-Server Computing, May 1993.

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Advanced Server, as an enterprise-wide computing solution. Microsoft offers a suite of applications for Advanced Server called "BackOffice" that includes database services, electronic mail, systems management, and connectivity to mainframe and minicomputers.

Microsoft's vision for enterprise computing is being marketed through its plans for a replacement for Windows NT currently code-named "Cairo." Cairo brings object-oriented technology into the file server and operating system. Microsoft already controls object standards through it OLE specification, discussed in the next subsection. See J. William Semich, Datamation, Aug. 1, 1994, supra, at 41-44 (Ex. 10).

B. Free Market Forces in Increasing Return Industries

In some industries, companies generally compete on a "level playing field." In such industries, diminishing returns to scale ensure that the forces of the free market will naturally gravitate toward an equilibrium point which maximizes the production of goods and services and results in the most efficient allocation of resources. Under such conditions, antitrust enforcers as well as business executives can count on the fact that superior products will necessarily prevail in free and open competition.[40]

Free market forces in other industries -- including those at issue here -- do not exhibit such qualities. Rather, they exhibit "increasing returns." In such industries, there is more than one equilibrium point and there is no reason to expect the free market to reach equilibrium at a point that most efficiently allocates resources.[41] The markets in such industries

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[40] W. Brian Arthur, Positive Feedback in the Economy, Scientific American, Feb. 1990, at 92, 93 (Ex. 36).

[41] Id. at 92 (Ex. 36).

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can easily be manipulated by a company with a large "installed base,"[42] with the result that superior products of competitors are not likely to prevail in the free market.[43] Indeed, in "increasing returns" industries, there is every reason to believe that consumers will get "locked into" the first product that appears on a new platform, even if the product is technologically inferior.[44] Similarly, a company with a large installed base in one market can give its inferior product in a second market an insurmountable advantage over competitors in the second market by integrating the products from the two markets together technologically.[45]

Some of the early economic research in the area focused on perceived anomalies -- particular standards that became locked in, notwithstanding their obvious inferiority. Stanford economist Paul David identified several such examples, the most famous of which is the layout of the common typewriter keyboard, known as the "QWERTY" configuration because of the order of the keys in the second row of the keyboard.[46] Primitive typewriters were unreliable mechanical devices and the QWERTY keyboard, at least according to the folklore, was therefore

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[42] "Installed base" in the economic literature "means the number of owners of a good who may be dependent on the manufacturer of the good for the provision of complementary goods." Joseph Katten, Market Power in the Presence of an Installed Base, 62 Antitrust L.J. 1, 4 (1993).

[43] Joseph Farrell and Garth Saloner, Installed Base and Compatibility: Innovation, Product Pre-Announcements, and Predation, Amer. Econ. Rev., Dec. 1986, at 940; Janusz A. Ordover and Garth Saloner, Predation, Monopolization, and Antitrust, in Handbook of Industrial Organization 537, 565 (R. C. Schmalensee and R. Willis eds., 1989).

[44] W. Brian Arthur, Scientific American, Feb. 1990, supra, at 92-93 (Ex. 36).

[45] See, e.g., Garth Saloner, Economic Issues in Computer Interface Standardization, Econ. Innov. New Tech., 1990, at 140-142.

[46] See, e.g., Paul A. David, Clio and the Economics of QWERTY, Amer. Econ. Rev., May 1985, at 332; David A. Harvey, Ergonomic Issues Have Taken a Backseat to Performance, Resulting in a Growing Tide of Computer-Related Injuries. Change is Needed - Now!, Byte, Oct. 1, 1991, at 119.

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deliberately designed to be dysfunctional so that typists would not strike the keys so rapidly that the device would jam. Obviously, modern software and computers can process keystrokes far more quickly, yet consumers are locked into the QWERTY standard. There are even allegations "that the combination of constant repetitive motion and inefficient finger movements that QWERTY requires is the ticket to the most well-known [repetitive stress injury] RSI, carpel tunnel syndrome," yet we go right on teaching it in elementary schools.[47] Superior keyboard layouts were developed years ago but were unsuccessful in dislodging the clearly inferior design that established itself as an early standard.[48]

By the late 1980's, economic analysis was finally able to explain such situations more clearly. Economists at Stanford and the University of California at Berkeley published leading articles demonstrating that market characteristics long viewed as anomalous were, in fact, widespread in high technology industries.[49] By the mid-1990's, increasing returns economics has become widely accepted as mainstream economic analysis.[50] There is now extensive theoretical literature with direct empirical application to many leading industries, including telecommunications, broadcasting, computers, and ATMs.[51]

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[47] See David A. Harvey, Byte, Oct. 1, 1991, supra, at 120.

[48] Joseph Farrell & Garth Saloner, Amer. Econ. Rev., Dec. 1986, supra, at 942; Jean Tirole, The Theory of Industrial Organization at 405, n.40 (1988)

[49] W. Brian Arthur, Scientific American, Feb. 1990, supra, at 93.

[50] See W. Brian Arthur, Increasing Returns & Path Dependence in the Economy, 1994, at ix (forward Kenneth J. Arrow).

[51] For the theoretical literature see, for example, the recent Symposium on Network Externalities in the Journal of Economic Perspectives, Spring 1994, the Symposium on Compatibility, edited by Richard Gilbert in the Journal of Industrial Economics, March 1992, and the survey by Paul David and Shane Greenstein in the Economics of Innovation and New

(continued...)

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Increasing returns are present in industries throughout the economy, but two high technology market situations, in particular, give rise to increasing returns. First, users of high technology products are frequently electronically connected in a network. Networks exhibit and produce certain important economic results. Because the purpose of a network is to enable communication with others, the value of the network increases with the total number of users who join the network.[52] Consequently, once a network such as a telephone network is in place, a competing network would have to enter the market with at least as large a number of nodes in order to displace (or even compete meaningfully with) the first network.[53]

A second factor that gives rise to increasing returns is referred to as "compatibility" in the economic literature. Unlike more conventional industries, the value of the technology to end users in increasing returns industries increases with the number of users who

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[51](...continued)
Technology, 1990. For an application to telecommunications, see Stanley Besen and Garth Saloner, The Economics of Telecommunications Standards, in Changing the Rules: Technological Change, International Competition, and Regulation in Communications 177 (1989); for applications to broadcasting, see Stanley Besen and Leland Johnson, Compatibility Standards, Competition, and Innovation in the Broadcasting Industry (1986); for applications to ATMs, see Garth Saloner and Andrea Shepard, forthcoming in the Rand Journal of Economics, and Steven Salop, Deregulating Self-Regulated Shared ATM Networks, Econ. of Innov. and New Tech., 1990; and for computers, see Garth Saloner, Econ. Innov. New Tech., 1990, supra.

[52] This "network effect" has been described by numerous authors. In a recent Symposium in the Journal of Economic Perspectives, Michael Katz and Carl Shapiro write, "Consequently, as has long been recognized, the demand for a network good is a function of both its price, and the expected size of the network." See also Jeffrey Rohlfs, A Theory of Interdependent Demand for a Communications Service, Bell J. of Econ., Spring 1974, for an early reference, as well as Michael Katz and Carl Shapiro, Network Externalities, Competition, and Compatibility, Amer. Econ. Rev., June 1985; Joseph Farrell and Garth Saloner, Amer. Econ. Rev., Dec. 1986, supra; and other papers cited in Michael Katz and Carl Shapiro, Systems Competition and Network Effects, J. of Econ. Perspectives, Spring 1994.

[53] See Julio J. Rotemberg and Garth Saloner, Interfirm Competition and Collaboration, Strategic Options, 1991, for an example of the power of network size.

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use compatible technology. While the "network" feature draws its force from physical interconnection, the "compatibility" factor arises from a dependency of mutual use by consumers without regard to actual physical interconnection.[54] For example, although manual typewriters were not connected in a physical network, new users adopted the QWERTY keyboard because it was in wide use by others.[55]

Economic analysis demonstrates that superior products do not necessarily prevail in markets and technologies that exhibit increasing returns. Rather, these markets are easily susceptible to "tipping" -- once moved off of equilibrium by an event, the market tends quickly toward a single standard that dominates the market:

> [N]etwork markets are 'tippy': the coexistence of incompatible products may be unstable, with a single winning standard dominating the market. The dominance of the VHS videocassette recorder technology and the virtual elimination of its Betamax rival is a classic case.

See Stanley M. Besen and Joseph Farrell, Choosing How to Compete, J. of Econ. Perspectives, Spring 1994, at 118; see also Michael Katz and Carl Shapiro, J. of Econ. Perspectives, Spring 1994, supra, at 106. Once a market is "tipped" in favor of a particular competitor, it would take truly massive forces to return the market to a state of equilibrium (i.e., competition). See, e.g., W. Brian Arthur, Increasing Returns and Path Dependence in the Economy, supra, at 2, 10-11.

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[54] For early examples in the economics literature, see Joseph Farrell and Garth Saloner, Standardization, Compatibility, and Innovation, Rand J. of Economics, Spring 1985 and Michael Katz and Carl Shapiro, Amer. Econ. Rev., supra; Jean Tirole, supra, at 405.

[55] Jean Tirole, supra, at 404-406.

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Creating a large installed base is the key to dominating such an increasing returns market.

> Because of the compatibility and network benefits, all else equal, a new user prefers a vendor with a larger total installed base of users. Thus installed bases have a tendency to be self-perpetuating: they provide the incentive for the provision of products (software and hardware) that is compatible with the installed base which in turn attracts new users to the installed base further swelling its ranks. . . .

Garth Saloner, Econ. Innov. New Tech., 1990, supra, at 140. Indeed, "de novo entry into a market occupied by vendors with large installed bases is exceedingly difficult." Id. at 140.

The self-perpetuating nature of an installed base in an increasing returns industry causes particular products to become "locked-in." W. Brian Arthur, Scientific American, Feb. 1990, supra, at 99 (Ex. 36). The costs to a consumer of using or switching to a different system are so high that the vendor with the installed base has a substantial advantage over competitors and can, once the base is established, charge consumers supracompetitive prices.[56]

Because increasing returns markets are particularly susceptible to "tipping," a company with a monopoly in one market that faces competition in a second market can use the locked-in installed base of the first market to wipe out competition in the second market by "tipping" the second market. The monopolist might achieve this result by releasing a "predatory preannouncement" with regard to a product in the second market. In markets that feature increasing returns, users will want to be on the same standard as other users, so expectations

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[56] Garth Saloner, Econ. Innov. New Tech., 1990, supra, at 137-138; Joseph Farrell and Carl Shapiro, Dynamic Competition with Switching Costs, Rand J. of Econ., Spring 1988, at 123-137.

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(what users believe will happen) dominate user choice in the second market -- as opposed, for example, to the inherent technological quality of competing product offerings.[57]

> [A] preannouncement can sometimes secure the success of a new technology that is socially not worth adopting, and that would not have been adopted absent the preannouncement.

Joseph Farrell and Garth Saloner, Amer. Econ. Rev., Dec. 1986, supra, at 942.

Similarly, a monopolist that is cash rich from monopoly profits in the first market might also "buy off" early adopters to create a "band wagon effect" in favor of its product in the second competitive market.[58] This technique of predation is known in the economic literature as "penetration pricing."

> An installed base advantage might also be achieved by "penetration pricing," the technique of offering low prices to early customers so as to build up an installed base and influence the choice of later adopters. Penetration pricing seems a natural strategy in network industries, and appears prominently in the theory.

See Stanley M. Besen and Joseph Farrell, J. of Econ. Perspectives, Spring 1994, supra, at 122; see also Janusz A. Ordover and Garth Saloner, Predation, Monopolization, and Antitrust, supra.

Finally, a monopolist with a large installed base in one market might "tip" a second competitive market in favor of his product in that market by technologically linking the two products, or by outright bundling of the functionality of the second product into the first product, thereby eliminating the need for the competitor's product in the second market. For example, by subtly altering the tying product so that rival products in the tied market become

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[57] Stanley M. Besen and Joseph Farrell, J. of Econ. Perspectives, Spring 1994, supra, at 118; Joseph Farrell and Garth Saloner, Amer. Econ. Rev., Dec. 1986, supra, at 946.

[58] Joseph Farrell and Garth Saloner, Rand J. of Econ., Spring 1985, supra; Joseph Farrell and Garth Saloner, Amer. Econ. Rev., Dec. 1986, supra.

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incompatible with the monopolist's "standard," the monopolist can quickly dominate the second market.[59]

The Justice Department's complaint in this case recognizes the critical importance of an "installed base." The complaint alleges that the "lack of a sizable installed base of users" constitutes a "substantial barrier to entry" for Microsoft's operating system competitors. 59 Fed Reg. at 42,847 (Complaint ¶ 15). The complaint also alleges that Microsoft used "anticompetitive contracting practices" including "per processor licenses" starting as early as 1988 to "significantly increase the already high barriers to entry." Id. at 42,847, 42,848 (Complaint ¶¶ 18, 20, 26). The complaint appears to assume that Microsoft's monopoly was lawfully acquired. Id. at 42,847 (Complaint ¶ 19). But since Microsoft's installed base of operating system users has increased six-fold since 1988, it must follow that the "anticompetitive licensing practices" with which Microsoft is charged had the result of increasing its own installed base at the same time it impeded the development of competitors' installed bases. As set forth in the next section, Microsoft has used its installed base both to preclude competitive entry into the operating system market, and to stifle competition in related markets.

IV

MICROSOFT'S TACTICS AND PROSPECTS FOR SUCCESS

This section of the Memorandum of Amici will examine Microsoft's overall strategy, the tactics that Microsoft has used in pursuing that strategy, and the likelihood that

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[59] See Garth Saloner, Econ. Innov. New Tech., 1990, supra, at 141-142.

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Microsoft will accomplish its aims. Microsoft, by the admission of its own Chief Executive Officer, intends to dominate all of data and information processing.

> There's no level of performance or specific application of corporate information systems that we don't intend to go after . . . [and] there won't be anything we won't say to people to try and convince them that our way is the way to go. That's because this new, electronic world of the information highway will generate a higher volume of transactions than anything to date, and we're proposing that Windows be at the center, servicing those transactions.

Brent Schlender, Fortune, Jan. 16, 1995, supra, at 40 (emphasis in original).

To accomplish these aims, Microsoft has pursued licensing practices that the Government has denominated as "anticompetitive," and has engaged in classic predatory behavior by using its monopoly in one market to achieve monopolies in other markets. This section applies increasing returns economic analyses to Microsoft's behavior and concludes that, unless restrained by Governmental intervention, it is highly likely that Microsoft will achieve its goal of dominating the entire national information infrastructure.

A. Microsoft's Strategy

Even if Microsoft's initial monopoly was lawfully obtained, its enormous market power (and particularly the power to leverage into related markets) comes from its installed base in operating systems. That installed base, according to the Complaint, was procured as a result of anticompetitive practices. Indeed, Microsoft's installed base of operating system users has increased more than six-fold (from 18 to 120 million) since 1988, when the company began its anticompetitive practices. Microsoft has used its monopoly and its installed base in a classically predatory manner. It has used its monopoly revenues in one market to drive competitors out of other markets. It has also used its operating system installed base in a predatory manner to "tip"

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adjacent competitive markets in the direction of its own product in those markets, to the detriment of competitors.

Microsoft's strategy at any particular point on the network (for example, at the home client or at the business desktop) can only be understood and evaluated in the context of Microsoft's overall strategy. Microsoft pursues a strategy of leverage from product markets in which it is dominant, to markets in which its competitive position is weak. It targets particular markets, establishes marketing and, in particular, technological links to those markets from established monopolies, and then leverages its power to monopolize the target markets.

As used in this brief, "leverage" means that Microsoft uses the installed base in a market it dominates (for example, the operating system) to create an installed base in a new market (for example, desktop applications). It uses predatory subsidization, and both marketing and technological linkages, to accomplish leverage, as explained in greater detail in the succeeding pages. For the sake of easy example, Microsoft's horizontal tie-ins within a single layer represent the most trivial example of its marketing strategy. Thus, Microsoft has bundled for sale a number of desktop applications (under the name, the "Microsoft Office"), putting companies like Lotus, WordPerfect and Borland at a competitive disadvantage. Carole Patton, Bundles Are Bad News, Computerworld, Nov. 14, 1994, at 57 (Ex. 8). Microsoft is executing the same tactic on the server side by bundling its "BackOffice" products to foreclose meaningful competition at the "server applications" layer. See Stuart J. Johnston and Ed Scannell, Computerworld, Oct. 10, 1994, supra, at 4 (Ex. 7).

Microsoft also pursues other tactics. In particular, Microsoft derives leverage from its control of Windows products and logo; from its use of a consistent graphical user interface; and from its tight technical integration between interconnected machines through the

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control of standards such as OLE. After establishing market power on one level, Microsoft will target an adjacent layer, subsidize the creation and sale of products at that layer from the monopoly it derived on the first level, establish proprietary technological linkages to the target layer, and then leverage its market power to establish market power in the next layer. Two examples of this within the desktop side are DOS to Windows, and Windows to desktop applications. In addition, Microsoft uses its market power from one side of the network (server or client) to leverage to the other side, again by establishing linkages. Microsoft is already attempting to leverage its control of the desktop into a control of servers. It will also use its market power in the PC-based financial and text software market, through the acquisition of Intuit, to leverage into the server.[60]

Obviously, control of certain layers in the various markets of the network create greater potential for leverage than control of other layers. In particular, there are a few "gateway" layers into the network. Control of these layers represents the most effective platform for leverage (i.e., moving the installed base). Generally speaking, the operating system layers in each box represent the most powerful platforms for both horizontal and vertical leverage.[61] For example, Microsoft has already leveraged control of operating systems to desktop applications. It can also leverage control of the desktop operating system (Windows 95) to the server operating system (Windows NT).

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[60] For a detailed review of Microsoft's server strategy, see How Microsoft's Server Strategy Will Change The Industry, supra, (Ex. 38).

[61] There was clearly the potential for at least some leverage from the chip or hardware level, when the OS level was more fragmented. This possibility is not treated in this brief for a number of reasons, including the widely publicized alliance between Microsoft and Intel that makes separate treatment of the hardware layer irrelevant.

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Control of the "gateway" layers provides greater possibilities for leverage because control of the architecture at those levels effectively controls all higher vertical levels, and also provides significant power at the horizontal interface between the client operating system and the server operating system. This brief uses the term "architecture" in the same way as that term is used in the Morris and Ferguson Harvard Business Review article -- namely, the complex of standards and rules that define how programs and commands will work and how data will move around the system. Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993. supra, at 88 (Ex. 16).

By owning the installed base at a gateway, Microsoft can control not only the architecture at that level but also at all higher vertical levels. For example, by controlling the desktop operating system architecture, Microsoft can easily obsolete or render inoperable Lotus 1-2-3, merely by making a minor change to the architecture. Microsoft can pretextually or otherwise claim the change to be an "upgrade" or a "bug fix," but it is the effect of the power to control architecture that is more important than Microsoft's subjective intent.

If Microsoft controls the architecture at a "gateway," it can loudly proclaim its system to be "open" while in truth its architecture remains closed. Thus, for example, Microsoft can claim that its desktop operating system will continue to work with Lotus 1-2-3 or that its server operating system will continue to work with the database products offered by Microsoft competitors (and, to that extent, its system is "open"). Because Microsoft can easily obtain competitive advantage over (or outright displacement of) vertically related competitors by

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upgrades to the architecture, however, its nominally "open" system does not provide for effective competition on higher vertically related levels.[62]

All companies try to use leverage to some extent,[63] but Microsoft has a powerful advantage over its competitors. It has used "anticompetitive" licensing practices to acquire a huge installed base and it uses the power of this installed base against competitors in adjacent markets. Microsoft employs multiple linkages and leverage from the different markets (and, in particular, from the gateways) it controls into a single target market, so as to completely outflank and overrun existing competitors in that market.

In the beginning (for our purposes), IBM had a monopoly in computers and the market for computer products was, generally speaking, vertically integrated. (This necessary background is explained in The Economist, supra, at 3-18 (Ex. 14).) How IBM got this monopoly was the subject of much conjecture and years of litigation, but is irrelevant for our purposes. What is relevant is the fact that IBM, in its rush to get out a personal computer, did not leverage its own power from mainframes. Rather, it procured chips from Intel and an operating system from Microsoft ("DOS"), thereby transferring its market power to them as the

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[62] The operating system gateways are the most effective layers for leverage. But the system can also be leveraged from other access points as to which strong network externalities attach. For example, on the home client, Intuit has leverageable power from the strong network externalities that have attached to that product at the computer-human interface. (This is described in greater detail elsewhere in this brief.)

[63] In many respects Microsoft's strategy of targeting, linking and leverage is little different from that employed by MITI and Japanese keiretsus to target and capture American markets. Microsoft's leverage comes from technical ties in markets it dominates, while Japanese companies' leverage comes from the installed base of buyers it creates in Japan. In both cases, the leverage can be applied by forward-pricing into the target market to damage competition in that market. Cf., L. D. Tyson, Who's Bashing Whom? Trade Conflict in High-Technology Industries, at 55-57, 99-101 (1992).

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market for personal computers expanded to displace mainframes and IBM's imprimatur established a standard. In short, IBM empowered Microsoft and Intel to control the architecture for the next generation of computers, and has been playing catch-up ever since. See Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993, supra, at 86, 92 (Ex. 16). See also Elizabeth Corcoran, Washington Post, Nov. 13, 1994, supra, at H6 (Ex. 44).

Bill Gates, the founder of Microsoft, secured control of the personal computer market by riding IBM's coattails. The success of the IBM PC opened a lucrative market for compatible computers, or "clones." At the time, Microsoft was the sole source for a compatible operating system. Accordingly, Microsoft was able to license the operating system ("DOS") to compatible makers at significantly higher rates than those charged to IBM. Hence, as the Government's Complaint (¶ 19) explains, "Microsoft quickly dominated and gained a monopoly in the market for PC operating systems." 59 Fed. Reg. at 42,847. More precisely,

> DOS would have been worth relatively little had Gates not retained the right to license its use to IBM's rivals. This arrangement -- the source of Gates' wealth and power -- became clearer as IBM set the standard for the burgeoning PC market. By the mid 1980's every rival except Apple computer felt that the only way to compete against IBM was to sell a clone of IBM's PC. Making a clone required, among other things, licensing DOS from Microsoft. Over time DOS became a kind of annuity for Microsoft: buying DOS was the price of admission for entering the PC business.

See G. Pasquel Zachary, Showstopper: Breakneck Race To Create Windows NT and the Next Generation at Microsoft, 27 (1994).

As new technologies overcame the old mainframe market, the market for computer products formed into a number of horizontal markets that are vertically related to each other. Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993, supra, at 8 (Ex. 16). There are many competitors at each level that aggressively compete with each other to

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develop more powerful products at lower prices. Generally speaking, consumers have benefitted from the formation of horizontal markets. Consumers can put a system together using the best and most cost effective products at each level, even if the products are made by different manufacturers. But by using its installed base in operating systems to "tip" each of these markets in favor of its own products, Microsoft undermines the competitive process. From the initial monopoly bestowed on it by IBM and the huge installed base secured by anticompetitive practices, Microsoft has leveraged and linked a series of powerful monopolies with the intent of forming a new verticality on the market. After establishing several monopolies with enormous leverage potential, the positive feedback from the verticality imposed by Microsoft will in short order eliminate competition on all horizontal layers within the server and online markets, just as it is eliminating competition in the horizontal layers on the desktop.

1. **The Business Desktop**

The Justice Department's Tunney Act filing alleges that Microsoft has monopolized "the market for PC operating systems worldwide" for "almost a decade." 59 Fed. Reg. at 42,850. As noted previously, in 1988 Microsoft had an installed base of approximately 18 million operating system users.[64] In 1988, Novell (formerly Digital Research, Inc.) entered the X86 operating system market with a competitive product, DR DOS, and it was in response that Microsoft began the "anticompetitive licensing practices" identified by the Government. Microsoft continued these practices through mid-1994, and, as noted previously, it was during this period that Microsoft was able to increase its installed base by more than 100 million

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[64] See supra note 9.

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users.[65] As the preceding section explains, it is the size of Microsoft's installed base, rather than merely its market share, that determines the company's true market power. Accordingly, through practices that the Government has identified as "anticompetitive," Microsoft has increased its market power many fold.

Having gained this market power, Microsoft has used it both to maintain its monopoly in operating systems (described in subsection (a) immediately below) and to obtain a monopoly in desktop applications (subsection (b)). The remainder of this section (subsections (c) through (f)) describe how Microsoft has used its market power to engage in other predatory conduct in the desktop markets.

a. Effect of the Monopoly on Operating Systems

Microsoft's strategy, which was based at the outset on an installed base created in part through anticompetitive licensing practices, succeeded in monopolizing the desktop OS and threatening desktop applications. Once Microsoft had control of the operating system, which is the key architectural technology for desktop computing, it was able to maintain its share, even with an inferior product. The introduction of DR DOS from Novell showed that Microsoft had failed to keep MS DOS abreast of leading technology.[66] Yet Novell's compatible offering in the DOS market (DR DOS) stopped selling when Microsoft made it clear that Microsoft would create versions of Windows that were incompatible with DR DOS. It is common for "better" products to fail if a competitor controls the architecture in which the product operates. See

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[65] Amy Cortese, Next Stop, Chicago, Business Week, Aug. 1, 1994, at 24 ("120 million MS-DOS customers (including 55 million Windows users)"). See also OS Overview, Computer Reseller News, at 223 (DOS installed base of 110.1 million).

[66] See Stan Miastkowski, Digital Research Creates a Better DOS, Byte, Nov. 1991, supra, at 68.

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Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993, supra, at 89-91 (Ex. 16).

Microsoft was also able to raise prices for its operating system, as its monopoly position continued to solidify and its installed base increased. In the early 1980's, Microsoft licensed MS DOS for $2 - $5 per copy. By 1988, the price was up to $25 to $28. Once Microsoft drove DR DOS out of the operating system market, it was able to double the price it charged, with recent press reports indicating that it is demanding as much as $70 per copy of the forthcoming version of its operating system.[67]

Overall, Microsoft's strategy has been enormously successful in maintaining its monopoly in operating systems while expanding its installed base. Microsoft's share of all desktop operating systems is a staggering 85%. See supra note 32. Microsoft's share of the operating system market that runs on X86 chips is even larger -- more than 90%. See id.

b. Effect of the Monopoly on Applications

Having entrenched its operating systems monopoly, Microsoft has aggressively leveraged this monopoly to gain a monopoly in business applications. In 1991, Microsoft's senior vice-president Mike Maples expressly stated the company's intention to monopolize the software applications market:

> If someone thinks we're not after Lotus, and after WordPerfect and after Borland, they're confused... My job is to get a fair share of the software applications market, and to me that's 100 percent.

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[67] See Amy Cortese, Business Week, Dec. 19, 1994, supra, at 35 (Ex. __) ("Computer makers . . . have been startled to learn that they will be asked to swallow a huge price hike for their use of Windows 95 -- to as much as $70 per PC vs. roughly $35 today.").

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See Jane Morrissey, Microsoft's Application Unit Seeks Market Dominance, PC Week, Nov. 18, 1991, at 1.

Microsoft used the monopoly revenues from licensing the operating system to fund the development of applications to run on DOS, in competition with software vendors which had no operating system control (for example, Lotus, Borland, and WordPerfect). But because of the relatively open nature of DOS, competitors like Novell could make "compatible" operating systems -- operating systems that would run applications written for Microsoft's MS DOS without modification. Therefore, Microsoft could not exercise sufficient control to give its own applications a strong competitive advantage over the application programs of competitors. The competitors' products were the first developed on DOS and had therefore acquired significant installed bases, as to which powerful network externalities had attached. In order to displace these competitors, Microsoft needed to create a new operating system platform so that its own applications would reach the market on the new platform before its competitors' products.

Microsoft "solved" this problem by (1) developing a new operating environment (Windows) that it totally controlled, (2) targeting a function performed in the application layer that it could either embed in the operating system (for example, the "graphical user interface" or "GUI" feature) or link with the operating system, and (3) using its power over DOS to migrate users to Windows. Microsoft thereby got more control over the OS, added value to the OS it controlled, and forced independent application publishers to rewrite all of their applications twice (once for Windows and a second time for OLE, as described below). The forced migration that Microsoft effected with the GUI and Windows may be depicted as follows:

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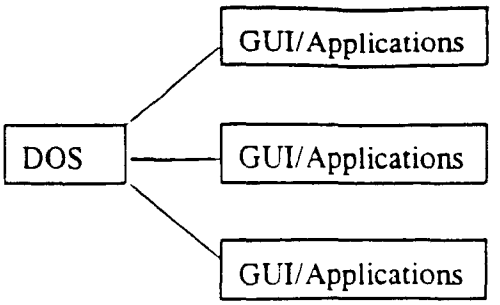
BEFORE (See Figure 2)



AFTER (See Figure 3)

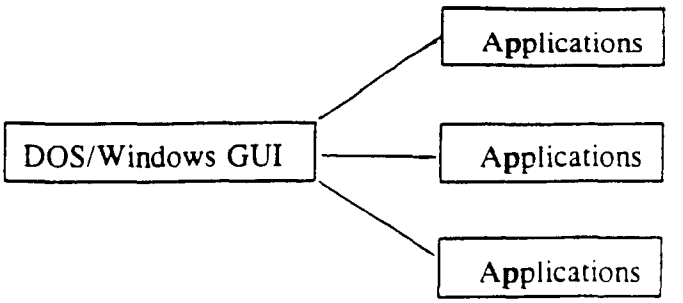


Figure 7

Microsoft, in effect, added a new layer to the architecture of the desktop, moving the industry from Figure 2 to Figure 3 above. Controlling architectures is the key to dominating competition. See Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993, supra (Ex. 16).

Microsoft leveraged its control over the operating system to control desktop applications, following a carefully crafted plan that utilized the market power of its installed base. First, Microsoft emulated the application program of the market leader in that application (e.g., Lotus, WordPerfect or Borland), breaking the network externality of the installed base by providing file and keystroke compatibility. Microsoft funded the development, marketing, and below-market pricing of its applications from the profits it reaped on the six-fold increase in the installed base of its operating system. Microsoft's

> stronghold in operating system software . . . financed Microsoft's push into applications software.

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Victor F. Zonana, $14-Million Deal Microsoft Buys Software Competitor, L.A. Times, July 31, 1987, at 4.[68] For years, Microsoft funded "many versions" of applications programs before they "were good enough to grab substantial market share."[69] But

> [b]ecause Windows gives Microsoft a "pervasive presence on any desktop that matters, Microsoft can subsidize its loss leaders [in applications] and leverage its desktop heritage".

Barbara Darrow, Developers Brace for Shakeout, Computer Reseller News, Feb. 1, 1993 at 28 (quoting Don DePalma, senior industry analyst for Forrester Research). ACCESS, Microsoft's database program, is a case in point. It

> cost a staggering $60 million to develop . . . . By contrast, the [entire 1992 development] budget at Borland was $50 million. At Lotus, it was $35 million. That's not all. Microsoft also had the money to offer an introductory price of $99 for ACCESS -- less than one-third the retail price for similar packages. Result: Microsoft sold 700,000 copies in just three months. The entire market in 1992 was only 1.2 million units.

Kathy Rebello, et al., Business Week, March 1, 1993, supra, at 88.

c. **Unfair Early Access**

Moreover, because of Microsoft's installed base in operating systems, it was able to provide an unfair advantage to its applications in a variety of other ways, as well. For

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[68] See also O. Casey Corr, IBM vs. Microsoft -- Software Superbowl -- IBM to Kick Off New Version of OS/2, but will Microsoft Make Winning Goal, Seattle Times, March 29, 1992, at C1 (system sales are "the cash cow that has fueled Microsoft's aggressive entry into nearly every field of personal computing"); id. ("DOS, which comes installed on computers at the factory, has provided profits to finance Microsoft's development of applications such as the Excel spreadsheet and Word, a writing program."); Laurie Flynn & Rachel Parker, Extending its Reach, InfoWorld, August 7, 1989, at 43 ("the Microsoft strategy has been to fund expensive applications development and marketing with its profits from the recurring DOS royalties it receives.").

[69] Kathy Rebello, et al., Is Microsoft Too Powerful, Business Week, March 1, 1993 at 88 (Ex. 4).

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example, Microsoft based its own application programs on components in the operating system that it had unique or early access to. Microsoft claimed it was "open," but actually used hidden features and functions to gain a competitive advantage. Brian Livingston, InfoWorld, Nov. 16, 1992, supra, at 98 (Ex. 19). That is, Microsoft provided a proprietary architecture with a supposedly "open" system. See Charles R. Morris and Charles H. Ferguson, Harv. Bus. Rev., Mar. 1993, supra. The most well-known such example involves Microsoft's "OLE" (object linking and embedding) standard.

Microsoft created interoperability among its own applications, and between its applications and its operating system, by creating a new standard, OLE, which copied functionality from Hewlett-Packard's product New Wave. Stuart J. Johnston, Dangerous Liasons, InfoWorld, April 8, 1991, at 44. With market power on both sides of the interface (i.e., in both the applications and the operating system), Microsoft easily displaced the existing standard in favor of OLE. It embedded OLE functionality into both its operating system and applications, and it heavily marketed this new functionality using profits from its market position in operating systems.[70]

During the very same time period that the Government contends Microsoft was using "anticompetitive licensing tactics" to harm OS competitors, applications competitors repeatedly complained that Microsoft was using its knowledge of new operating system features to give its own applications programs a head start and performance advantage over applications competitors. As stated in Section II of this memorandum, throughout the 1980's and early

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[70] See Cara A. Cunningham, IBM and Microsoft Wage Open Doc vs. OLE Find, InfoWorld, Aug. 15, 1994, at 25 (Microsoft has an "army of evangelists . . . that goes out and sells the [OLE] technology and swarms over developers").

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1990's Microsoft responded to this criticism by asserting that it had erected a "Chinese Wall" between its operating system developers and applications developers. According to Steve Ballmer, the senior vice-president for Microsoft's system divisions:

> [T]here is a very clean separation between our operating system business and our applications business . . .. It's like the separation of church and state.

Business Week, Nov. 21, 1983, supra, at 114 (Ex. 2).

In the face of mounting criticism, Microsoft executives adhered to the party line. For example, in 1989, Steve Ballmer again disputed "the charge that his people gave their counterparts in applications previews of their upcoming systems products."[71] Microsoft executives repeatedly told the press that a "Chinese Wall" was in place. See, e.g., Laurie Flynn and Rachel Parker, Infoworld, Aug. 7, 1989, supra, at 43. Indeed,

> Gates insisted that Microsoft kept the playing field level by erecting an imaginary barrier between the company's operating systems group and its applications division.

Hard Drive, supra, at 308. Even into early 1991, Microsoft executives were claiming that the company had an "ISV-independent program" that treated Microsoft applications "the same as any other ISV [independent software vendor]."[72] Although the FTC began investigating Microsoft in 1990, Microsoft continued to maintain that it had a "Chinese Wall" well into 1991.[73]

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[71] Richard Brandt, Microsoft Is Like an Elephant Rolling Around, Squashing Ants, Business Week, Oct. 30, 1989, at 148 (Ex. 3).

[72] Ray Weiss, Windows Stars at SD 91, Electronic Engineering Times, Feb. 18, 1991 (Ex. 15).

[73] See supra note 27.

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But Microsoft's head start in using OLE in 1991 to the detriment of applications competitors put the lie to such claims. Microsoft incorporated OLE into its Windows operating system and shipped its first completed application incorporating OLE, Excel 3.0, in February of 1991, at the very same time it was releasing a "beta version" of OLE -- not suitable for commercial distribution -- to ISV's. Indeed, the February 1, 1991, issue of Byte Magazine reports the two events in the same issue.[74] Microsoft's applications competitors suffered delays of many months as they were forced to rewrite their own applications to make them perform under Windows as well as Microsoft's Excel, which had a head start in using OLE. It was not until many months later that the first third-party implementation of OLE appeared on the market.[75]

Microsoft's unfair advantage obtained from prior knowledge of operating system functionality created a significant head start for its own applications on the new Windows platform. As the prior economic analysis demonstrates, the advantage of being first to market in an "increasing returns industry" is enormous -- it permits a competitor to begin to generate an installed base, reap the benefits of "positive feedback," and otherwise drive its own products to "lock in" before competitors even reach the market. Microsoft used its operating systems information to secure these unfair benefits for its applications.

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[74] Compare Andrew Reinhardt, First Impressions: New Extras for Excel, Byte, Feb. 1, 1991, at 136 with Microbytes, Byte, Feb. 1, 1991, at 20.

[75] See, e.g., Stan Levine, Lotus Embraces 'Competition As It Aims for Identity, LAN Times, June 17, 1991.

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Confronted with their obvious untruths, Microsoft executives did an abrupt corporate-wide about-face at the end of 1991. Microsoft senior executive Mike Maples stated in December of 1991:

> There is no Chinese Wall. We don't want there to be a Chinese Wall, and I don't think we've ever claimed that there is a Chinese Wall. Microsoft is a single company. . . . We don't try to pretend that there is a Chinese Wall. . . .

Stuart J. Johnston, 'No Chinese Wall' at Microsoft, Infoworld, Dec. 30, 1991, at 107 (Ex. 18). And since early 1992, Microsoft has freely and openly given its applications developers an advantage over ISVs. In November of 1992:

> at least half a dozen cases in which Microsoft allegedly withheld information on its DOS or Windows functions from outside developers, for periods ranging from six months to several years. During these periods, Microsoft's own developers appear to have used these functions in applications or utilities that competed with those eventually developed by independent software vendors, according to programmers who have examined the code.
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> * * *
>
> [I]n each case, the lack of documentation of the functions may have given Microsoft applications a time-to-market lead of six months or more before similar features could be incorporated into competing developers' applications . . . .

Brian Livingston, InfoWorld, Nov. 16, 1992, supra, at 98 (Ex. 19).

d. Predatory Bundling

Since dropping all pretense of a "level playing field," Microsoft has increasingly used the power of its operating system installed base to gain advantages over applications competitors. It has attempted to monopolize the market for the development tools (also known as programming languages) used to create applications by predatorially preannouncing its products (as documented in the introduction to this brief) and by bundling versions of its own

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programming language products into its operating systems so that users will have a powerful disincentive to purchase a competitor's programming language separately.[76]

Microsoft has also conducted a lengthy "campaign" to bundle business software applications into the operating system so that it can "mop up competitors that sell stand-alone applications, resulting in more limited user choice down the road."[77] Microsoft has steadily increased the price of its operating system to cover its own loss of revenue from the diminished sales of free-standing applications that it bundles into the operating system. Although free-standing applications generally cost more than Microsoft's increases in operating system licensing fees, the unit sales of each application are far fewer than the number of users that upgrade to each new release of the OS -- because of the huge installed base that Microsoft has procured by "anticompetitive practices." Hence, even a modest increase in operating system fees more than offsets Microsoft's loss of revenue from diminished applications sales.

Applications competitors, of course, do not fare as well -- when Microsoft bundles the functionality of their products into the operating system, they lose their only source of revenue. After the competitors go out of business, Microsoft is free to unbundle the applications from the operating system and charge, in the absence of competition, whatever price the market will bear. Microsoft initiated this strategy with the introduction of Windows, by bundling word

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[76] Ethan Winer, BASIC, Yes; Feeble, No, PC Magazine, Oct. 30, 1989, at 187 (Because "the BASIC [programming language] interpreter [is] bundled with DOS . . . at no extra cost, [it] is known and used by more people than any other programming language for personal computers.").

[77] Michael Csenger & Adam Griffin, Microsoft Free At Last?, Ruling Still Lets Firm Incorporate Apps Into Its OS'es, Network World, July 25, 1994, at 4 (Ex. 23); see also John Markoff, Microsoft's Future Barely Limited, N.Y. Times, July 18, 1994, at D1 (Ex. 24) (describing Microsoft's 14 year "campaign[] to expand the definition of what computing functions belong inside the computer operating system.").

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processing, calculations, communications and "paint" business applications software directly into the operating system.[78]

Microsoft has even bundled technology into its operating system that it misappropriated from its competitors. When Microsoft wanted to add data compression capabilities to DOS, for example, it approached Stac Electronics, developer of the industry's leading data compression software. Microsoft demanded a worldwide license to use Stac's software as part of DOS, but "steadfastly refused . . . to pay Stac any royalty for [its] patented data-compression technology."[79] When Stac refused Microsoft's demand, Microsoft simply incorporated Stac's intellectual property directly into DOS. Id. Stac brought suit and a federal jury found Microsoft guilty of infringing Stac's data compression patents and awarded Stac $120 million in damages.[80] Microsoft thereafter settled the case by acquiring a 15% interest in Stac, and obtained a license to Stac's vital data compression technology for a fraction of the jury's verdict.[81] Because Microsoft's conduct in the Stac case "underscore[s] the sort of allegations that have kept the [Government's antitrust investigation] alive for years," some observers have

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[78] Paul Andrews, Windows Is No JFK, But Its Visual Appeal Is Outstanding, Seattle Times, May 22, 1990, at C2 ("Windows 3.0 comes with a suite of mini-applications including Write, Paintbrush, Clock, Recorder (a macro utility), and Terminal (telecommunications).").

[79] O. Casey Corr, A Look Behind Stac Deal, Seattle Times, June 26, 1994, at F1 (quoting Stac's complaint).

[80] Id.; Charles McCoy, Microsoft to Pay Stac Judgment of $120 Million, Wall St. J., Feb. 24, 1994, at A4.

[81] Stuart J. Johnston, Microsoft Settles for Piece of Stac, Computerworld, June 27, 1994, at 30 (Microsoft paid $39.9 million for 15% of Stac, and an additional $43 million over 43 months for a license to Stac's data compression technology); Doug Barney, Microsoft, Stac Resolve Dispute; Microsoft Finally Pays Up, InfoWorld, June 27, 1994, at 14.

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suggested that the timing of Microsoft's settlement with Stac in late June 1994 was calculated to "remove [Stac president Gary] Clow as a hostile witness in the Justice investigation."[82]

e. Predatory Unbundling

Microsoft has also unbundled technology from its operating system in order to render other companies' products uncompetitive. For example, the DOS operating system contained, in version after version, a portion of code known as the "debug kernel." Both Microsoft and competitors like Borland created development tools that used the functionality of the debug kernel in order to run.

With the introduction of Windows 3.1 in April, 1992, Microsoft removed the debug kernel from the operating system and bundled it with its own language application program. If a user wanted to run the competitive Borland program, it had to buy the debug kernel separately from Microsoft, at a price Microsoft set to make the Borland product less competitive. Microsoft even conspicuously advertised the fact that its own product was cheaper than the Borland product because the user had to buy the debug kernel separately from Microsoft. Byte, May 1992, at 159 (Ex. 6). Whatever pro-competitive benefits Microsoft might advance to justify its bundling of new functionality into the operating system, it is difficult to imagine any justification for unbundling operating system technology, other than harming competition.

f. Other Uses of Leverage

Microsoft further exploited its leverage, both vertically and horizontally. Horizontally, within the desktop applications layer, Microsoft introduced additional applications,

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82 O. Casey Corr, A Look Behind Stac Deal, supra, at F1.

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touting and exploiting the benefits and advantages of its vertical linkage (to the operating system): for example, word processing ("Word"), database ("Fox Pro" and "Access"), and presentations ("Power Point"). Microsoft also employed horizontal leverage in the applications layer through its marketing practice of bundling a group of applications into a "suite," which is sold at low price points. And, all the while, Microsoft used its profits from its monopoly position in OS for (1) massive marketing to promote the linkage features of the OS, and (2) sustaining a protracted battle with independent applications vendors in a new market that, without the profits from the leveraged market, could not be sustained.[83]

As noted in the introduction to this brief, Microsoft has been spectacularly successful in leveraging its installed base in the operating system market to dominate the business applications market. In four years, Microsoft "went from an also ran in the business applications market to the industry leader." Inside Telecom, Sept. 26, 1994. Although Microsoft has not yet fulfilled Mike Maples' goal of "100 percent" market share, it is by far the leading supplier in each individual applications product category. Microsoft Domination, San Jose Mercury News, Dec. 21, 1994, supra, at 1F (Ex. 35). Moreover, suites are the fastest growing category of business applications software and Microsoft accounts for an astounding 85% of all suites sold. See supra note 16.

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Microsoft's success in monopolizing business applications is, absent effective Government intervention, only a taste of things to come. Having succeeded in dominating the

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[83] As explained in Section V.C., infra, the superficially irrational behavior of undermining the application vendors that produce programs that run on Microsoft's operating system is logical specifically because Microsoft has an independent economic incentive to monopolize the market for business application programs.

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desktop operating system and applications markets, Microsoft has begun to leverage its installed base to monopolize both the intrabusiness server and on-line systems, as set forth in subsequent sections.

2. The Intrabusiness Server

Microsoft intends to displace all of the competition on the enterprise server, just as it did on the desktop, by employing multiple linkages and leverage. Its leverage will come from the large installed base of the PC operating system monopoly. Using this base, Microsoft will employ three strategies: (a) vertical linkages similar to those that worked in the desktop markets, (b) horizontal linkages from desktop to intrabusiness server, and (c) horizontal linkages from home-to-business server to intrabusiness server.

Microsoft began the implementation of its strategy by creating a new server OS ("Windows NT") that horizontally leverages from the monopoly position of DOS/Windows in the client market. Microsoft has increasingly placed server functionality into Windows and Windows applications (for example, with the Microsoft products, Access, Fox Pro, and Excel).

> With NT, Gates seeks to extend his software dominion from desktop software, which he monopolizes, to the network. In the 1980's, Microsoft's DOS and Windows systems software defined the way most people worked with computers. In the 1990's, the company aims to define the software that electronically ties together workers and businesses, customers and homes.

Zachary, Showstopper, supra, at 3.

In addition, Microsoft is nakedly leveraging its market power in the desktop operating system market to the enterprise server by requiring software developers who want to use the logo for "Windows 95," the forthcoming version of Microsoft's desktop operating system, to make their desktop application products also run on "Windows NT" (Microsoft's

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server operating system). See William Brandel, Developing for Next Generation of Windows May Mean Running on NT, Computerworld, November 18, 1994, at 4. There is no technical reason to require an application to run on both Microsoft's desktop and server: indeed, a user would not even expect (nor perhaps even want) a "Windows 95" application program to run on the server. Microsoft's requirement is simply another way of leveraging:

> The NT requirement seems like nothing more than an attempt to leverage Microsoft's control over the upcoming Windows 95 market to assist its lackluster Windows NT product.

Brian Livingston, Will 'Windows' Compatible Really Mean What It Says?, InfoWorld, November 14, 1994, at 40 (Ex. 20) (quoting Andrew Schulman, Unauthorized Windows 95). Microsoft is using its operating system power to force independent application vendors to establish the linkage between the desktop and the server that Microsoft has been trying to establish through its own products. In affect, Microsoft is using independent software vendors to establish Microsoft's power in servers.

Microsoft also enhances its power in the server applications layer by horizontally bundling these products into a suite (the "BackOffice") in the same way Microsoft bundled desktop applications into a suite. Just as with the desktop applications, there is also vertical leverage to enforce the horizontal bundle by making all server applications OLE-enabled. See Stuart J. Johnston and Ed Scannell, Computerworld, supra, Oct. 10, 1994, at 4 (Ex. 7); J. William Semich, Datamation, Aug. 1, 1994, supra, at 41-44 (Ex. 10).

3. The Home-to-Business Market (Server and Client)

Increasingly, business will need to communicate with personal computers in homes in order to sell products or services and in order to provide information, for work or other purposes. Obviously, businesses that exploit this channel will have a strong advantage

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over competitors that do not, with the result that all businesses will seek entry. This market is currently known as "online services." There are three principal competitors in this market -- America Online, CompuServe and Prodigy.

Control of the home-to-business market by a single company would produce an enormous windfall. First, of course, the monopoly would be able to extract a toll for a large percentage of consumer financial and product transactions. More strategically, a company that controlled the home-to-business market could leverage that control back to the intrabusiness, or enterprise, server market. Control of both sides of the server market, intrabusiness (enterprise) and home-to-business, would place enormous power (financial services, information, education, etc.) in the hands of a single company. Microsoft has this power within its grasp. Microsoft is pursuing its policy of targeting, linking and leverage from the operating system installed base to seize control of the architecture of the home-to-business market, just as Microsoft gained domination of the desktop.

On November 14, 1994, Microsoft announced its own online service known as "Marvel" or the "Microsoft Network." Microsoft will use Windows NT as the home-to-business server for the Network. Adam Gaffin & Peggy Watt, Microsoft, Lotus Battle Shifting to On-Line Services, Network World, Nov. 21, 1994, at 1. More importantly, Microsoft will use the market power from its installed base in operating systems in a number of ways to displace existing on-line competitors and dominate the home-to-business market.

a. Predatory Bundling

First, Microsoft intends to leverage its installed base in operating systems to give its own on-line service an unfair advantage over existing competitors. Microsoft has already announced that the next upgrade of its PC operating system, Windows 95 (due out later this

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year), will have a connection to the Microsoft Network already bundled in. According to Bill Gates, "We'll give you access to [the Microsoft Network] with Windows 95... If (the software notices you have a modem, it will ask you if you want to register."[84]

This tactic will instantly displace existing on-line competition. Windows 95 will be pre-installed on virtually every PC sold in the United States in the coming year[85] and approximately 20 million copies will be in use within a year of its release. Amy Bernstein, Microsoft Goes Online, U.S. News & World Report, Nov. 21, 1994, at 84. This "potent plan for spreading Marvel" will dwarf the competition. Id. America On-Line, by comparison, has an installed base of 1.25 million subscribers. Elizabeth Corcoran, Washington Post, Nov. 12, 1994, supra, at H6 .

Industry analysts and commentators have repeatedly raised concerns that Microsoft's bundling of its own on-line service "tilts the playing field in its direction," likening Microsoft's bundling practice to the utility company selling appliances or the local phone company automatically connecting the user up with AT&T's long distance services[86]:

> In essence, OEMs will be forced to distribute MSN [The Microsoft Network] if they want to access Windows 95 -- even if that distribution is to the OEM's detriment.

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[84] Elizabeth Corcoran, Washington Post, Nov. 12, 1994, supra, at H6.

[85] Amy Cortese, Business Week, Dec. 19, 1994, supra, at 35 (HP, Compaq and other big U.S. PC makers plan to bundle Windows 95 into their machines).

[86] See Lawrence J. Magid, Microsoft: Not So Marvelous, Bay Area Computer Currents, Dec. 1, 1994, at 98, 101 (Ex. 1); Carole Patton, Computerworld, Nov. 14, 1994, supra, at 57 (Ex. 8).

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Jesse Berst, Microsoft's On-Line Rivals Could End Up In 'Cyberia', PC Week, Dec. 12, 1994, at 120 (Ex. 30). Microsoft's conduct is a textbook example of an attempt to use market power in one market (operating systems) to "tip" a competitive adjacent market (online systems).

b. Unfair Use of Information

Microsoft is also using its power over the operating system installed base to dominate the content of the home market -- CD ROMs -- the same way it used leverage from the operating system installed base to dominate business applications. For example, as a condition to obtaining information about how to run on the multimedia portions of Microsoft's operating system, independent CD ROM developers were required to fill out a form, designated "Microsoft Confidential." In other words, in order to obtain necessary operating system information, the form required Microsoft's CD ROM competitors to disclose to Microsoft confidential business information necessary to make successful CD ROM products. This form is a remarkably glaring example of the open exercise of market power. It required, inter alia, the following disclosures:

> Please describe your company's important business relationships (distribution, venture capitalists, etc.)
>
> Provide proposed product areas.
>
> Current key software products (in order of market share and importance to your company).
>
> Who is the target audience for your products?
>
> What is the price of your products?
>
> What is your supply date for retail distribution?
> What competition do you perceive for this product?
>
> How will you differentiate this product from its competition?

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How is this project funded?

(The "Microsoft Confidential" form is found in the Appendix as Ex. 22.) Armed with all of this confidential information about its competitors plans and products, Microsoft has successfully entered the CD ROM business itself, and is "churning out about one new CD ROM title per week." Washington Post, Nov. 13, 1994, supra, at H6 (Ex. 44).

c. **Unfair Head Start**

Microsoft will also ensure domination of the content of on-line services by using OLE-based tools as the standard for business developers and users to create object-oriented documents that can be transmitted over the Microsoft Network. Mary Jo Foley, Microsoft Lays Foundation For On-Line Network, PC Week, Nov. 14, 1994, at 1; Doug Barney, Microsoft to Announce New On-Line Service at Comdex, InfoWorld, Oct. 24, 1994, at 1,140. According to a PC Week article, the Microsoft network employs OLE technology and uses the "standard Microsoft Exchange E-mail client included with Windows 95 . . . ." In short, "Microsoft Network's on-line services are well-integrated into the Windows 95 user interface." Eamonn Sullivan & Matt Kramer, Microsoft Marvel Beta Leverages WIN 95 Desktop, PC Week, Nov. 7, 1994, at 169 (Ex. 28).

And, as if Microsoft's use of leverage to dominate the home and on-line markets is not sufficient, Microsoft announced on October 13, 1994[87] its intention to buy Intuit, Inc., paying a 100% premium to market. See supra note 36. Intuit publishes the personal finance

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[87] Lee Gomes, Microsoft to Acquire Intuit, San Jose Mercury News, Oct. 14, 1994, at 1D.

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and tax planning software programs that dominate their respective markets. Intuit's product controls 80-85% of the personal finance markets.[88]

Personal financial software is generally regarded as the "killer app[lication] of the 90's" for the home computing market.[89] Personal financial software has broad consumer appeal in that everyone has a bank account. It requires the integration of several sources of data including bank accounts, brokerage accounts, and credit information. Because of Intuit's commercial success, there is a strong network externality ("lock in") attached to a user's viewing his personal financial information through the Intuit user interface. Accordingly, Intuit provides tremendous leverage into the home banking market.

The Intuit acquisition is currently under Justice Department scrutiny. If the deal is consummated, Microsoft can be expected to leverage Intuit's installed base to further lock in its own products. For example, Microsoft will bundle Intuit's products with its next release of the operating system to increase the number of users who will upgrade to Windows 95.[90] Microsoft can also provide an enormous market edge to its own on-line service by making Intuit available exclusively (as among on-line services) on the Microsoft Network. See Michael J. Miller, The World According to Microsoft, PC Magazine, Jan. 24, 1995, at 80 (Ex. 25).

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[88] Don Clark, Microsoft to Buy Intuit In Stock Pact, Wall St. J., Oct. 14, 1994, at A3 (86% of retail store sales); Karen Epper, Software Deal Shakes Up Home Banking, Amer. Banker, Oct. 17, 1994, at 1, 25 (80-85%).

[89] Michelle Flores, Probe of Microsoft is Extended - Justice Dept. Asks For More Information, Seattle Times, Nov. 22, 1994, at B11; Michael Schrage, Microsoft Can Make Lots of Money; Can It Shape the Management of It?, Washington Post, Oct. 21, 1994, at B3; Brent Schlender, Fortune, Jan. 16, 1995, supra, at 36.

[90] Gina Smith, Merger Misgivings: Will Intuit Go 'Soft?, S.F. Chronicle, Dec. 4, 1994, at B5, B14.

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Domination of home banking and personal finance provides the optimum platform from which to dominate other on-line services, including, for example, shop-at-home. Businesses that want to provide financial information to Intuit users, or who want to provide other on-line services, will want to choose server software for interacting with the Microsoft Network. Microsoft will be able to use all of its vertical integration skills developed in the desktop and enterprise server marketplace to ensure that businesses choose Microsoft home-to-business server software.

Based on the leverage potential from its operating system installed base, Microsoft has been able to consummate deals that will ensure that Microsoft Network dominates the market. For example, on November 8, 1994, Microsoft and VISA (the credit card company) announced the provision of a standard and secure method "for executing electronic bankcard transactions across global public and private networks." Visa News Release, Nov. 8, 1994 (Ex. 39). In the question and answer session following the press release, the VISA spokesperson said that the driving force in VISA's decision to do the deal with Microsoft was the fact that Microsoft had an installed base of 60 million copies of Windows. The significance of Visa's agreement with Microsoft is not lost on industry observers. See, e.g., Elizabeth Corcoran, Washington Post, Nov. 12, 1994, supra, at H6. Nor is it likely to be the last such agreement: the Post reported, for example, that "four telecommunications companies are expected to announce on Monday [November 14, 1994] that they are working with Microsoft to make dialing into Marvel a local call for many subscribers." Id. And, on December 21, 1994, Microsoft announced that Tele-Communications, Inc. purchased a 20% stake in the Microsoft Network for $125 million. The deal "implies a value of $625 million for an on-line service that doesn't exist yet . . .." Jim Carlton & G. Pascal Zachary, Microsoft Sells A 20% Interest In

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Planned Unit, Wall St. J., Dec. 22, 1994. Once again, Microsoft is controlling the architecture and using a nominally open standard.

If Microsoft is successful in establishing the standard for the home-to-business market, it will be able to leverage into the enterprise server market both from the desktop, which it already controls, and the home market. Once a business decides that it should use the Microsoft server to communicate with customers, there is no point in having a different, probably incompatible, server for intrabusiness needs. After all, the operating system for the server side of Microsoft's home-to-business server is Windows NT. Why have a different business server operating system? This connection between the home server and the business server is clearly in Microsoft's contemplation because Microsoft has already announced that Marvel (the Microsoft network) will connect directly to a company's server. Doug Barney, Microsoft to Announce New On-Line Service at Comdex, InfoWorld, Oct. 24, 1994, supra, at 1.

The inevitable result of Microsoft's monopoly leverage will be to transform Microsoft into a "middleman" or rent collector for every transaction processed in an all-encompassing information economy. Whether writing a letter, placing an order, or paying a bill, every consumer and business connected to the information highway will pay Microsoft's toll. As noted in Fortune, "[t]his isn't just a gleam in Bill Gates' eye -- [by purchasing Intuit, entering a joint venture with Visa, and bundling the Microsoft Network] -- its already starting to come together, and in Microsoft's typically orchestrated fashion.[91]

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[91] Brent Schendler, Fortune, Jan. 16, 1995, supra, at 47-48; see also, Michael J. Miller, PC Magazine, Jan. 24, 1995, supra, at 80 (Ex. 25) ("Microsoft could require just a small service charge on each transaction. Or it could make money on the float -- the interest in the few seconds it takes to move money from one place to another. Or both.").

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V

MICROSOFT'S NETWORK-WIDE MONOPOLY

It is readily apparent that Microsoft's strategy of targeting, linking and leveraging from the desktop operating system has been successful in seizing control of the business desktop. It is also apparent that Microsoft is leveraging from the business desktop to the business server and is vertically integrating within the business server so as to seize control of the critical server operating system gateway. The Intuit acquisition is intended to control the gateway on the home computer and leverage toward the home-to-business market.

Application of "increasing returns" economic analysis would reasonably predict that, given the present situation, Microsoft will succeed in monopolizing the entire information infrastructure (just as it has monopolized the desktop) and that the monopoly will remain in place for a very long period of time.[92] Indeed, the monopoly on the enterprise and home-to-business server markets is likely to be so vast that Microsoft will be able to extract monopoly rents on not only financial transactions, but also the transmission of information and data.

> Some fear that as the digital future of the information superhighway emerges, an unchallenged Microsoft and Intel will wind up in total, undisputed control of the technology upon which the country's citizens and economy will depend . . . "Increasingly, I'm believing it's all over, and we're going to be locked into Microsoft and Intel forever," said Dataquest analyst Kimball Brown.

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[92] For example, leading industry analyst Rick Sherlund of Goldman Sachs predicted that with the settlement, Microsoft "should dominate the market for desktop software for the next 10 years." And another leading analyst, Richard Shaffer concluded that "[t]he operating system wars are over -- Microsoft is the winner . . . . Microsoft is the Standard Oil of its day." Andrew Schulman, Microsoft's Grip On Software Tightened By Antitrust Deal, Dr. Dobb's Journal of Software Tools, Oct. 1994, at 143 (Ex. 13).

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Rory J. O'Connor, Microsoft, Intel Set to Define Technology, San Jose Mercury News, Nov. 13, 1994, at 1-A. (Ex. 34).

Notwithstanding the Government's conclusion that Microsoft has increased its installed base in operating systems six-fold using "anticompetitive practices," and ample evidence that Microsoft has leveraged that installed base to attempt to monopolize business applications (as well as other markets), the Government's Tunney Act filing does not require divestiture of any part of its operating system installed base, nor does it prevent Microsoft from using that installed base to monopolize other markets, including business applications. The Government has articulated no economic rationale to justify its failure to act in the face of such clear evidence of anti-competitive intent and effect. These Amici can identify four possible economic justifications for the Government's inaction, but none of the four is persuasive.

A. Leverage of the Installed Base by Competitors

Although the Government has not articulated an economic rationale for its position, the Justice Department may have concluded that a monopoly of the X86 operating system market by Microsoft is inevitable -- either because MS DOS is already locked-in or because an "increasing returns" market will cohere around a standard in any case. Following this approach, the Government may have concluded that the best hope for competition in the operating system market is through an operating system program compatible with MS DOS, but made by a Microsoft competitor. Arguably, a vendor of such a program could tap into Microsoft's huge installed base and attempt to displace Microsoft by "migrating" users to subsequent versions of the competitor's operating system.

If such was ever in the Government's contemplation, events since the announcement of the settlement between the Justice Department and Microsoft have shown that

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such a scenario is unrealistic. Novell has withdrawn its MS DOS compatible operating system from the market entirely. See, supra note 14. And Microsoft's market is so strong that IBM selected Microsoft's MS DOS program for pre-installation on a new line of IBM personal computers, instead of IBM's own PC-DOS (compatible) program -- notwithstanding the fact that IBM's product is technologically superior to MS DOS and is less expensive.[93]

IBM's technologically advanced OS/2 is faring no better. OS/2 is capable of executing both DOS and Windows 3.1 applications, and according to Microsoft executive Steve Ballmer, IBM is "offering computer makers OS/2 for free and may be even paying some to take it."[94] However, Microsoft's market power has resulted in IBM getting few if any takers, even on these terms. As one potential customer, a computer manufacturer, stated:

> Microsoft can kill us, ... I worry more about my dealings with Microsoft than I do about my competitors.[95]

B. Alliances

Alternatively, the Government may have concluded that other operating system competitors might combine with application developers in alliance-type combinations to prevent Microsoft from extracting monopoly rents from the business desktop. But alliances among companies rarely work in the best of circumstances -- i.e., in more conventional markets. Here,

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[93] See John M. Goodman, The DOS Heavyweights Go Another Round, InfoWorld, Aug. 29, 1994, at 87 (rating PC-DOS version 6.3 above MS-DOS version 6.22) and Earle Robinson, DOS-version Madness? Integration Coping with DOS, Windows Sources, Oct. 1994, at 163 ("my choice would be the IBM . . . it's cheaper") and Yael Li-Ron, PC DOS 6.3: DOS and DOS: Separated At Birth, PC-Computing, July 1994, at 94 (IBM's Ambra computers ship with MS-DOS).

[94] Don Clark & Laurie Hays, Microsoft's New Marketing Tactics Draw Complaints, Wall St. J., Dec. 12, 1994, at B6 (Ex. 41).

[95] Id.

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the alliances would have to produce or blend complex software technologies in order to make a competitive offering equally useful and reliable to that marketed by a single vertically integrated competitor, which is better able to guarantee seamless integration.[96] Similarly, from the economic perspective, the possibilities of real competition from an alliance-based product line are highly remote, at best. Microsoft's installed base and share of the applications market is so large that its products are "locked-in" and true competition can be restored only through truly massive forces or structural relief. See, e.g., W. Brian Arthur, Increasing Returns and Path Dependence in the Economy 2, 10-11 (1994).

Most importantly, although there are companies that make operating systems that run on different chips, no Microsoft competitor or group of competitors controls the operating system gateway to the network in the way that Microsoft does. Control of the "human interface" gateway on the home computer through the acquisition of Intuit will only heighten Microsoft's control throughout the market. In short, the prospects of an alliance to compete effectively with Microsoft, in the current market where the gateways are controlled by Microsoft, are extremely remote. Competitors would have to produce a competing information infrastructure through a different paradigm (e.g., cable television), something that is years, if not decades, away. Microsoft is, moreover, already committing substantial resources -- reportedly 500 employees by next June -- in anticipation of this paradigm shift. See Elizabeth Corcoran, Washington Post, Nov. 13, 1994, supra, at H6 (Ex. 44). It therefore is clearly preparing now to be in a position to control this new paradigm as well.

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[96] All of these problems are discussed in Rory O'Connor, San Jose Mercury News, Nov. 13, 1994, supra, at 1A, 28A (Ex. 34).

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C. "Tiered" Monopoly

Third, the Justice Department might have concluded that, although Microsoft has achieved a monopoly in the operating system market, there is no need for governmental intervention because Microsoft would prefer competition in business and home applications software. In other words, the Government might argue that Microsoft has no economic incentive to monopolize the applications market intentionally and has acquired its dominant position in the market only because of superior products. According to this approach, although Microsoft has a monopoly on X86 operating systems, it would actually prefer that the applications (and development tools) market be fully competitive in order to maximize monopoly profits from the operating system market. A schematic representative of the "desktop," Figure 3, is reproduced below for reference:

Level	Name	Examples
5	Applications	(a) Desktop applications (e.g., Lotus 1-2-3, dBASE, MS Word, MS Excel, WordPerfect) The Microsoft Office is a bundle of these applications. (b) Client applications as part of a network (e.g., Oracle Financials, SAP, Peoplesoft, D&B Software, etc.)
4	Development Tools	Basic, Pascal, C, Borland C++, Powersoft
3	GUI and/or OS Services	MS Windows
2	OS	Apple, DOS
1	Hardware	IBM, Apple, Compaq, Dell

Figure 8

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This type of economic thinking would suggest that if Microsoft truly had a monopoly at the second level (operating systems), it would prefer competition at all higher levels so as to maximize its ability to extract monopoly profits through the operating system level. And, according to this economic argument, there would be no point in Microsoft expending the resources to monopolize applications (level 5), since it would derive the same benefit by monopolizing the operating system (level 2).

Indeed, according to this approach, because of the presence of demand side economies of scale, there would be a need for Microsoft to control the X86 operating system (level 2). There is a network externality that must be solved by a single firm with control of both level 2 and all of the levels above it (3-5). All other factors being equal, according to this argument, consumers would be better off with the greatest possible variety of level 5 competition and the greatest possible adoption of one operating system standard.[97] Hence, if Microsoft controls the operating system, it would have an incentive to price it low because it could extract the profits through the applications (level 5). (Or, alternatively, Microsoft might price the applications low and take the profits out through the operating system.) Indeed, Microsoft might be willing to price below cost.

On the other hand, according to this economic approach, if a Microsoft competitor gained control of applications, Microsoft and the competitor would fight over the division of profits. This would be wasteful, would lead to higher total costs for the system because of "double marginalization" and would not lead to as great adoption of the overall system. Given that Microsoft controls the X86 operating system, so the argument would go, its profits would

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[97] See Michael Katz and Carl Shapiro, Systems Competition, supra.

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be maximized if the market for applications were made as large as possible. Hence, it would follow that Microsoft would want to control applications to make this market as large as possible and would do this by pricing applications at a low level, and by making the inter-connection between its applications and operating system as efficient as possible.

This economic approach is unpersuasive for three reasons. First, although Microsoft monopolizes the market for operating systems that run on the X86 chip, there are competitive operating systems that run on other chips -- Apple and UNIX, for example. These competitive operating systems, like the Microsoft operating system, run business applications. Hence, so long as these competitive operating systems exist, Microsoft can extract "monopoly rents" by monopolizing a layer above operating systems -- business applications.

Second, as the Government's complaint in this case points out, there must be "a variety of high quality applications" that run on an operating system if that operating system is to be successful. 59 Fed. Reg. at 42,847 (Complaint ¶¶ 16-18). Accordingly, control of applications enables Microsoft to maintain and increase barriers to entry in the operating system market, thereby solidifying and maintaining Microsoft's operating system monopoly.

Finally, control of the application layer enables Microsoft to price discriminate more effectively, thereby maximizing its monopoly returns. For example, because Microsoft also monopolizes business applications, it has the ability to selectively bundle some word processing functionality into operating systems, while at the same time offering a higher priced, more fully functional word processing program to users who need greater functionality. This enables Microsoft to extract greater revenues than would be possible merely by uniform operating system prices -- i.e., if Microsoft only monopolized operating systems, but not applications.

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In short, Microsoft has ample economic incentive to monopolize business applications. To the extent Microsoft is concerned at all about actual or potential competition for operating systems, gaining control of applications will ensure overall control of the desktop, regardless of what might transpire in the future with respect to operating systems.

A complete comparison of consumer welfare in a world with uniform dominant-firm pricing in operating systems and competition in applications on the one hand, with monopoly price discrimination on the desktop (operating system and application together), on the other hand, is beyond the scope of this Memorandum. However, economic theory would strongly suggest that with respect to pricing, competition in applications, coupled with imperfect competition in operating systems -- or at least the presence of potential competition in operating systems -- is preferable to monopoly of the entire desktop. Moreover, in terms of technology, it is considerably more likely that the best technology will emerge in applications if there is open competition for the technology, rather than if it is dominated by the firm that monopolizes operating systems. That is especially true if the reason that Microsoft is able to monopolize applications is because it can leverage its operating systems monopoly and not because of any superiority of its technology.

D. Efficiencies of Integration

Finally, the Government might justify its failure to act on the belief that the benefits Microsoft is providing by vertical and horizontal integration outweigh any anti-competitive effects. Microsoft will point out that it seamlessly integrates new technologies into new markets, and it will argue that unless it is permitted to link and leverage, these markets will not be opened in a way meaningful for consumers. It will further argue that if markets are opened by less efficient alliances, the services are bound to cost more because Microsoft

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competitors will not enjoy the efficiency benefits of integration. Indeed, according to this argument, allowing Microsoft to leverage Windows from one market to the other amortizes the research and development costs over a broader base of potential customers, with the result that Microsoft can charge less for the product in the first instance.

Furthermore, Microsoft presumably will argue that because these markets and technologies exhibit increasing returns, they will gravitate toward a standard (i.e., a monopoly) anyway. According to this argument, it would be economically wasteful to require two networks that do the same thing. And, if there is only going to be one standard, that standard should be chosen by the market, as opposed to by Government intervention.

There are two important responses to this argument. First, software is not similar to many conventional products in an important way. With software it is possible to achieve virtually all of the benefits of integration without excluding competitors. There is no reason why an application developed by an ISV cannot work just as well with the operating system as a Microsoft application, provided Microsoft provides necessary information to application competitors on a timely and complete basis.

Second, while there are benefits to vertical and horizontal integration that Microsoft will point out, there are also very substantial costs. The enterprise server market, for example, is currently organized into a number of horizontal layers, each of which is characterized by strong competition. Generally speaking, consumers prefer this horizontal competition. See, e.g., The Economist, Feb. 27-Mar. 5, 1993, supra, at 11 (Ex. 14). Microsoft is attempting to impose a verticality on the enterprise market so that it can extract monopoly rents.

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Benefits of vertical integration, as opposed to horizontal competition at each layer, both on the desktop and the server, should be evaluated on the basis of product quality and incentive to innovate, as well as product cost. It is clear that vertical integration will allow Microsoft to displace even superior technologies. As PC Magazine recently observed:

> Since Microsoft is in a position where its operating system is dominant . . . [i]n order to be successful, Microsoft Network doesn't even have to be the best on-line service; it just needs to be good enough and the most convenient.

Michael J. Miller, PC Magazine, Jan. 24, 1995, supra, at 79-80 (Ex. 25). Similarly, if Microsoft controls the operating system gateway layer, its vertical integration will permit the displacement of superior products at the applications (and development tools) layer merely because of the vertical integration. The displacement of superior products is clearly a cost that should be evaluated, offsetting Microsoft's claim that its products would be lower-priced to the consumer.[98]

Moreover, once Microsoft achieves dominance in a market, it has little incentive to innovate.[99] So the negative effects of vertical integration include both the displacement of superior products, as well as the diminution of the incentive to advance technology that has become a standard. The latter cost should be evaluated as well.

Nor is it altogether clear that vertical integration will necessarily produce efficiencies (that translate into lower prices) over, say, horizontal competition at each layer.

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[98] Joseph Farrell and Garth Saloner, Installed Base, supra; Paul David, Amer. Econ. Rev., May 1985, supra.

[99] Indeed, Microsoft's operating system "lock-in" has permitted it to bring demonstrably inferior products to market (products that did not enjoy any appreciable consumer acceptance) without negative consequences to the company. See Michael Morris, Microsoft Deal: Too Little, Too Late, S.F. Examiner, July 24, 1994, at C-5. (Ex. 33)

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There is not yet empirical research on point, but there is certainly theoretical research suggesting that there are benefits to horizontal competition in the vertical layers.[100] Hence, while there is theoretical literature that documents the efficiency of the horizontal competition model, the real challenge is maintaining the horizontal model in the world. Increasing return economics indicates that there is no reason to believe that the market, as currently structured, will choose the "best" product at a particular level. Rather, there is every reason to believe that Microsoft, through leverage from control of the operating system, will be able to impose verticality, with its associated costs -- notwithstanding the fact that users appear to desire the benefits of horizontal competition. See, e.g., The Economist, Feb. 27-Mar. 5, 1993, supra (Ex. 14). In short, Government intervention is necessary merely to provide a sufficiently level playing field for the horizontal model to have a reasonable chance of succeeding.

VI

ANTITRUST ENFORCEMENT

This section of the brief identifies the deficiencies of the proposed Final Judgment and compares the relief sought by the Government in this case to the relief sought by the Government in comparable situations involving pharmaceutical, computer and telecommunications monopolies. Finally, the section analyzes the relevant case law that would support similar relief in this case, particularly a preclusion on the use of leverage from an installed base that was procured by "anticompetitive practices."

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[100] Joseph Farrell, Hunter K. Monroe and Garth Saloner, The Vertical Organization of Industry and Systems Competition Versus Component Competition, October 1994 (working paper).

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A. Deficiencies of the Proposed Judgment

Manifestly, the proposed judgment has failed to achieve its stated purposes. Instead of saving consumers money and providing them with greater operating system choices as the Attorney General promised, the settlement has permitted Microsoft to run yet another competitor out of the operating systems market (Novell) and raise its own prices to resellers. From an economic perspective, this was to be expected. The relief proposed by the Government will neither maintain nor restore competition in the operating systems market. More ominously, the settlement clears the way for Microsoft to use its unfairly acquired installed base to run competitors out of other software and networking markets, as well.

According to the Government's complaint, Microsoft used anticompetitive licensing practices from at least 1988 to 1994. As noted earlier, during that period, Microsoft maintained its greater than 90% share of the X86 operating system market,[101] thereby increasing its installed base six-fold.[102] Contrary to the assertions of the Assistant Attorney General, the relief proposed by the Government, a cessation of further anticompetitive practices, will not restore competition to the X86 operating system market because of the "network effects" present in the market.

Because Microsoft now has a huge installed base and an overwhelming market share of X86 chip operating systems, thousands of applications have been written for the

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[101] See, e.g., supra, note 32. (Microsoft presently holds greater than 90% of the X86 operating system market share); Christopher O'Malley, Personal Computing, October 1986, supra, at 181, 183 ("Microsoft's operating system" has "better than 95 percent" share of the X86 systems.)

[102] Department of Justice Press Conference (July 16, 1994), at 3-11 (by Asst. Attorney General Anne Bingaman).

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Microsoft operating system. Microsoft products, in economic jargon, are "locked in." New purchasers of computers with X86 chips have every incentive to demand Microsoft operating systems -- and no incentive to demand the operating systems of its competitors. Given the huge installed base, OEM's will therefore preinstall the Microsoft operating system in order to meet consumer demand -- whether Microsoft continues to pursue "per processor" licenses or not.

This conclusion is demonstrable from the economic literature cited in earlier sections. It is also obvious to the journalists, analysts and commentators who follow the computer industry. For example, following announcement of the settlement, PC Week wrote:

> According to computer manufacturers, industry analysts and end users, the outlook is grim for Novell's DOS and IBM's PC-DOS and OS/2. They say there is not much motivation for PC manufacturers to pre-install a competing product, since Windows has millions of users and thousands of software applications.

See Jeff Bertolucci, Microsoft Settles: Business As Usual, PC World, Oct. 1994, at 72 (Ex. 31).[103] Furthermore, Microsoft has adopted new marketing incentives that violate the

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[103] See also Stuart J. Johnston, Decree: Deal or Dodge?, Computerworld, July 25, 1994 ("Interviews with PC hardware vendors last week indicated few are likely to switch to a competing system any time soon. 'Customers have already voted with their dollars in a very strong way for DOS and Windows. I don't see that changing,' said Howard Elias, a vice president at AST Research, [a leading OEM].") Jane Morrissey, DOJ Accord Fosters 'Too Little, Too Late' Perception, PC Week, July 25, 1994, at 1 ("[O]bservers doubt the consent decree agreed on will have much effect on the company or its competitors," because it is "too little, too late."); Jesse Berst, Behind The Smoke: Microsoft Wins Again, PC Week, July 25, 1994, at 106 ("Does the agreement really change anything? No. . . . If the decree had come five years ago, when there were viable MS-DOS clones, it might have had some immediate impact. Now, in a world where MS-DOS is on the way out and Windows has no real clones, it will have no short-term impact") (Ex. 27); Andrew Schulman, Dr. Dobb's Journal of Software Tools, Oct. 1994, supra, at 143 ("the change from per-processor to per-copy licensing probably comes about four years too late"); Claudia Maclachlan, Software Makers Mull Over Microsoft Legal Challenge, National Law Journal, Aug. 1, 1994, at B1 ("They can't do [original equipment manufacturer] pricing, but they don't need it anymore.")

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spirit if not the letter of the consent decree by rewarding OEMs for activities designed to prevent them from doing business with competing operating system vendors. Don Clark & Laurie Hays, Wall St. J., Dec. 12, 1994, supra, at B6. In short, Microsoft's new practices achieve substantially the same effect as those banned by the Judgment.

More importantly, Microsoft remains free to leverage its installed base -- apparently with the Government's blessing -- to put competition out of business in scores of new markets: business applications, entertainment software, personal finance software, on-line systems, server technologies, etc. This key issue is simply not mentioned in the Government's Tunney Act filings, but, as with "lock-in," the significance of the issue is not lost on the industry:

> The settlement did not specifically address what many competing companies consider the antitrust issue. Microsoft, they say, has used its control of DOS and Windows to extend its hold on the software sector.

See David Einstein, Microsoft Unscathed by Settlement, S.F. Chronicle, July 18, 1994, at A1 (Ex. 32).[104] As explained in Section V.C., supra, Microsoft's use of leverage against

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[103](...continued)

Indeed, even Microsoft's supporters concede that, "[a] year from now, [the proposed decree] will be" no more than "a blip on the radar screen of computing history." William Casey, Let's Stop Beating On Microsoft, Washington Post, July 25, 1994, at F15. "Issued five years ago, the ruling would have had an effect . . . users were open to alternative environments, even if it meant migrating from [Microsoft's products]." Id. "Those choices, and the years in which they could have been made freely, are ancient history. . . . It's a fact that [today] the operating environment of choice on Intel-based processors is DOS and Windows." Id.

[104] See also John Markoff, N.Y. Times, July 18, 1994, supra, at D1 (Ex. 24) ("The agreement leaves untouched what many computer industry executives say is Microsoft's principal advantage -- that it develops both the basic operating system software that makes personal computers run . . . and applications software . . . that performs specific tasks."); id. ("The other (continued...)

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application competitors damages competition in the operating systems market, the very market the Government purports to address.

The pernicious use of leverage is well known to the Justice Department. Decrees sought by the Antitrust Division in comparable circumstances over the past forty years have prohibited leveraging of monopoly power to dominate related markets.

B. Comparable Consent Decrees

It is hardly aberrational for the Department of Justice to settle monopolization cases in high technology industries by securing consent judgments that prohibit the use of leverage from a monopolized market to a market in which competition is present. Some of the largest monopolization cases in history were settled on such a basis.

1. Parke, Davis Decree (Pharmaceuticals)

The decree entered in United States v. Parke, Davis and Co. and Eli Lilly and Co., 1951 Trade Cas. (CCH) ¶ 62,914 (E.D. Mich. 1951), prevented Parke, Davis and Eli Lilly from using their market power in the primary market for pharmaceuticals to exert leverage into the secondary market for gelatin capsules (used to contain individual doses of particular drugs). The decree did not foreclose the defendants from competing in the capsule market, but it imposed severe restrictions designed to ensure competition:

> No Acquisitions of Stock in Companies in the Secondary Market: Defendants were prohibited for ten years from acquiring any

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[104](...continued)
important issue not specifically addressed in the consent decree is whether Microsoft has been able to leverage its virtual monopoly in operating systems into domination of applications software -- a far bigger and more lucrative market"); Claudia Maclachlan, National Law Journal, Aug. 1, 1994, supra, at B1 ("As long as [Microsoft has] a dominant position in operating systems . . . it allows them to leverage that into applications. This agreement does nothing to the status quo.") (internal quotation omitted).

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interest in any business engaging in the manufacture or sale of capsules, capsule manufacturing equipment, or capsule filling equipment unless they applied to the court and made an affirmative showing that such acquisition would not substantially reduce competition. (An equivalent Microsoft decree would prohibit Microsoft from acquiring any interest in any company making or selling application programs (e.g., Intuit).)

Mandatory Licensing of Patents Pertaining to Secondary Market: Defendants were required to grant to "any applicant" (except the other defendant) royalty-free, unrestricted licenses under all Defendants' existing capsule-related patents. Defendants also were required to grant licenses to all of their future capsule-related patents in return for a "reasonable and non-discriminatory royalty." (An equivalent Microsoft decree would require, at minimum, that Microsoft grant royalty-free licenses on all its existing application and server software patents.)

Publication of Documentation to Enable Competition in Secondary Market: Defendants were required for five years to provide to all applicants "a written manual . . . describing the methods, processes, materials and equipment used by [Defendants]" in the commercial manufacture of capsules. (A provision that would have the same effect in the Microsoft decree would require, at minimum, that Microsoft immediately provide all competitors or potential competitors all operating systems documentation and specifications necessary to create a well-behaved application program. Going forward, Microsoft would have to provide the information necessary to place each of its competitors in the applications program market on an equal footing with Microsoft itself.)

This decree remained in effect until 1987. See United States v. Parke, Davis and Co. and Eli Lilly and Co., 1987-2 Trade Cas. (CCH) ¶ 67,834 (E.D. Mich. 1987).

2. International Business Machines Corp. (Computers)

In 1956, the Justice Department settled its monopolization case against IBM with the entry of a comprehensive decree, United States v. International Business Machines Corp., 1956 Trade Cas. (CCH) ¶ 68,245 (S.D.N.Y. 1956). That decree still remains in effect.

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The IBM decree prevents IBM from utilizing its power in a primary market (the market for "tabulating systems" and "electronic data processing systems") to create a monopoly in secondary markets (the markets for service on IBM machines). Unlike the Microsoft settlement, however, the IBM decree makes a comprehensive effort to prevent leveraging of the primary market monopoly. Rather than prohibiting a small number of specific practices (e.g., per-processor licensing), the IBM decree fundamentally restructured IBM's method of operation in the primary market to eliminate leverage opportunities.

A similar decree against Microsoft would have included (at minimum) provisions requiring that Microsoft: (1) train its customers and competitors in the use and structure of Windows, (2) disclose to all developers, customers and competitors the same details about Windows that it discloses to its own employees and at the same time, (3) make public Microsoft technical documentation and tools used in Windows development, and (4) create a separate corporation for developing application programs, with a true "Chinese Wall" between the applications and operating system development personnel.

3. American Telephone and Telegraph (Telecommunications)

In January of 1982, the Department of Justice filed a Final Judgment breaking up the AT&T monopoly. In its response to comments on the proposed final judgment, the Government explained that it sought broad relief to prevent the type of leverage that Microsoft is currently employing:

> The theory of both the Western Electric and AT&T cases was that, as a rate base/rate of return regulated monopolist, AT&T has had both the incentive and the ability, through cross-subsidization and discriminatory actions, to leverage the power it enjoys in its regulated monopoly markets to foreclose or impede competition in related, potentially competitive markets.

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47 Fed. Reg. 23,320, 23,335 (1982). Microsoft is not a regulated monopolist, but its monopoly in operating systems is no less thorough and its use of leverage to dominate related markets no less pervasive. Yet according to newspaper interviews given by the Assistant Attorney General following announcement of the settlement with Microsoft, the Justice Department "never considered" breaking up Microsoft. Viveca Novak, Antitrust's Bingaman Talks Tough in Microsoft Case, Wall St. J., July 19, 1994, at B5.

C. Case Law

Had the Justice Department sought to prevent Microsoft from leveraging its installed base of "locked-in" operating system users, its position would have found support in the case law. Cases in which leveraging claims have been denied involve factual situations in which the plaintiff conceded that monopolization of the target market was impossible, even with the leveraging. See, e.g., Alaska Airlines, Inc. v. United Airlines, Inc., 948 F.2d 536, 546 (9th Cir. 1991), cert. denied, 112 S. Ct. 1603 (1992).

This is not such a case. Here, both Microsoft and the Government concede that Microsoft has a monopoly in the operating system market and that Microsoft used "anticompetitive practices" to increase its installed base in operating systems six-fold. Microsoft then clearly expressed its intention to monopolize the business application market and thereafter succeeded by leveraging. Now, Microsoft's executives have clearly expressed their intention to monopolize every "specific application of corporate information systems." Brent Schendler, Fortune, Jan. 16, 1995, supra, at 40. Microsoft's tactics, coupled with the economics of the markets at issue, would lead inexorably to the conclusion that Microsoft will succeed.

A number of courts, including the Supreme Court, have evaluated conduct in one market based upon conditions in an adjacent, related market. Relevant decisions have reflected

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increasing returns-type analyses. For example, in Eastman Kodak Co. v. Image Technical Services, Inc., 112 S. Ct. 2072 (1992), the Supreme Court held that factual issues regarding consumer "lock-in" in the after-market for replacement parts constituted a proper basis on which to deny motions for summary judgment in a tie-in case. Similarly, a plaintiff's use of leverage in lock-in situations has frequently been cited in the lower courts as a principal basis for the denial of summary judgment motions in both tie-in and monopolization situations.[105]

One good example of such thinking is Grappone, Inc. v. Subaru of New England, Inc., 858 F.2d 792 (1st Cir. 1988). There the First Circuit (Breyer, C. J.) provided what it referred to as a more "refined analysis" for tie-in situations. This analysis begins to consider the anti-competitive consequences of actions that require competitors to enter the market on two levels (rather than a single level) of business. Id. at 795-96.

VII

PROPOSED PROCEDURES UNDER SECTION 16(f)

Reflecting its emphasis on the importance of court review of decrees agreed to by the Justice Department, Congress in 15 U.S.C. § 16(f) has expressly authorized a wide variety of procedures that the Court may use in making its determination regarding the public interest. These procedures include, inter alia, taking the testimony of Government officials or experts, or other expert witnesses (§ 16(f)(1)); appointing a special master or court expert (§ 16(f)(2));

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[105] See, e.g., Digidyne Corp. v. Data General Corp., 734 F.2d 1336, 1340-43 (9th Cir. 1984), cert. denied, 473 U.S. 908 (1985); (software); Ortho Diagnostic Systems, Inc. v. Abbott Laboratories, Inc., 822 F. Supp. 145, 155-56 (S.D.N.Y. 1993) (blood screening technology); Viacom International, Inc. v. Time Inc., 785 F. Supp. 371, 377 (S.D.N.Y 1992). See also Lee v. Life Ins. Co., 829 F. Supp. 529, 537-39 (D.R.I. 1993), aff'd, 23 F.3d 14 (1st Cir.), cert. denied, 1994 U.S. LEXIS 7596 (1994).

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examining documentary materials (§ 16(f)(3)); or "taking such other action in the public interest as the court may deem appropriate" (§ 16(f)(5)).

In this action, some information is relatively well-documented in the public record, and hence is less pressing significance to the Court's ability to engage in a meaningful public interest analysis. By way of comparison, in United States v. Yoder, 1989-2 Trade Cas. (CCH) ¶ 68,723, at 61,797 (N.D. Ohio 1986), the Department provided the court with an affidavit identifying the number of competitors, distributors and customers in the industry whom it had contacted about a proposed modification to a consent decree, and described the responses and concerns of those contacted. See id. at 61,797 n.10. Here, the Department has simply asserted orally that "by and large I think we got positive feedback" from competitors and customers, then adding (in response to a comment by the Court) "there were clearly some people who wished that we had done more." Tr. of Status Call, Sept. 29, 1994, at 13:16-22. These observations certainly do not give the Court the full flavor of industry concerns, but critical reports in the media amply document the true reaction in the industry to the proposed

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decree.[106] It is, therefore unnecessary to further burden the Court with affidavits or the testimony from those in the industry regarding these concerns.

Similarly, the nature of the allegations regarding Microsoft's conduct are well-established. Media reports, publications such as Hard Drive, this brief, and the Government's own submissions all document what the alleged illegal conduct is claimed to be: undocumented calls; early disclosure of operating systems information to Microsoft's own applications engineers; predatory preannouncements; predatory bundling and unbundling of operations and applications functionality; restrictive licensing practices; and the use of subsidized pricing to leverage into the applications market using monopoly profits from operating systems. See supra text at notes 69-70. It would therefore appear unnecessary to hold hearings in which various independent software vendors, OEM manufacturers, and other industry participants recount particular instances of such alleged conduct.

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[106] See, e.g., David Einstein, S.F. Chronicle, July 18, 1994, supra, at A1 (Ex. 32) (Ernie Simpson, president of a software company which develops programs for use with Windows, called the decree "a waste of time"); Quote of the Week, InformationWeek, Aug. 1, 1994, at 10 (Reacting to the proposed decree, Gordon Eubanks, CEO of software firm Symantec Corp., said simply, "That's it?"); John Markoff, N.Y. Times, July 18, 1994, supra, at D1 (Ex. 24) (quoting Martin Goetz, cofounder of Applied Data Research, the nation's first software company, as saying of the decree, "The Justice Department hasn't listened to the cries of the software companies"); Jane Morrissey, PC Week, July 25, 1994, supra, at 1 (Ex. 26) (quoting Mitchell Kertzman, chairman of Powersoft Corp., as saying the proposed decree will have "close to zero impact," and that "to the extent that Microsoft's behavior prevented other operating systems from succeeding, the war is over . . . DOS is it and Windows is it"); Andrew Schulman, Dr. Dobb's Journal of Software Tools, Oct. 1994, supra, at 143 (Ex. 13) (quoting spokesman for Compaq as saying "Windows is the standard--not much will change"). See also David Einstein, S.F. Chronicle, July 18, 1994, supra, at A1 (Ex. 32) (quoting a leading industry analyst as concluding that "[t]he operating system wars are over -- Microsoft is the winner . . . Microsoft is the Standard Oil of its day"); Claudia Maclachlan, National Law Journal, Aug. 1, 1994, supra, at B1 ("As long as [Microsoft has] a dominant position in operating systems . . . it allows them to leverage that into applications. This agreement does nothing to the status quo") (internal quotations omitted).

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Instead, these amici submit that what is missing from the record before the Court are two categories of information, neither of which should require unduly protracted hearings, but which together should provide the Court with a sufficient record to make a determination under Section 16(e). First, in the course of its investigation, the Government has reviewed large quantities of documents from Microsoft, and these amici believe that a very small group of these documents have been identified by the Government as "key" documents. These documents largely should answer questions regarding Microsoft's intent and use of various illegal practices. They should be turned over to the Court for its review.

Second, the Government should be required to submit affidavits from its economic experts that set forth in detail what those experts anticipate the operating systems and applications software markets will look like in five years, assuming that the present proposed decree were implemented. Such a submission should indicate whether, under the present decree, the Government's experts anticipate that competition will have been restored in the operating systems market by that time. If the Government's experts believe that competition is not likely to have returned to the market by that time, they should be required to indicate what effect different alternative proposals might have on restoring competition to the market. And, if they believe under "increasing returns" theory that it is simply too late to restore competition -- that the operating systems market "runs to scale," and having been permitted to establish dominance through its illegal practices, that Microsoft cannot now practically be unseated -- the Government should be required to indicate what alternatives it has considered to minimize adverse consumer consequences resulting from this monopoly.

These amici submit that the affidavits from the Government's economists also should address the extent to which they anticipate that Microsoft will have been able to leverage

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its operating systems monopoly into secondary software markets. Because Microsoft's installed base monopoly (and the resulting monopoly profits) were illegally acquired, the Government's economists should explain why it is unnecessary from an economic point of view to implement provisions such as those present in the IBM and Eli Lilly consent decrees. This analysis would include, for example, the effect of alternatives such as prohibiting Microsoft from acquiring stock in companies that make or sell application programs (Eli Lilly); spinning off its applications division into a separate subsidiary, and enjoining it from giving any benefit to the subsidiary that is not also provided to third-party applications providers (IBM); and making public Windows technical documentation and tools used in Windows development (IBM). In the event that such alternatives were not viewed as sufficient to ensure a "level playing field" in the applications markets, given Microsoft's now-dominant installed base, the economists should address whether divestiture (such as in AT&T) is the appropriate remedy.

Based upon the information made available to the Court as a result of this analysis, these amici believe that the Court would be in a position to accept or reject the Government's current proposed decree, or to identify those modifications that would be necessary to bring the decree within the public interest standard. Cf. AT&T, 552 F. Supp. at 153 & n.95, 212-13. At a minimum, such submissions would provide a factual record which the Court's own economist expert could review in considering the economic issues raised by the proposed decree, or to which economists could respond on behalf of other interested parties.

Given the extreme importance of these proceedings to the future of the American software industry, and hence to the economy as a whole, the Government should be permitted to do no less. As documented in previous Sections, economic theory predicts that, even without resort to its ongoing (and unchecked) illegal practices, Microsoft would very likely be able to

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leverage its unlawfully acquired installed base in operating systems to monopolize the entire business and home software network in the United States. The Government's decision to do nothing to restrain Microsoft's ability to engage in such monopoly leveraging, or even to curtail Microsoft's use of blatantly predatory and unlawful practices in furtherance of that end, requires explanation. Absent such explanation, these amici submit that the Court has no choice but to reject the proposed consent decree as plainly outside the bounds of the public interest.

Dated: January 10, 1995

Respectfully submitted,

WILSON, SONSINI, GOODRICH & ROSATI

By

Gary L. Reback

MTC-00030631_0364

PROOF OF SERVICE BY OVERNIGHT COURIER

I, Sharon S. Kelly, declare:

I am employed in the City of Palo Alto, County of Santa Clara, State of California. I am over the age of 18 years and not a party to the within entitled cause. I am readily familiar with Wilson, Sonsini, Goodrich & Rosati's practice for collection and processing of correspondence for overnight delivery by courier. In the ordinary course of business, correspondence would be consigned to a messenger service on this date.

On January 9, 1995, I served the attached **NOTICE OF MOTION, MOTION, AND MEMORANDUM IN SUPPORT OF MOTION TO FILE MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT** and **MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT** as well as the **APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT** on the parties listed below by placing the documents described above in an envelope addressed as indicated below, which I sealed. I consigned the envelopes to an overnight courier service by placing it/them for collection and processing this day following ordinary business practices at Wilson, Sonsini, Goodrich & Rosati, 650 Page Mill Road, Palo Alto, California 94304-1050, to be personally served on the following:

Honorable Stanley Sporkin
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Washington, D.C. 20001

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IN THE UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, vs. MICROSOFT CORPORATION, Defendant.	Civil Action No. 94-1564 (SS)

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT

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TAB	SOURCE
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TAB 1

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

USER OUTLOOK

Microsoft: Not So Marvelous

BY LAWRENCE J. MAGID

Microsoft Chairman Bill Gates didn't get to be the richest person in America by being modest or by playing patsy with his competitors. So it came as no surprise to hear Gates belittle his competition and exaggerate the value of his offerings at the recent Comdex trade show.

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FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

Gates was introducing the Microsoft Network. Preliminary reports on this online service, code-named "Marvel," have been circulating for months.

Like everything Gates announces, The Microsoft Network is purported to be the greatest thing since individually wrapped cheese slices. In introducing the service, Gates made some not-so-subtle digs at current online providers. "There is an opportunity to bring innovation into this market," said Gates, adding that existing services "take print material and move it over."

GOOD, NOT REVOLUTIONARY

But that's not entirely true. While the three big online services (CompuServe, Prodigy, and America Online) each offer online magazines, newspapers, and other print material, they also offer interactive forums, live chat rooms, shareware libraries, online technical support, and other information and interactive services that you can't get from your local newspaper. All three services are also experimenting with sound and graphics, and all plan to introduce animation and full motion video when communications technology (i.e., ISDN) lets them get around the limits of today's phone system. Bill Gates and his team of developers may be smart, but they have an exaggerated opinion of themselves when compared to the rest of the world.

Besides, what did Gates show when he demonstrated the service? An icon pointing to an online edition of *USA Today*. This is creative? To be fair, Gates also demonstrated some interesting new technology, including an online prototype of Microsoft Bookshelf, the company's multimedia reference guide. Most commercial online services offer online encyclopedias and other reference works, but none currently include graphics as a routine part of the deal.

Gates also showed how the Microsoft Network will be integrated with Windows 95. Users will be able to drag icons directly from the service to their Windows desktop. In theory at least, information that's online will be as easy to locate as information on your computer's hard disk. Of course, your modem will have to dial into the network to retrieve the information, at least until we're all hard wired into cyberspace.

I was also impressed by the way the Microsoft Network will display complex graphics like color photos. When you enter an area that uses images, graphics will quickly reveal themselves in low-resolution form, then become sharper and more vivid as data streams over the modem. This gradual display of graphics is necessa because the Microsoft Network will initially suffer the same phone-line and modem limitations that other online services do.

As interesting as Microsoft's service may be, it's hardly revolutionary. Prodigy, CompuServe, America Online, and Interchange (Ziff-Davis's forthcoming service) are all capable of offering similar features. The Microsoft Network won't be available to the public for at least eight months; its

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USER OUTLOOK

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competitors will have plenty of time to catch up, if not move beyond Microsoft's plans.

Three basic issues affect the popularity of online services – interface, price, and content. Prodigy, CompuServe, and America Online can compete quite successfully on all three fronts. All three have plenty of time to tweak their interfaces, all can adjust their prices, and they all have a head start when it comes to content. Prodigy will announce a major interface overhaul in early 1995, and has had several years to build up its online content. CompuServe is reportedly working on easier-to-use software and, after nearly 15 years, is a leader in online databases, shareware, and more. America Online, though lacking the content of its two major competitors, leads the way with online editorial offerings and is generally regarded as being easy and pleasant to use.

Ziff-Davis's Interchange is every bit as up-to-date as Microsoft's Network. The only advantage Microsoft has is its ability to build its online software into Windows 95. And therein lies my biggest concern.

A RIGGED PLAYING FIELD

By making its network part of the operating system, Microsoft tilts the playing field in its direction. Microsoft clearly has the right to enter the online business, but I question whether it's fair to the other players if the Microsoft Network – and only the Microsoft Network – is part of Windows 95.

Imagine that utility companies sold appliances. You've just moved into an empty house and after turning on the power, the power person says she has a great refrigerator in the truck that she'd be happy to install for you. "It's as cheap as any you'll get in town and you don't have to make any payments until after you've used it for a while. Besides, our refrigerator is optimized to work best with our electricity." That utility company would sell a lot of refrigerators – and every other appliance vendor would rightly cry foul. This would never happen in real life, because utilities are regulated monopolies. Microsoft, despite the Justice Department's recently rulings, is a virtual monopoly, controlling nearly 80 percent of the personal computer operating system business.

Gates claims that his bundling the Network with Windows 95 is no different than IBM's bundling Prodigy software with some of its machines. And IBM does own half of Prodigy. But IBM also offers America Online on some of its machines. More germane, IBM controls only a fraction of the personal computing market. Nobody, except Microsoft, has a grip on more than about 10 percent of the market.

Microsoft's bundling scheme has caused America Online president Steve Case to cry foul, accusing Microsoft of creating an "unlevel playing field." Others in the online industry agree. Robert D. Mainor, vice president of Product Marketing for CompuServe, didn't go as far as Case in criticizing the Microsoft announcement, but he did say that "Microsoft enjoys a distribution model that no one else has access to." He added that his service, in business for about 15 years, is in a good position to compete with Microsoft. If CompuServe's claim of 2.4 million members is accurate, it is currently the largest online service.

Prodigy's president, Ross Glatzer, said that Microsoft's entry will help expand the total online market. However, he agrees that Microsoft has its thumb on the scale. Glatzer would welcome the opportunity to include Prodigy and other online service software with Windows 95 so that users would have free choice of services.

I think Microsoft is a great company. It produces some excellent programs and it improves America's trade imbalance. But it doesn't have the right to run roughshod over the entire computer industry. Microsoft's practices affect its competitors and, ultimately, its customers. The computer industry needs competition and a balance of power. Right now, that power is tilting toward Redmond, WA. It's time for the folks in the other Washington – the one between Maryland and Virginia – to wake up and start taking a hard look at Microsoft's anti-competitive behavior. ★

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Larry Magid is the author of ***Cruising Online: Larry Magid's Guide to the New Digital Highways*** *(Random House, 1994) and* ***The Little PC Book: A Gentle Introduction to Personal Computers*** *(Peachpit Press, 1993). He is also an internationally syndicated columnist for the* **L.A. Times**. *You can reach Larry on the Internet at magid@latimes.com, via CompuServe at 75300,2105, via Prodigy at KPVN58A, via America Online as LarryMagid, or care of* ***Computer Currents.***

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TAB 2

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Exh. 2

1ST STORY of Level 1 printed in FULL format.

94-1564 SS

Copyright 1983 McGraw-Hill, Inc.
Business Week

November 21, 1983

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

SECTION: INFORMATION PROCESSING; Software; Pg. 114

LENGTH: 1565 words

HEADLINE: A FIERCE BATTLE BREWS OVER THE SIMPLEST SOFTWARE YET

BODY:

The all-out fight for supremacy among the hardware makers -- Apple, Digital Equipment, IBM, and 150 others -- has been getting the headlines recently in the mushrooming personal computer market. But while it may never attract as much attention, an equally important battle is about to explode among the leading companies that write software for the small machines. Prompting this latest free-for-all is the emergence of an entirely new class of product called "environment" software Environment software has no specific application such as word processing or financial analysis. It is designed to make such jobs easier for users who are not technically trained -- a group that is rapidly becoming the majority of personal computer users. The new generation of software, which was pioneered with such machines as Xerox Corp.'s Star and Apple Computer Inc.'s Lisa, splits the computer screen into sections, or "windows." Users can run different applications software simultaneously in each window. Normally, a computer displays only one program at a time.

The new software more or less replicates tne desktop on the computer screen. In effect, a business executive or professional can put the equivalent of a letter, financial spreadsheet, or Rolodex file in the different windows on the computer display, or electronic desk.

The software battle pits three leading developers -- Microsoft, Digital Research, and VisiCorp -- against one another. Each wants its product to become the industry standard. The competition is especially fierce, because windowing programs are expected to be standard on every personal computer -- a market potential of as many as 5 million units in 1984 alone. "Environments used to feature, but now they have become a fundamental part of the [personal comter] system," says Esther Dyson, president of Rosen Research Inc.

In the fight to get their new software running on the largest variety of computer brands, the competitors are wooing the hardware makers for endorsements. The outcome will shape not only the future of the current $1.5 billion annual market for personal computer programs but also sales of the equipment itself, since the machines tnat run the most popular software will be among the best sellers. As a result, leading hardware makers -- most notably Apple and International Business Machines Corp. -- are being drawn into the fray.

The battle lines are forming rapidly. On Nov. 10, Microsoft Corp. was expected to announce that 23 computer makers -- including Apple, Digital Equipment Honeywell, Tandy, and Texas Instruments -- have signed up to use its

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1983 McGraw-Hill, Inc., Business Week, November 21, 1983

version of the new software, which it says will be ready by April. Meanwhile, VisiCorp, the first software company to offer this next-generation product to the industry, is racing to get its VisiOn program out the door (page 115). Not to be left out, Digital Research Inc., which has not yet demonstrated its product, is leaking word that it will begin delivering its version of environment software to as many as 10 computer makers before the end of the year. "It's a real battle of the software developers," says Steven A. Ballmer, a vice-president at Microsoft.

Competition will be fierce because there is not enough room in the personal computer marketplace to support several versions of environment software. Applications programs for specific tasks such as word processing and financial analysis will have to be rewritten to work with each environment package.

"The battle is to establish whose [environment software] is going to win, because software developers don't want to write programs for 18 different systems," says Rosen Research's Dyson. Adds Moize Adney, manager of internal software development at Texas Instruments Inc.: "The pressure to standardize will be there."

INDUSTRY STANDARD. Companies racing to market environment software are placed in something of a catch-22 situation. They must convince computer makers that many writers of applications software will develop useful programs to operate with their environment packages. But they must convince the software writers at the same time that their environment programs will be used on the largest number of machines.

Microsoft hopes to parlay the popularity of its MS/DOS operating system -- the housekeeping software that controls the basic functions of a computer -- into a marketing edge. Its new environment program, Microsoft-Windows, is actually just an extension of its operating system. An impressive 40% of personal computers sold -- including the best-selling IBM PC -- are controlled by the Bellevue (Wash.) company's operating system software. This penetration, Microsoft maintains, provides a ready market for Windows. If every computer that runs Microsoft's operating system adds Windows, Microsoft is well on its way toward becoming an industry standard, says the company's Ballmer.

'CHURCH AND STATE.' On the other hand VisiCorp is stressing its success in appli cations programs. The San Jose (Califcompany, which was made famous by the VisiCalc financial modeling and spreadsheet program, has developed a set of applications for its VisiOn environment package. "What will make a windowing system successful is the quality of the applications under it," says Danie Fylstra, VisiCorp chairman.

While archrival Digital Research has not formally announced its environment package, the company is working hard to line up applications software companies to write programs for use with its new windowing software. Digital Re search says its environment package is the safest choice, because the company does not write applications software. "We're not in the applications business like VisiCorp or Microsoft," says Digital Research President John R. Rowley. "We do not present a threat."

Rowley contends that competitors can use their own environment software to bring out applications packages before anyone else can. Microsoft, for one, denies that offering an environment program gives its own applications programs an advantage. "We have shown in the past that there is a very clean separation

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1983 McGraw-Hill, Inc., Business Week, November 21, 1983

between our operating system business and our applications software," says Ballmer. "It's like the separation between church and state. And if you don't play it straight, you can't expect to get the business." Microsoft is expected to hit sales of $70 million this year, double its figure for 1982.

Some applications software writers are concerned, however, that Rowley may be right. "VisiCorp is a competitor," says Fred M. Gibbons, president of Software Publishing Corp., which sells personal computer applications software. "Why should I trust them?" To cover their bets, some powerful independents could decide to go with more than one environment package. "There are many valid reasons to support more than one environment and let the marketplace decide," says Mitchell D. Kapor, president of Lotus Development Corp., which for now has gone with Microsoft for 1-2-3, its popular integrated spreadsheet and graphics package.

One variation on the environment theme is Quarterdeck Office Systems, a small Santa Monica (Calif.) startup. By the end of the year, Quarterdeck will begin shipping a $399 environment package called DESQ. But instead of persuading software writers to modify their programs, the company has designed DESQ for use with several existing applications programs. "With DESQ you just buy it and run it totally without having anything modified," says Therese E. Myers, president and founder.

PREEMINENT POSITION. As the battle begins to heat up, no company has produced the supporter that could carry the day: IBM. "IBM has established such a preeminent position in the marketplace that the supplier that has its environment on IBM will have the greatest success," says John R. Keifer, senior analyst at *InfoCorp*. Since the IBM PC was introduced in 1981, the computer giant has won more than 26% of the market. As many as 75% of personal computers, industry observers agree, are expected to follow the IBM PC design by 1985 (BW -- Oct. 3).

Few are willing to predict IBM's strategies in this key software market. "I don't expect IBM to endorse one environment in the near term," says Rosen Research's Dyson. "It will probably make them all available." But some observers say IBM will bring out its own environment software, and it is not clear where such a move would leave the independent software companies. IBM already has shown some of its own windowing software on an enhanced version of the PC, and there are reports of another IBM environment program, called Glass, that is being considered as a product. "With IBM's announcement of its own windowing capability, it looks to us that the big guy is starting his own standard," says Dennis V. Vohs, executive vice-president of Management Science America Inc., which owns Peachtree Software Inc., a personal computer software company.

The victors in the battle over environment software may not be obvious for a year or more. Despite an impressive array of endorsements, Microsoft will not begin shipping Windows until April. At that time, VisiCorp and Digital Research will have had their products on the market for only a few months. "There will be a lot of bandstanding and claiming victory," says Digital research's Row- ley. "But you won't really know what will happen for at least 6 to 12 months."

GRAPHIC: Picture, MICROSOFT'S BALLMER AND A DISPLAY DIVIDED INTO "WINDOWS"

LANGUAGE: ENGLISH

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TAB 3

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Ex. 3

94-1564 SS
FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

'MICROSOFT IS LIKE AN ELEPHANT ROLLING AROUND, SQUASHING ANTS'

As the company's dominance grows, so have the complaints of other suppliers of software

There's no doubt about it. Microsoft Corp. wants to dominate the world—the personal computer software world, that is. And it isn't very far from doing so: It already supplies the core software for just about all of the world's 25 million-plus IBM PCs and their clones. It has done well, too, in many sectors of the huge market for PC applications programs—spreadsheets, word processors, and the like. All in all, it's the leader in total PC software sales—Wall Street expects revenues of $1.1 billion for the year ending next June, up 40% from the year before.

Now, Microsoft is beginning to suffer the slings and arrows that often come with such fortune. Other suppliers of PC software are downright angry over its dominance. The company, they say, is just too powerful and its products too pervasive. Its virtual monopoly in PC operating systems—the software life-support systems that all other programs call upon for access to the PC's memory, disk drives, and display screen—means that Microsoft's every technical change, strategy shift, or mistake can adversely affect producers of applications software. They argue, moreover, that Microsoft is abusing its systems software edge to put them at a disadvantage—and win greater control of the market.

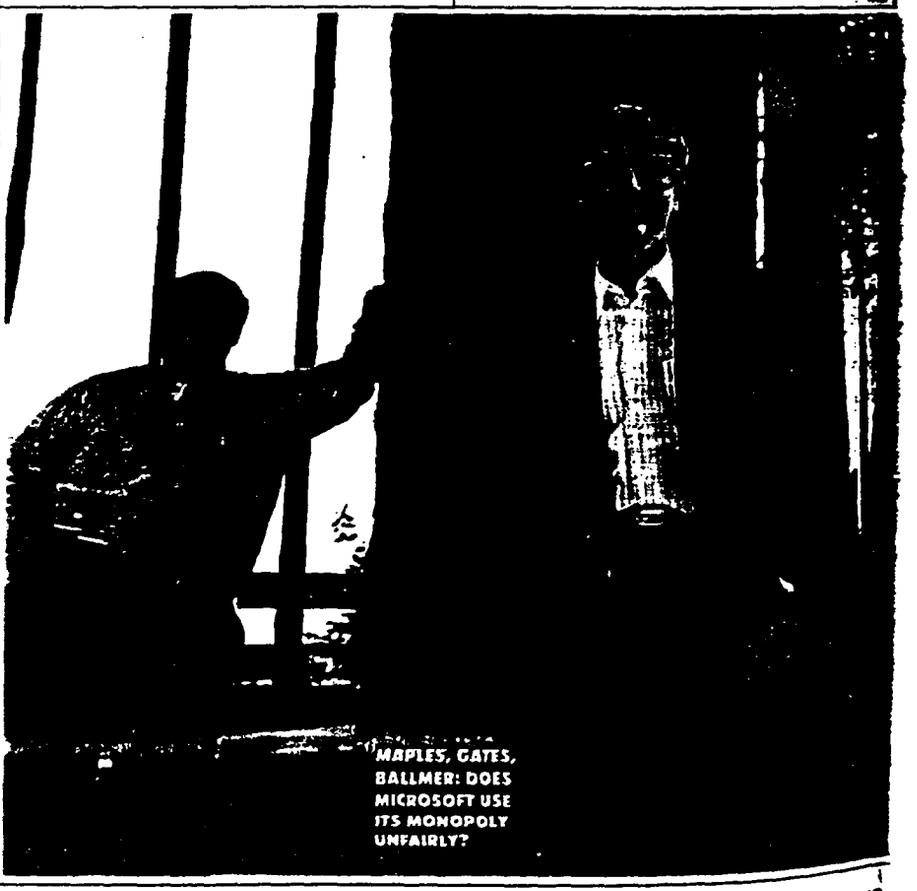
INTIMATE TIES. This, critics say, will make it harder for Microsoft's small competitors to prosper. And that hints at less innovation in software, the one part of the world computer market in which U. S. companies still hold an unassailable edge. Says Fred M. Gibbons, president of $100 million-plus Software Publishing Corp.: "Microsoft is like an elephant rolling around, squashing ants."

William H. Gates III, Microsoft's CEO, argues that such fears are misplaced. He contends that his company is so influential simply because it knows more than any other about how the pieces of a PC fit together, from chips to other components to software. Microsoft's intimacies with leading companies such as IBM, Compaq, and Intel bode well for the U. S. computer industry, he argues. By virtue of those relationships, Microsoft can establish coherent technical standards—in graphics, communications, or computer languages, for instance—that if followed by everyone would speed up the process of writing new programs. Those would help sell machines, fulfilling Gates's vision of a PC on every desk and in every home.

What worries other software makers is where they fit into this vision. While tightening its grip on the $1.4 billion systems software market, where its MS-DOS and OS/2 operating systems are king, Microsoft has pushed harder than ever into the $4.4 billion market for applications packages. Its Microsoft Word text-processing program, Excel spreadsheet, and other such products now account for 47% of total revenues—almost equal to its systems business. And competitors say they're getting squeezed.

Recently, for example, Microsoft stopped providing them with lists of customers that use Windows, its graphical extension to MS-DOS. Instead, it offered to place ads for their Windows-compatible software in a booklet shipped with each copy of Windows. Competitors suspected that Microsoft's own applications group was still getting the lists. So they complained—and got the lists back.

VOCAL CRITIC. More unsettling are suspicions that Microsoft doesn't keep its systems and applications groups as separate as it promises—that church and state tend to mingle. Competitors figure that if Microsoft's applications people get peeks at unannounced systems software, they should, too. Otherwise, they're at a disadvantage. Microsoft fuels suspicions by sometimes shifting workers between its groups. And at Agenda 90, a recent trade conference,



MAPLES, GATES, BALLMER: DOES MICROSOFT USE ITS MONOPOLY UNFAIRLY?

PHOTOGRAPH BY K. KUHN

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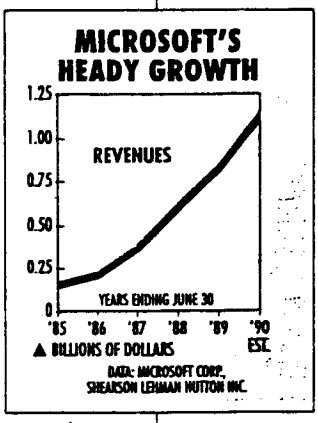
outsiders were angered to see an Excel specialist demonstrating new operating system features that they hadn't been briefed on. Apple Computer Inc. solved such conflicts in 1987 by spinning off its applications group into an independent company, called Claris Corp. Gates says that's not necessary at Microsoft.

Micrografx, a tiny graphics software company, might disagree. Recently, it approached Microsoft with a program it thought the larger company might want to use. But it showed it only to Microsoft's applications developers—not to its systems people, who it feared would copy its proprietary ideas. Micrografx President J. Paul Grayson says that one person who saw his program was soon transferred to Microsoft's systems division. Eventually, Gates placated Grayson with a cross-licensing deal, which Microsoft concedes was unusually generous. Still, Grayson says he was "manipulated by Microsoft," which insists it did nothing wrong.

PAINFUL P.S. Whatever the case, Microsoft's tactics have strained relations even with partners. This fall, John Warnock, chief executive of Adobe Systems Inc., had an emotional, public falling out with Gates. Adobe's top product, called Postscript, is a key program for desktop publishing. Earlier this year, Apple, Adobe's best customer, said it would replace Postscript in Apple computers. Microsoft continued to do business with Adobe. Then, in September, Apple and Microsoft surprised Warnock by announcing at an industry conference that they would collaborate in competing with Adobe. Says Warnock: "We used to be a strong ally of Microsoft." Now, "it's easier to help their competitors."



The biggest gripes have been with Microsoft's moves in operating systems. Like Microsoft, its competitors use those basic programs as "platforms" upon which to construct applications software. But if the platform is shaky, late to market, or just not selling well, writing software for it can be risky—as the tale of Windows shows.

Starting in early 1983, Microsoft tried to supplement MS-DOS with Windows, a program that makes PCs act much like Apple's Macintosh. But outside developers were wary of writing programs for Windows, which was 16 months late to market, because of its many early technical problems. They say Microsoft also gave them mixed signals: It positioned Windows as a program mainly for low-end PCs, while it worked on a more advanced—but incompatible—operating system called OS/2 for more powerful computers. And IBM threw its weight behind OS/2.

Much to the industry's surprise, however, OS/2 has caught on slowly. And Windows has taken off. Microsoft has shipped 2 million copies of it, compared with only 150,000 of OS/2. And next year, it will bring out a major revision of Windows that will be easier to program and more functional than the original—enough so, in fact, to do many of the same jobs that OS/2 was supposed to handle. Windows, says David G. Bayer, an analyst at Montgomery Securities, "has become the platform of choice."

DUPLICITOUS? Guess which company is poised to exploit that platform? While most competitors concentrated on writing for OS/2, Microsoft has been readying a slew of applications for Windows as well. They include a fancy new word processor, a project management program, and a long-rumored data-base program called Omega. That's leading companies such as Lotus Development and Software Publishing to call Microsoft duplicitous. They charge that Microsoft enhanced Windows just to help its own applications group. And, they claim, the more powerful Windows will further hurt OS/2. "It's irresponsible of Microsoft to do that," says Software Publishing's Gibbons.

Even discounting the effect of a revived Windows, Microsoft has disappointed those counting on OS/2. Introduced in 1987, that program still can't do all it promised, such as use all the power of Intel Corp.'s popular 80386 chip. Worse, perhaps, is that Microsoft still offers no aids for modifying Windows programs to work with OS/2. A recent poll shows that software executives don't expect OS/2 to really catch on until 1993—two years later than what they predicted last year. Gates's answer: Microsoft is devoting the maximum feasible engineering talent to OS/2 and Windows, favoring neither.

'SLIDEWARE.' On top of all this are wilder accusations—for instance, that Microsoft peddles nonexistent products to scare off competition. Michael J. Maples, the company's vice-president of applications software, shows slides at trade shows that list the software markets Microsoft intends to enter—programs for desktop presentations, for instance. One competitor calls that "slideware. They have slides saying they're going to be involved in every conceivable area of innovation five years from now," he says. "It slows the pace of innovation" by intimidating smaller competitors.

Gates laughs off the idea of software companies quaking in their boots. "So what are they doing instead, starting fast-food restaurants?" he quips. "I've never heard anyone say, 'we're chicken, we can't compete with you.'" WordPerfect Corp., for example, is beating Microsoft in word processing, with a 40% share of the market, up from 16% three years ago. And companies such as Micrografx and Atlanta-based Samna Corp. have drawn technical praise for their applications programs for Windows.

In fact, many of Microsoft's critics helped create their own problems when they ignored its pleas to develop applications for Windows. "Even when Gates makes a mistake, people turn it into a Machiavellian plot," says Gordon E. Eubanks Jr., president of software house Symantec Corp. And Steven A. Ballmer, senior vice-president for Microsoft's systems division, disputes the charge that his people give their counterparts in applications previews of their upcoming systems products.

Since Microsoft earns more from systems than from applications programs, Ballmer says, he would be foolish to jeopardize his market just to boost applications sales. Indeed, he recounts an occasion when Microsoft's developers of Excel accosted him in the company cafeteria for revealing their work to Lotus, which confers often with Microsoft on

CHART BY JOHN DECKERT/BW

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changes in its operating systems. "Telling me is as good as telling Lotus," he says, as if to prove his independence.

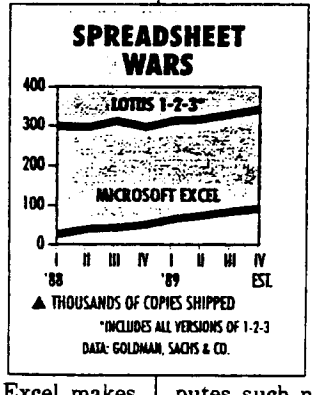
So, the tension mounts. But what can Microsoft's rivals do? Their dependence on its PC operating systems puts them at a disadvantage. But no company—not even IBM—has been able to avoid that. They might try to subvert Microsoft's efforts to win control over every critical software standard in the PC market. "If people are feeling mishandled, they're going to look for other [partners]," warns Lotus CEO Jim P. Manzi. A likely one would be the group of suppliers backing American Telephone & Telegraph Co.'s Unix operating system, which rivals OS/2 in scope and function.

But Unix' base of existing customers is minuscule compared with MS-DOS's. And Microsoft already has the best-selling version of Unix for personal computers, called Xenix. Perhaps, for competitors, there's just one choice: Learn to dance with the elephant.

By Richard Brandt in San Francisco

WHAT NOT DOING WINDOWS COSTS LOTUS

It's enough to drive Lotus Development Corp. to whining. Lotus spent three frustrating years and millions of dollars to bring out two versions of its 1-2-3 spreadsheet program that can work with Microsoft Corp.'s OS/2 Presentation Manager, the basic software, or operating system, that was supposed to turn every PC into a Macintosh. But OS/2 isn't selling well. And Microsoft, unexpectedly, is selling loads of an alternative called Windows, an earlier program that has lots of Presentation Manager's easy-to-use graphics.



Microsoft wins no matter which program takes off. Its own spreadsheet, called Excel, works with both. But Lotus isn't so lucky. Its advanced new 1-2-3, called Release 3.0, won't work with Windows. As Excel makes inroads, "Lotus has found that there's this large installed base of Windows users that it decided to ignore," says analyst David Readerman at Shearson Lehman Hutton Inc.

LATEST WOE. That has led to some public griping. For software companies, "choosing an operating system" to write programs for "should not be equivalent to betting on a horse race," Lotus CEO Jim P. Manzi told some of his peers in a recent speech. "Windows is like a horse that was about to be put to pasture but was then revitalized."

Indeed, corporate buyers such as Eastman Kodak Co. and BankAmerica Corp., which want to upgrade programs like 1-2-3 and use Windows as well, are confused. Less powerful versions of 1-2-3 work with Windows, but they can't take advantage of many of its graphical features. Lotus probably will solve that problem: "We're not native," says Frank A. Ingari, vice-president of its PC spreadsheet division. But analysts say the revised program could take a year to produce.

The Windows flap is just the latest woe for seven-year-old Lotus. True, customers are buying more of 1-2-3 than competing products, giving Lotus 65% of the $600 million world market for PC spreadsheets. But so far, Release 3.0 may not be doing as well as its other new version, called Release 2.2, which runs on less powerful PCs. Some customers even are sticking with Release 2.01, now more than three years old. At Softsel Inc., a software distributor, Release 2.2 is outselling 3.0 by 3 to 2. Corporate Software Inc. says its ratio is more than 2 to 1. Lotus disputes such numbers, claiming that 2.2 and 3.0 are selling about the same.

The split means a lot to Lotus, which gets two-thirds of its profits from spreadsheets. Next year, it will lift 3.0's list price to $595, some $100 higher than other versions. That might add $20 million or more to Lotus' overall revenues in 1990. But it might not: "The question is, does Lotus see a falloff after this initial upgrade bubble?" says Richard G. Sherlund, an analyst at Goldman Sachs & Co.

Profits dipped while Lotus struggled to get 3.0 out the door. But it now expects to finish this year with strong earnings. Its spreadsheet sales have returned to historical levels of about 110,000 units a month. And sales of 2.2 and 3.0 will boost revenues by $30 million this year. Now, all Lotus needs is one more product—so it can bet on two Microsoft horses at once.

By Keith H. Hammonds in Boston

JOHN DECKERT/BW

COMPUTERS

A HEAVYWEIGHT LIGHTWEIGHT

Compaq's new laptop may win big

Rod Canion keeps his word—eventually. For years, the president of Compaq Computer Corp. promised that his company would build a laptop computer as soon as it could do so without compromises such as eliminating floppy disks. Lately, with Zenith Data Systems Corp. and Japanese rivals selling laptops with all the customary PC features, Canion's pledge began sounding hollow. Even Compaq's first battery-powered PC, although a runaway success, had drawbacks: At a time when the Japanese were pushing down the size, weight, and price of laptops, the Compaq machine came in at a hulking 14 pounds—and with a $5,400 base price.

Now, Canion has kept his promise with a pair of laptops that weigh only 6 pounds, fit in a briefcase, and don't cost a lot more than competing PCs. These are the first "notebook" models (8½ by 11 by 1⅞ inches) to incorporate a full-size floppy disk. An optional hard disk, storing 20 million or 40 million characters of data, boosts the weight to only 6.7 pounds. Starting at $2,400, the basic LTE is aimed at NEC Corp.'s Ultralite and Zenith's Minisport, the leading notebook PCs. The competing models don't have a standard floppy disk drive and can't accommodate a built-in hard disk. A second Compaq LTE model, based on the faster Intel 80286 microprocessor, starts at $3,899. "These are breakthrough systems," says Peter J. Tiege, an analyst at market researcher InfoCorp.

INSTANT HIT. Some breakthroughs came from Japan's Citizen Watch Co., which will build LTEs for the European market. Citizen also worked on manufacturing problems. "We benefited from their miniaturization experience," says Canion.

On Wall Street, the laptops were an instant hit. Rumors of their debut sent Compaq's stock to a record 107 on Oct. 10. The Oct. 16 announcement pushed the stock back to 103¾ on Oct. 17, up from 98 after the market dove on Friday the 13th. Predicting that Compaq can sell 190,000 LTEs by the end of next year, Prudential-Bache Securities Inc. analyst Kimball H. Brown has boosted 1990 earnings estimates by 20¢, to $9.80 per share. That should make Compaq's lightweight laptops worth the wait.

By Geoff Lewis in New York

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TAB 4

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Ex. 4

94-1564

Special Report

IS MICROSOFT TOO

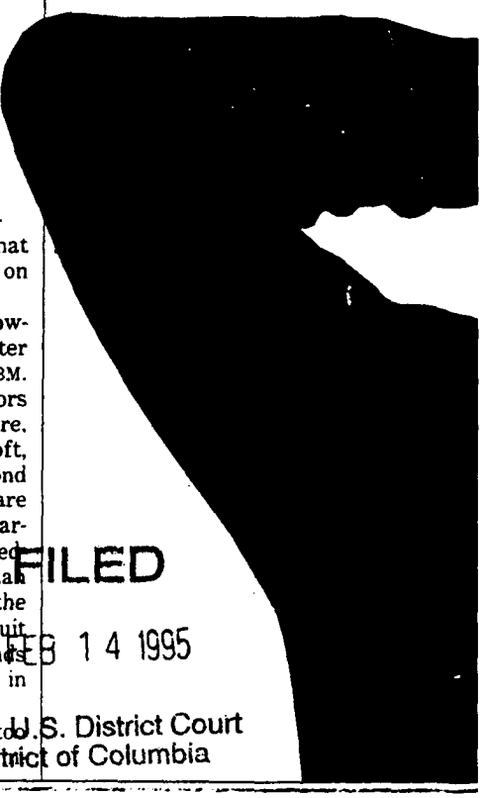
It's a chilly November night in Las Vegas, but 10,000 technoids are in full fever pitch. They're in town for 1992's Fall Comdex, the computer world's biggest convention cum celebration. Tonight is the annual Chili Cook Off, a charity event for the National Center for Missing & Exploited Children. Each year, the crowd pours in for kegs of beer, vats of chili, and live music. For one night, archrivals in the industry are expected to put aside their bitter feuds and just goof off.

But not this year. The Grayson brothers, Paul and George, founders of software house Micrografx Inc. and organizers of the event, are thanking companies that ponied up money. Each gets a round of applause. That is, until one of the hosts offers "a special thanks to Bill Gates and Microsoft," donors of $30,000. The crowd's reaction: scattered cheers, drowned out by a round of boos.

BIG GREEN. The fear and loathing on display in Las Vegas—as well as envy and a grudging respect—are the natural responses to Microsoft Corp. these days. Long a power in personal computer software, Microsoft has now emerged as clearly the most important single force in the entire computer industry. Where Microsoft leads, computer makers and customers follow. Where it stakes a claim, rivals steer clear. And as it springboards from its dominance in operating systems into a commanding position in applications programs, Microsoft leaves less and less territory for its software rivals. Many venture capitalists these days say they won't consider funding a software startup that looks like it might wind up competing on Microsoft's expanding turf.

Such a concentration of clout and power has not been seen in the computer industry since the glory days of IBM. Even Intel Corp., whose microprocessors are as pervasive as Microsoft's software, does not have the leverage of Microsoft, in part because Intel now must respond to chip clones (page 86). Some software executives refer to Microsoft, headquartered amid the evergreen trees of Redmond, Wash., as "Big Green." Says Alan K. McAdams, the chief economist in the Justice Dept.'s fruitless antitrust suit against IBM in the 1970s: "It sure sounds familiar. Microsoft is using its power in ways that are just like IBM's."

But does that mean Microsoft is too powerful? Does its dominance really



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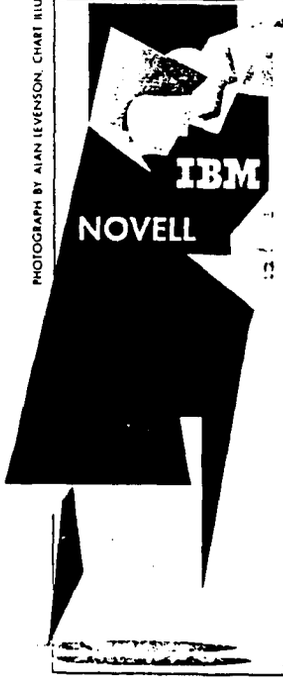
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

PHOTOGRAPH BY ALAN LEVENSON, CHART ILLUSTRATIONS BY RAY VELA/BW



WHY ALL THE FUSS? THE POINTS OF CONTENTI

EARLY PRODUCT ANNOUNCEMENTS

CHARGE To preempt competing products, rivals say, Microsoft sometimes announces products years before they actually exist. Even if a rival's product already has the features that Microsoft promises, many customers are reluctant to buy it, preferring instead to wait for the "safe choice"—Microsoft

RESPONSE Microsoft says it is important to let outside software developers know Microsoft's directions in system software so they can develop application programs. In fact, software developers demand it. And, Microsoft says, it is important to let customers know where it's headed so they can plan accordingly

INSIDE KNOWLEDGE

CHARGE Makers of applications programs allege that Microsoft's applications programmers have advance details of its operating system software, and the company is slow to share vital information. They say Microsoft uses this edge to bring out better applications sooner. This, rivals complain, is a big reason Microsoft has more than 60% of the market for programs that work with Windows

RESPONSE Microsoft says it freely shares its knowledge with the industry and enjoys no substantial advantage in developing applications that work with its operating systems. The company says its software sells well because it's good

THE DOS TAX

CHARGE Rivals say that the way Microsoft licenses MS-DOS and Windows to major PC manufacturers makes it nearly impossible for them to compete. Under some Microsoft licensing contracts, PC makers pay a fee to Microsoft for every PC they ship, even if they don't install Microsoft software on each machine. Because of this, PC makers are unlikely to substitute a competing operating system

RESPONSE Microsoft says PC makers can, and do, choose several different ways to license MS-DOS. The controversial "per processor" licensing arrangement offers a lower price for higher volume

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POWERFUL? HOW THE INDUSTRY'S LEADER IS WIELDING ITS CLOUT

hibit competition in the software market, and does it hamper advancement of the computer industry itself? And, perhaps most worrisome, will it ultimately lead to fewer competitors and less innovation in an industry founded on the latest, the greatest, and never-before-thought-of? Those questions are critical because computer software has become one of the driving forces in the economy. Not only is the software industry a key area for job creation, but it also produces the tools other industries need to boost productivity. Is such a vital industry best served by having a single dominant company?

FTC PROBE. Microsoft's competitors answer no. Software rivals insist that Microsoft's hyperaggressiveness—its use of every trick at its disposal to gain an edge, enter a new segment, or eke out one more iota of market share—has started to edge out innovation itself as the force that determines the shape of the industry. Microsoft Chairman William H. Gates III says such charges are ridiculous. "Our success is based on only one thing: good products. It's not very

BETWEEN MICROSOFT AND COMPETITORS

PRICING

CHARGE Microsoft can offer low-ball prices in two ways: by including extra programs with its operating systems and by using profits from operating system sales to support low pricing of applications programs. For instance, because it has not made much headway so far against Novell in sales of networking software, Microsoft is now building networking into Windows and MS-DOS

RESPONSE Microsoft says it is an industrywide trend that, as operating system software is improved, more features, such as networking, communications and graphics, are included to make computing more seamless for customers

THE F.U.D. FACTOR

CHARGE As the dominant force in PC software, Microsoft uses its unique position to spread "fear, uncertainty, and doubt" about its rivals to stop customers from buying rival products. Microsoft, competitors say, warns buyers that if they buy IBM's OS/2 or Novell's DR-DOS—both of which claim advantages over Microsoft's operating systems—they will be throwing away their money because those products may wind up incompatible with Windows or may not be around in a few years

RESPONSE Microsoft says customers ask for advice on many products, and, when it comments it is just responding to questions

BRAIN-PICKING

CHARGE Several companies charge that Microsoft has, in effect, stolen their ideas in the course of exploring collaborative agreements. Go Corp., for example, says that Microsoft expressed interest in writing applications for Go's operating system for pen-based computers. After Microsoft programmers examined Go's technology, however, Microsoft said it was no longer interested, Go says. Then, Microsoft announced plans for a competing system, developed, in part, by those who visited Go

RESPONSE Microsoft says it is upsetting that companies accuse it or imply it stole from them. Microsoft says it always honors nondisclosure pacts

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complicated," he says. "We're not powerful enough to cause products that are not excellent to sell well." Still, complaints from other software makers helped spur a 2½-year investigation by the Federal Trade Commission into Microsoft's tactics. FTC sources say the nonpublic probe was completed at the close of 1992 and focused on allegedly unfair tactics used to squelch competition (table). According to a confidential outline obtained by BUSINESS WEEK, the FTC investigated practices ranging from the way Microsoft prices software to the way it allegedly uses tying arrangements to force customers who want one Microsoft product to also buy others. Sources close to the investigation say that FTC staffers recommended a number of actions, including a preliminary court injunction, ordering Microsoft to cease the offending practices immediately, pending the outcome of the case.

NECESSARY EVIL? That they would even contemplate such an injunction—rather than wait for the outcome of a commission proceeding—is an indication of how serious the situation appears to the FTC staff, says Terry Calvani, a former FTC commissioner. "The reason the staff went into this uncharted area was the concern that there are companies in business today that may no longer be" by the time the FTC could finish trying a case against Microsoft, he says. But an injunction was only one staff recommendation among many and, so far, the FTC commissioners have not acted. On Feb. 5, they considered the recommendations and split 2-2 on what action, if any, to take. They are expected to meet again in a few weeks, but Calvani says the tie does not bode well for competitors who were hoping to see dramatic action.

Even if the FTC does nothing, the dominance of Microsoft will remain a maelstrom of controversy. Interviews with more than 60 industry executives and customers and a review of still secret FTC documents point to one overriding concern: Microsoft's methods and its growing control over the computer industry could choke the life out of any company that stands in its way. Steven P. Jobs, chairman of NeXT Computer Inc. and an outspoken critic of Microsoft, has publicly called for the breakup of Microsoft into two companies: one for operating systems and one for applications programs. That move—considered, then rejected by the FTC staff—would keep Microsoft from using its operating-systems business to give its applications business an extra edge, as now alleged.

For the most part, customers can't see what all the fuss is about: Most seem happy with what they're getting and with what they're paying for it. And even if computer makers grouse about how much influence Microsoft now exerts over their business plans, they concede that the standards Microsoft sets are helping to keep their industry vibrant. Says an executive with a top-tier PC maker: "Microsoft is not just a necessary evil at this point. It's necessary for the industry to proceed."

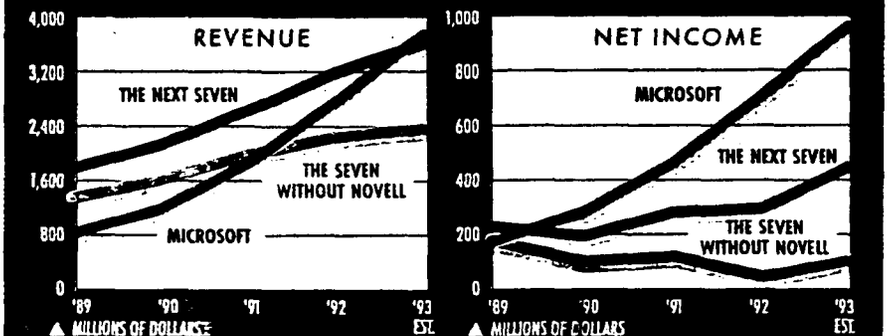
For many customers, Big Green has already taken on the role that had been Big Blue's. The saying among computer managers used to be: "Nobody ever got fired for buying IBM." Now, says the information-technology manager of a major French manufacturer: "If you put all your marbles in the Microsoft hat, you're safe—like the old IBM."

Even Gates, who pooh-poohs comparisons with the mighty IBM of the 1970s, agrees that his company has partially taken on the leadership role Big Blue has lost. "Who's there to fill that vacuum? Microsoft, more than anyone else," he says. Adds Roger McNamee, a partner in technology investors Integral Capital Partners: "Microsoft has been anointed the industry tsar. When that happens, people make it very, very rich."

WINDOWS AND ORPHANS. Rich indeed. Microsoft's MS-DOS operating system is used by 81% of the 22 million IBM-compatible PCs built every year, according to Sanford C. Bernstein & Co. Microsoft Windows, which gives MS-DOS a graphical "look and feel," is selling at the rate of 1 million copies a month. And because it has been first to market with top-notch applications packages for Windows, Microsoft is now the king of that white-hot growth segment. Lotus Development Corp., the king of spreadsheets in the MS-DOS world, has just 20% of the $756 million Windows spreadsheet market, while Microsoft's Excel now claims 73%, says market researcher Dataquest Inc. In word processing, the MS-DOS leader, Wordperfect, has 31% of the Win-

MICROSOFT AND THE SEVEN DWARFS

Microsoft's seven largest publicly traded competitors are: Novell, Lotus, Borland (with Ashton-Tate), Aldus, Adobe, Symantec, Software Publishing



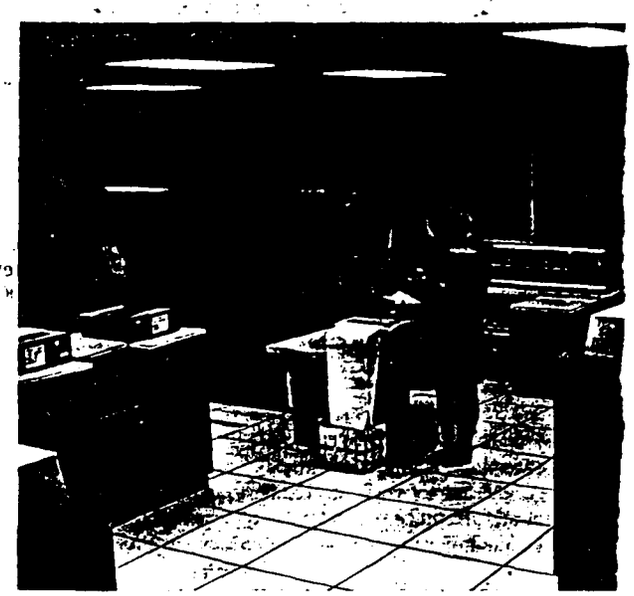
DATA: COMPANY REPORTS, DEAN WITTER REYNOLDS INC. ESTIMATES

CHART BY LISA KNOUSE BRAHAM/BW

BIG BLUE MEETS BIG GREEN

As IBM ruled the 1970s with its mainframe hardware, Microsoft dominates today with its operating system software

Microsoft used IBM's own tactic against it: By "preannouncing" Windows NT, it stalled sales of Big Blue's OS/2, Version 2



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ly, he adds: "I hope they don't kill us."

Novell can afford to joke. For now, it still holds 70% of its market. But the rest of the industry isn't laughing. Rival software companies give Microsoft credit for building good products and marketing them cleverly. But many software executives also are fuming about what they say are Microsoft's unnecessarily tough, sometimes downright mean-spirited tactics. Says the CEO of a rival software company: "If you were in my shoes, you would probably want to go and shoot them. It's not a level playing field. IBM was the most opportunistic and ruthless in the 1970s. And that's exactly what Microsoft is today."

VAPOR TIGERS. Indeed, industry veterans say there's a striking parallel between how Big Blue behaved back then and how Microsoft acts now. Computer executives say that just like the IBM of yore, Big Green bullies partners, withholds vital information, disparages competitors, and stalls the market by announcing products long before they're ready. Microsoft denies such charges. While such tactics are in the playbooks of many competitors, in the hands of the richest and most powerful player, they can be lethal.

Take IBM's classic move of announcing a product long before it was ready to ship—a tactic known as "preannouncing." In software, such products are called "vaporware" and no one pays much attention—unless the company promoting vapor holds a dominant position. In that case, the market freezes. Facing upstart Control Data Corp. in the 1960s, IBM paralyzed the market for scientific mainframes by announcing it was working on machines that would be far faster than CDC's. These paper tigers, as they came to be known in a subsequent antitrust trial, prevented CDC from winning a single order in 18 months.

Microsoft preannouncements now have a similar effect. Take the case of Adobe Systems Inc., maker of software that controls how computer printers produce typefaces. In September, 1989, Microsoft and Apple Computer Inc. said they would jointly develop a rival product. Adobe's stock fell 20% in one day, and for the next nine months the company spent 90% of its time answering customer's questions and "fighting vaporware," says Chairman John E. Warnock. As it turned out, Apple backed off and Microsoft did not ship its competing product, TrueImage, for two years.

Microsoft has turned this Big Blue weapon on IBM itself. Just as IBM was getting OS/2 Version 2.0 off the ground in mid-1991, Microsoft announced plans for Windows NT. Like the IBM product, NT would be a 32-bit operating system, meaning that it would tap all the powers of Intel's fastest chips. Customers could buy the 32-bit system from IBM then or wait at least 18 months for NT.

POWER PITCH. Guess what? Most of the market is waiting for the leader. An executive at a top PC company tells of one customer that felt the squeeze after committing to buy 36,000 copies of OS/2. The way the exec tells it, Microsoft came and pitched NT, and the buyer put the OS/2 order on hold. "It used to be IBM could put orders on hold," says the executive. "Now it happens with Microsoft."

And NT? It's the toast of the tech world even though it's still not ready. After a six-month delay, it's now scheduled for shipment by June—two years after it was announced. It could be a big

FOR INTEL, ONE GOOD FRIEND ISN'T ENOUGH

Microsoft isn't the only standard-bearer in the computer business. Software alone does not a computer make, and when it comes to standard PC hardware, the world looks to Intel Corp. Its microprocessors are at the heart of most IBM-compatible personal computers.

But Intel's power isn't rock-solid. For starters, unlike Microsoft, it has lost share in its core business. Clonemakers Advanced Micro Devices Inc. and Cyrix Corp. have already snagged 62% of the market for Intel's aging 386 chips and are getting ready to sell clones of the 486 as well. Their presence has forced Intel to adjust its marketing plans in the past two years, accelerating the shift from 386 to 486 chips.

'SIMPLICITY.' Intel could be in for more adjustments as Microsoft, its partner since the dawn of the IBM PC in 1981, spreads out. Windows NT, scheduled to appear this June, will be the first Microsoft operating system to run on chips other than those that are Intel-compatible. For starters, NT will also run on the Alpha AXP chip from Digital Equipment Corp. and the R4000 line from MIPS Computer Systems Inc., now owned by Silicon Graphics Inc. These are RISC (for reduced instruction-set computing) chips, the type of speedy design that since 1985 has been challenging Intel's dominance.

Microsoft says the RISC deals are to satisfy customer requests and don't indicate a change in the relationship with Intel. "Our cooperation with Intel is far more advanced than it is elsewhere,"

Microsoft's Gates and Intel's Grove: Intel needs Microsoft, but the reverse is becoming less and less true

AP/WIDE WORLD

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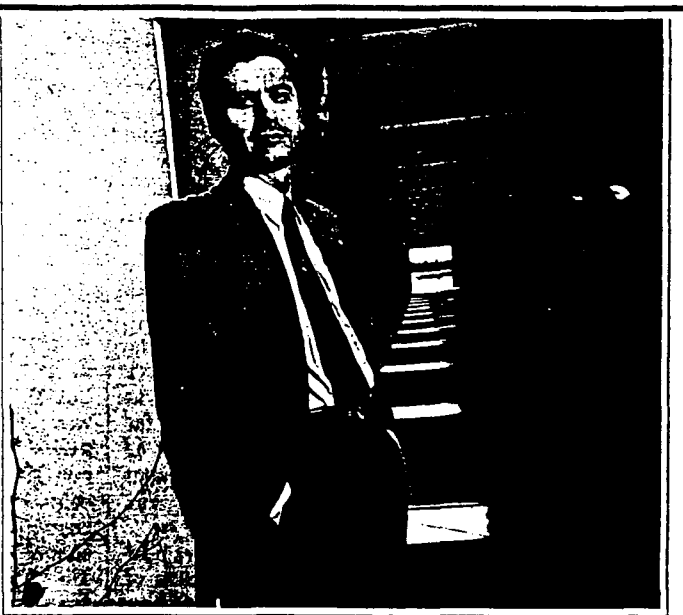
dows market, compared with 53% for Microsoft Word.

In short, Microsoft is cleaning up big time—at the expense of its smaller rivals. While other software makers were announcing shrinking market share, losses, or layoffs in 1992, Microsoft tacked on $975 million in calendar-year revenues—more than 90% of all the revenue growth in the PC software industry, according to preliminary Dataquest figures. Microsoft's share of the world desktop PC software industry reached 44% last year, Dataquest figures. And if, as analysts project, Microsoft sales rise 36%, to $3.75 billion, in the fiscal year ending June 30, Microsoft will have more revenues than its seven closest publicly held rivals combined. And at nearly $1 billion, it will have more than twice their net income (chart).

All that money, rivals fear, will soon translate into even greater power for Microsoft. Without healthy profits, other software makers may find it impossible to fund new development or finance upgrades of complex programs such as data bases, which comprise millions of lines of code. Borland International Inc. Chairman Philippe Kahn blamed pressure from Microsoft's foray into Borland's data-base turf when he laid off 15% of his 2,200 workers in December. Borland then reported a $61.3 million loss for the quarter and put on the back burner a word processing project that had been two years in development. Gates says Borland suffered mainly because its products were late to market.

Lotus, once No. 1 in PC applications programs, had its first-ever layoffs in 1992. Now, it's concentrating its resources where Microsoft isn't—yet: Programs such as Notes, which helps groups of workers collaborate.



'Microsoft is extremely aggressive in using everything they can to their advantage'

PIERLUIGI ZAPPACOSTA
Logitech

'TOTAL UNDERDOG.' Such a sharp contrast between one have and many have-nots worries industry executives. They fear there will be few major players, more consolidation, and less money for everybody except Microsoft. They also warn of a chill on software startups. John M. Grillos, who manages technology investing for Robertson Stephens' venture-capital arm, says that there are still new opportunities for startups and scores are on the drawing boards—in promising new areas such as multimedia. But he has a long list of phone numbers at Microsoft and checks the behemoth's plans before going ahead with an investment. Does he call very often? "You bet," he says. "I'm not crazy."

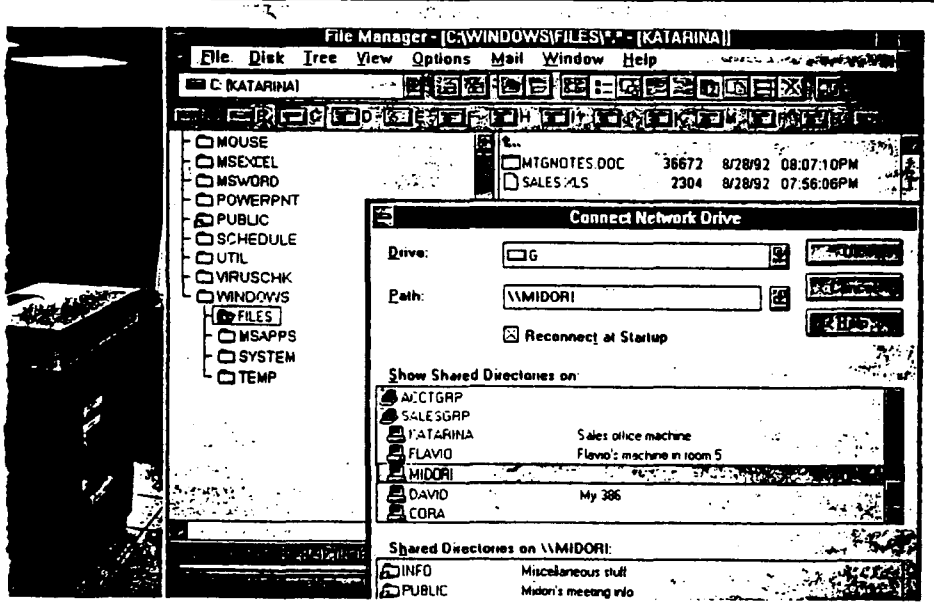
Gates, the billionaire mastermind of the Microsoft empire, says such worries are nonsense. Is Microsoft too powerful? "The answer is simply no," he says. He points out that Microsoft still lags in some important markets. "Take networking. We're the total underdog." And, he asserts, in markets such as spreadsheets and word processing, Microsoft's presence has prodded the competition to improve their wares.

Gates also points out that his commanding position does not guarantee him success in the next generation of software: operating systems that will let networks of personal computers take on the big computing jobs now done by mainframes, minicomputers, and workstations. Microsoft's entry, Windows NT, will square off with Novell's UnixWare, Sun Microsystems' Solaris, IBM's OS/2, and NeXT's NextStep.

Still, none of those competitors has the momentum that Microsoft gets from Windows. That should help Gates reach his stated goal of selling 1 million copies of NT the first year. But he insists that doesn't mean NT is already the winner. "This is a hypercompetitive market," Gates says. "Scale is not all positive in this business. Cleverness is the positive in this business."

To be sure, competitors such as Lotus and Borland have contributed to the myth of Microsoft's invincibility through their own less than clever moves. Equally true, there are examples of software companies that have kept well ahead of Microsoft. Many, such as Intuit Inc., a maker of personal finance software, are masters of lucrative niches (page 88).

The biggest player to successfully fend off Microsoft so far has been Novell Inc., the $933 million Provo (Utah) maker of networking software. But Microsoft is aiming for this key software market by building some features similar to Novell's NetWare into Windows NT. Says Kanwal S. Rekhi, a Novell executive vice-president: "Microsoft will keep us on our toes." Then, half-joking-



[TOP] PHOTOGRAPH BY ANDY FREEBERG

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hit. Even Borland is developing software for it. Says CEO Kahn: "There's no choice. The issue is not whether NT is good or bad. The issue is NT is being pushed by Microsoft."

And Microsoft is already talking about an operating system beyond NT. It's called Cairo, and it's due by 1995. The company says that package will match features of Novell's most advanced networking programs and the object-oriented programming features of NextStep and Pink, the operating system due by 1995 from Taligent, the joint venture between IBM and Apple.

F.U.D. MISSILES. Gates says Microsoft preannounces systems software because customers and outside developers need details to plan ahead. And once Microsoft tells developers, word spreads fast. "We tell 100 developers," Gates says. "And believe me, that is out in the press the next day."

Whatever the legitimate purpose, preannouncing is part of a larger strategy computer makers say IBM used effectively for years. It's called F. U. D.—for fear, uncertainty, and doubt—and it really works only for the big guy. It's essentially a whispering campaign suggesting it would be terribly unsafe to bet on a competitor. Gates snorts at the notion Microsoft uses F. U. D. as a weapon. "We have a whole department in charge of F. U. D.," he jokes. Seriously, he adds that Microsoft simply gives its opinions and expects customers to judge for themselves. "We're giving our honest view of how wise it is to buy these products," he says.

Where any discussion of Microsoft's power gets dead serious is when rivals—and the FTC—consider the power stemming from Microsoft's dominance in operating software. Like IBM, whose aggressive tactics for preserving its dominance in mainframes led to the Justice Dept.'s 1969 antitrust suit, Microsoft seems most bare-knuckled when perpetuating its position in operating sytems.

> 'Our success is based on only one thing: good products,' Gates says. 'We're not powerful enough to cause products that are not excellent to sell well'

Microsoft's most controversial tactic is a "per-processor" discount plan for MS-DOS, which it offers to the highest-volume PC makers. On average, PC makers pay $13 to $14 per copy. For the steepest discounts, the PC maker must agree to pay for a copy of MS-DOS for each PC it ships, whether or not the software is actually installed. That makes it "undesirable for a manufacturer to ship anything but MS-DOS," says a PC executive. Microsoft says that PC makers are offered a number of ways to buy MS-DOS. But with other plans the discounts are smaller, and PC makers locked in a bloody price war can ill afford to pass up the steepest discounts.

DOS & DON'TS. When pricing isn't inducement enough, Microsoft allegedly uses other means. One PC maker says it told Microsoft that it planned to ship DR-DOS, Novell's clone of MS-DOS, on about 10% of its machines. By shipping MS-DOS on 90% of its PCs, the company figured it would still get the best discount. Microsoft's response: It doubled that customer's price on MS-DOS, which quickly forced the PC maker to drop the idea of offering a choice to customers. Says a company executive: "In my opinion, any monopoly situation is not good for the customer." A senior Microsoft executive says he wasn't aware of this charge but says it would not be common practice.

Such alleged tactics may seem a tad over the top, but maintaining dominance in PC operating systems is critical. Like IBM's dominance in mainframes, it gives Microsoft an extremely reliable, enormously profitable revenue stream. "Microsoft's mainframe is its operating system," says one software executive.

Analysts estimate that between 1989 and 1992, MS-DOS and Windows generated revenues of $2.3 billion, with $998 million of that in 1992 alone. Net profits on those sales last year were $278 million, according to Sanford C. Bernstein & Co. Such profits have helped fund forays into almost every major software market. Microsoft's new data-base program, Access, cost a staggering $60 million to develop—and it was just one of a dozen products Microsoft brought to market last year. By contrast, last year's entire R&D budget at Borland was $50 million. At Lotus, it was $35 million.

That's not all. Microsoft also had the money to offer an introductory price of $99 for Access—less than one-third the retail price for similar packages. Result: Microsoft sold 700,000 copies in just three months. The entire market in 1992 was only 1.2 million units.

Gates shrugs off the notion that operating systems are his cash cow. "That's the biggest joke I ever heard," he snaps and points out that products such as

ys Carl Stork, the Microsoft manager works with hardware makers. For ance, Microsoft still designs its operting system fastest on Intel chips.

For his part, Chief Executive Officer ndrew S. Grove points out that Intel is ot completely dependent on Microsoft oftware, either. OS/2 and Unix are aleady available on Intel chips and NeXT omputer Inc.'s NextStep and Sun's Soris soon will be. And, says Ronald J. Vhittier, vice-president and general manager of Intel's software technology group, most customers aren't likely to switch to RISC hardware for NT because that would require buying all-new applications programs instead of keeping existing programs as owners of Intel-based NT systems will be able to do. "The thing Corporate America wants is simplicity," he says.

RISC FACTOR. Where Intel could be vulnerable, however, is in the market for network servers, a key objective for Windows NT. These machines, which feed centralized information to personal computers over a network, are replacing minicomputers and mainframes in corporations. And that means they're replacing large computer software, not desktop software. In that market, Intel has no advantage, and buyers can look for the best performance. That means RISC chips, which generally run about 50% faster than Pentium, Intel's most powerful chip yet, due out this March. "Would we look at other platforms in the future? Sure," says Edward F. Driscoll, an assistant vice-president at CIGNA Systems, which buys computers for the insurer. "The key is what happens at the server end."

If the RISC chips start to invade Intel's turf on servers running Windows NT, they could soon move toward desktops. And that could shake Intel's hold on the computer market. Microsoft, on the other hand, would still be selling software for all those machines.

By Richard Brandt in San Francisco

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Word and Excel are his most profitable. Yet in the next sentence, as he elaborates on the returns from operating systems, he says: "If you just took the cash cow business and did not factor in [the development costs of] NT and Cairo, yes, you'd get a huge profitability."

Gates is accurate when he points out that his applications business now generates more profits—about 50% of net income—than operating software. But it took years to reach that point—years during which Microsoft funded many versions of Word before it was good enough to grab substantial market share. Only when the Windows 3.0 version appeared, in 1990, did it take off.

The operating system business does more than spin profits. Competitors charge that because Microsoft writes operating systems, it also has an unfair edge in writing the applications programs that work with them. They say Microsoft's applications developers get a peek at the inner workings of new operating systems early so they can write programs to take advantage of new features first. In the FTC document, investigators referred to this as Microsoft's "fake Chinese Wall" and listed a dozen

'MICROSOFT IS GOOD, BUT IT'S NOT GOD'

Scott Cook was stunned by a phone call in late 1990. It was a senior Microsoft Corp. executive telling Cook, the co-founder and chief executive of tiny Intuit Inc., that the software goliath was about to enter Intuit's market—programs for check writing and household budgeting. Because the two companies had once talked about collaborating on a finance program for Windows, the executive said he felt obliged to let Cook know.

Small consolation. After their talks had broken off, Cook shelved plans for a Windows package, and he thought that Microsoft had abandoned its efforts. Now, Cook had little choice: He had to have a Windows version of Quicken in a hurry. In just 10 months, the Menlo Park (Calif.) company was done, just three weeks after Microsoft launched Money. "The advantage we were counting on was lost," says Bruce Jacobsen, general manager of the Microsoft unit that sells Money.

Then, the real battle began. Both products got good reviews, and both carried a list price of $70. Cook cut wholesale prices so dealers could undercut Microsoft's $45 retail price. He also began advertising on TV. All told, Intuit managed to hold on to its 60% market share. Jacobsen concedes that Microsoft was caught off guard.

The episode illustrates that Microsoft is not invincible. And although Microsoft loses only rarely, its performance with Money is not an isolated case. Says Robertson, Stephens & Co. analyst Peter J. Rogers: "Microsoft is good, but it's not God."

Some software makers have even taken back markets that Microsoft dominated. Until a year ago, Microsoft's Works program had close to 90% of the $50 million market for integrated software for Macintosh computers. Such packages combine basic word processing, spreadsheet, communications, and data-base functions. But Claris Corp., Apple's software subsidiary, figured it could build a better product. Its ClarisWorks arrived in late 1991 and within a year had 77% of the market, leaving Microsoft with 20%.

Sometimes, Microsoft's aggressiveness backfires. When it comes to creating multimedia CD-ROM disks, for instance, Microsoft often insists on buying rights to the content of the disks. That can scare off book publishers who worry about losing control in the new medium. Comptons NewMedia, a San Diego-based unit of Encyclopaedia Britannica Inc., on the other hand, helps publishers create and distribute new works for CD-ROM without buying content rights. Result: Comptons now distributes more than 40% of all retail CD-ROM titles in the U.S., while Microsoft only has five titles on the market. Says Link Resources Inc. analyst Steve Reynolds: "The Comptons approach will be more prevalent."

GERRY GROPP/SIPA

Cook pulled out the stops to market a Windows version of Quicken in time to spoil Microsoft's picnic

FOLLOWED HOME. If Microsoft has a consistent weakness, it may be in consumer products. Microsoft dominates the corporate market for PC software, which requires building relationships with computer managers and giving volume discounts. The home market, on the other hand, is based on catchy in-store promotions, direct marketing, and meticulous attention to making software easy to use.

That's where Intuit has excelled. A former Procter & Gamble Co. manager, Cook has built his company from about $6 million in 1988 to $84 million in 1992 by studying how ordinary people manage their finances. He has even had product developers follow customers from the store to their homes to see what difficulties they encounter when loading and using Quicken.

Of course, Microsoft isn't throwing in the towel. To finally win some market share from Intuit, Microsoft now has dealers selling Money for $15, compared to Quicken's typical retail price of $35. "Microsoft is relentless," says Cook. "It never gives up."

By Evan I. Schwartz in New York

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other ways Microsoft allegedly abuses its position. Microsoft denies any unfair crossover or inside knowledge.

Software developers also complain that Microsoft is slow or even reluctant to deliver needed information about operating systems. Perhaps the most ironic such charge comes from Claris Corp., Apple's software subsidiary. Executives there say they tried for a year to get information for writing Windows applications from Microsoft, to no avail. Claris says Microsoft was worried there were cracks in the Chinese Wall between Claris and Apple's operating system team—just what rivals say occurs at Microsoft. But after executive meetings and assurances of no cracks, the situation was resolved. Microsoft's head of developer relations says he wasn't aware of the Claris problem but does concede a general "concern about giving information to our operating system competitors."

'Microsoft is the IBM of the '90s and uses exactly the same marketing tactics IBM used to'

PHILIPPE KAHN
Borland International

ROBERT HOLMGREN

Microsoft says it's doing its best to get information out to thousands of companies and that it doesn't withhold information to favor itself. Says Pat Bellamah, a manager in Microsoft's developer group: "It's ironic to us that people feel they're having a hard time getting information when that's all we're putting out there." Gates estimates Microsoft spends $80 million a year disseminating information to developers.

One reason Microsoft draws so much criticism is simply that wherever it competes, it seems to play a particularly hard-core game of hardball. Take its dealings with Logitech Inc. Until last June, Logitech had a license to buy Microsoft Windows 3.0 at a discount, then sell it together with Logitech's mice. But Microsoft abruptly canceled the deal, saying that it was losing money on such "bundles" involving inexpensive hardware, according to Logitech President Pierluigi Zappacosta. Only Microsoft still continued to sell Windows bundled with its own mice—for about $10 more than Logitech had been charging.

After Zappacosta publicized his situation in September, Microsoft relented. But there was a catch: The new license fee would be 30% higher. Zappacosta says that priced him out of the market, depriving his company of about $20 million annually. Microsoft continues to sell its Windows-and-mouse bundle. Says Zappacosta: "Microsoft is extremely aggressive in using everything it can to its advantage." Microsoft denies that it forced Logitech out of the market but declines to discuss its pricing.

STAC ATTACK. Occasionally, Microsoft's hardball tactics have resulted in civil suits. The latest was filed in January by Stac Electronics, a maker of data-compression software. In its suit, Stac claims that Microsoft violated its patent by including Stac's technology in test versions of MS-DOS 6.0 without permission. Stac says it was negotiating with Microsoft to license the technology, but talks broke down when Microsoft did not offer a sufficient royalty. The suit claims that Microsoft executives then showed Stac a spreadsheet, detailing the "adverse impact on sales of Stacker" if Microsoft opted for another company's technology. Microsoft denies the claim, saying it bargained in good faith and offered "real money" for a license.

As the stories multiply, it also becomes clear that Microsoft long ago became everybody's favorite whipping boy. There's certainly resentment on the part of bright young software entrepreneurs who may never see millions, much less Gates's billions. And for all the companies that grouse about their dealings with the industry giant, there are dozens that are ardent admirers. Says Morton H. Rosenthal, CEO of software distributor Corporate Software: "We all live in a Microsoft-centric world. Working with Microsoft is like skiing behind the Queen Mary. It's a good ride. But getting up is a little rocky."

Indeed, with Big Blue's waning influence, there's a genuine need for a leader. Customers want good software and good prices. They also want a relationship with a software maker that's going to be around for the long run. They want a new IBM. "If I were a software company, I'd be complaining about Microsoft, too," says Greg Chetel, director of systems planning and research at Gillette Co. "But I don't care who wins. I just want quality products."

In the end, that may be the key to assessing whether Microsoft does indeed have too much power. Software makers are right to cry foul when they think Microsoft's practices have been anticompetitive. They have done so, and the FTC has listened. But as long as Microsoft's dominance stems from keeping customers like Gillette satisfied, it is hard to argue that its power, per se, is harmful.

The danger is that Microsoft will start to use the power of its position, rather than the appeal of its products and services, to stay on top. "If Microsoft runs out of bandwidth," says McNamee of Integral Partners, "then there will be a problem." That's when there will be reason to fear that competition will be stifled and innovation squelched.

If the history of Big Blue is a guide, Microsoft's dominance will be in danger of waning long before it can distort the market with nefarious practices. When the Justice Dept. began its antitrust suit in 1969, IBM's hold on the mainframe market made it seem invincible. By the time federal prosecutors withdrew their suit in 1982, however, the market had taken care of the problem: New technologies such as minicomputers and PCs had made IBM's near-monopoly in mainframes largely irrelevant.

History could repeat itself: Says Joe Guglielmi, a former IBM executive, now CEO of Taligent: "Today, everyone is in fear of Microsoft." "But in the end, everyone will compete. There are thousands of Bill Gateses out there who will find pieces of this market and win them." Just the way Microsoft won its place in the sun.

By Kathy Rebello in Redmond, Wash., with Evan I. Schwartz and John W. Verity in New York, Mark Lewyn in Washington, Jonathan Levine in Paris, and bureau reports

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TAB 5

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Ex. 5

94-1564

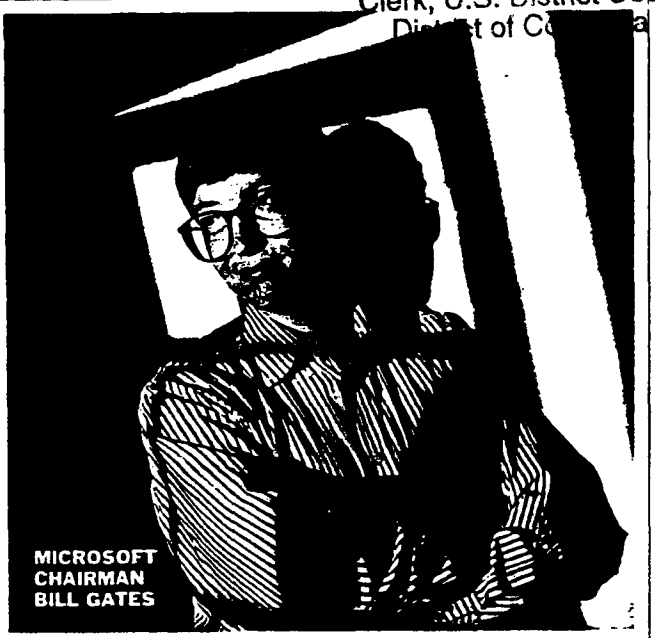
FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

NO SLACK FOR MICROSOFT'S RIVALS

They complain it hasn't been reined in at all by Justice

When Microsoft Corp. signed a consent decree in July with U.S. Justice Dept. trustbusters, it emerged virtually unscathed from the feds' five-year probe. Still, the investigation was a protracted—and expensive—headache for Chairman William H. Gates III. And the settlement banned some of Microsoft's most aggressive licensing practices. The experience, rival executives figured, surely would leave Microsoft chastened.

No such luck. "The consent decree seems to have set [Microsoft] free," gripes Robert J. Frankenberg, chief executive of Microsoft rival Novell Inc. "Now, they are running rampant over everything."



MICROSOFT CHAIRMAN BILL GATES

NO FAIR? Microsoft insists it hasn't strayed from the bounds of normal licensing practices

There is little doubt that Microsoft is competing aggressively: Even while the software giant presses its market-share advantages in operating systems and applications programs, it is bolting into new consumer markets with its own on-line service and a plan to buy Intuit Inc., the top maker of personal-finance software. The $1.5 billion deal requires approval of Justice, and rivals once again are regaling Justice staffers with tales of Microsoft's alleged anticompetitive behavior.

WINDOWS PAIN. What really stirs fresh fear and loathing in the computer business, however, is Windows 95. Microsoft plans to begin shipping the upgrade of Windows by mid-1995, and the industry already is complaining about the software giant's pricing and marketing plans for the software. Computer makers, for example, have been startled to learn that they will be asked to swallow a huge price hike for their use of Windows 95—to as much as $70 per PC, vs. roughly $35 today. At the same time, Microsoft has established more rigorous technical requirements for hardware and software makers who want to claim their products are compatible with Windows. "Prices are going up and terms are becoming more restrictive," says John B. Landry, senior vice-president at Lotus Development Corp.

There are ways PC makers can lower their costs—if they agree to shipment goals and marketing tactics designed to give Windows 95 an early boost. Indeed, a new "Market Development Agreement" that Microsoft has distributed to PC makers spells out a dozen ways to cut the Windows 95 license fee. For example, a company can save $3 per system by preloading Windows 95 on at least 50% of its personal computers in the first month Windows 95 is available. In a business with ever-shrinking margins, that's a deal many PC makers can't afford to pass up, ensuring Microsoft lots of promotional help.

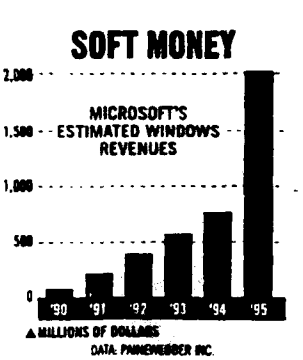
In Europe, where Windows' grip on the market isn't as firm as it is in the U.S., Microsoft's pricing has prompted a minirebellion. Vobis Microcomputer, the No. 1 PC maker in Germany, announced in late November that it plans to bundle IBM's OS/2 operating system, rather than Windows, with its machines starting Jan. 1. Says Theo Lieven, Vobis' CEO: "Every penny counts."

CONTINENTAL DRIFT. Lieven contends his rebellion already is working. He says sales have jumped since mid-November, when Vobis began offering OS/2 in addition to Windows, and "we think OS/2 helped" contribute to the increase. Other European computer makers, including Peacock Computer, have also quietly begun shipping OS/2 on their machines.

U.S. PC makers aren't likely to follow the Vobis lead—partly because the American market is less receptive to OS/2. But that doesn't mean they're all happy about the Windows 95 pricing. Hewlett-Packard Co. executives, for example, say they are concerned that the higher cost of Windows 95 may cause a pricing differential between Windows PCs and those equipped with OS/2. Still, says a spokesman, HP expects to bundle Windows 95—and not OS/2—into its machines. And other big U.S. PC makers also remain loyal. "We plan to move to Windows 95 as quickly as we can," says Lorie L. Strong, a vice-president at Compaq Computer Corp.

Still, with Microsoft on the offensive again, some rival software companies believe the Justice Dept. should use the Intuit inquiry to look once again at broad questions about Microsoft's dominance of the software market. Indeed, rivals say Justice has been asking them probing questions about Microsoft's potential dominance of new distribution channels such as on-line services. But others call another move from Justice wishful thinking. "We're just going to need to slug it out in the marketplace," says a resigned Frankenberg at Novell. The way things are going, that's just going to get tougher and tougher.

By Amy Cortese in New York, with Richard Brandt in San Francisco, Gail Edmundson in Paris, and bureau reports



PHOTOGRAPH BY RICH FRISHMAN; CHART BY RAY VELLA/DW

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TAB 6

TO

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BYTE May 1992 Volume 17, Numbe

Introducing Microsoft C/C++.

Windows Class Libraries	Microsoft C/C++ 7.0	Borland* BC++ 3.0
Covers entire Windows API	Y	N
Menu support	Y	N
GDI support	Y	N
OLE 1.0 support	Y	N
Exception handling	Y	N
Diagnostics support	Y	N

Code Generation: DES Encryption Test	C/C++ 7.0	BC++ 3.0
EXE size	5K	73K
Execution time	820 sec	1500 sec

BYTE Build Test	C/C++ 7.0	BC++ 3.0
Using fast compile, pre-compiled headers	300 sec	420 sec
Optimized EXE size	162.4K	202.6K

Compiler Features	C/C++ 7.0	BC++ 3.0
Code in pre-compiled headers	Y	N
Inline any C/C++ code	Y	N
Auto-inlining	Y	N
P-code	Y	N

Windows Tools	C/C++ 7.0	BC++ 3.0
Windows resource editing tools	Y	Y
Profiler for Windows & MS-DOS	Y	Y
Windows Help compiler	Y	Y
Windows setup builder	Y	N
Total documentation	5408 pp	4038 pp
Windows 3.1 debug kernel	Y	$199 extra
Total Price*	$495	$948+

By almost any measure, new Microsoft® C/C++ Version 7.0 development system for Windows™ is the best way to create all your applications for the Windows and MS-DOS® operating systems.

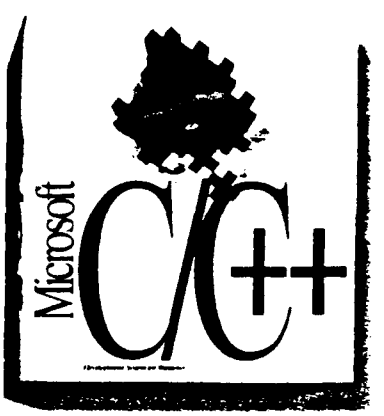
With better code generation and precompiled headers, you'll have all the tools you need to write better code, faster.

And because the Microsoft Foundation Classes have the most complete framework for Windows, you'll use the same building blocks for your products that we use for ours.

C/C++ 7.0 also includes the Windows 3.1 debugging kernel which can help you find the bugs. Plus, all the tools you'll ever need to edit your resources, compile the help files and even build your very own graphical setup programs for Windows.

Judge for yourself. Try new Microsoft C/C++ 7.0 and, as a Microsoft, Borland or Zortech customer, you'll be able to upgrade for just $139* – and for a limited time, you'll get a free copy of Qualitas' 386MAX™ in the box!

So call your local reseller now, or call Microsoft at (800) 541-1261, Department Z71. Get your tools from the people who make Windows, because we've been building Windows tools longer.



Upgrade for just $139!

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Microsoft

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The best C/C++ tools for Windows are from the company that makes Windows.

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TAB 7

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APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

94-1564 SS

FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

The Newspaper of Information Systems Management
October 10, 1994, Vol. 28, No. 41, 168 Pages, $6 Copy, $48/Year

COMPUTERWORLD

News

Server suite could squeeze market

Microsoft product linking plans point to another bid for dominance

By Stuart J. Johnston
and Ed Scannell

Microsoft Corp.'s recently announced BackOffice server suite is the first step in an evolution designed to accomplish much tighter integration during the next few years between the company's enterprise building blocks of servers and its operating systems.

In fact, by the time Microsoft's Cairo version of Windows NT arrives in late 1995, the fit may be so tight that a competitor's knife blade will not fit between the blocks.

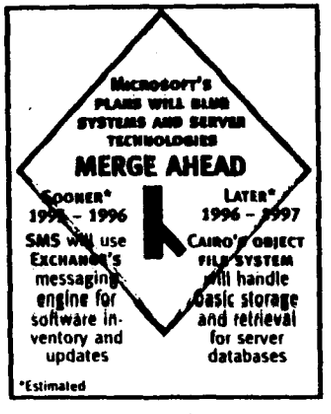
Problems could arise for competitors if Microsoft shares information only with its own developers on how to tightly integrate with the object-oriented Cairo file system, suggested Warren Smith, a certified public accountant and certified information systems auditor in Pacific Bell's auditing department.

If Microsoft puts shortcuts into Cairo that turn out to be better than the industry standard implementation of Cairo, Smith said the situation could be a return to the days when other third-party vendors complained about Microsoft using application programming interfaces "that no one else knew about in some of their applications."

At least one other observer agreed.

"All of this is an inevitability," predicted Jerry Schneider, president of Schneider Associates, Inc., a consultancy in Burke, Va., and former president of the Capitol PC User Group. "The [operating system] is always going to be getting more and more aggressive. No one is safe anymore."

The very thought may further unhinge competitors, some of which are still smarting from the recent Justice Department antitrust settlement with Microsoft. However, many large users do not appear concerned. In fact, some said they welcome a model along the lines of the old IBM that positions Microsoft as the new empire builder.



"Where Microsoft is at right now reminds me of where IBM was in the 1970s and 1980s, [and] if it continues to do things right, the users will benefit," said Scott Piper, a network analyst at Public Service Co. of Colorado in Denver.

"Generally, I don't find Microsoft's proprietary elements to be an impediment, [and] by making life simpler, it's going to be positive," said Colin Carpi, president and founder of Chartwell Advisory Services, Inc. in Penn Valley, Pa., which is developing a large on-line financial services system.

"Big is usually good [for users] because if you're going to have things work, then you [must] have standards, and that takes one [dominant] company," said Briscoe Stephens, coordinator for space sciences in the Advanced Scientific Information Systems Group at NASA in Huntsville, Ala.

Enhancing that vision of dominance are recent acknowledgments by Microsoft officials that over time, the line between server applications and systems software will begin to blur. The first step will be to provide tighter integration among the components in Microsoft's recently announced BackOffice server suite.

A major jumping-off point will come, however, when Microsoft ships the next major release of Windows NT, code-named Cairo, which will include a new file system that will store information as objects instead of files.

Total control

Cairo's Object File System will provide many core functions that users currently think of as database functions — functions that can become part of a standard computing architecture that Microsoft controls from top to bottom. Cairo is scheduled to ship late next year, but many analysts and industry observers said they do not believe it will be out until 1996, at the earliest.

By the time the entire strategy unfolds, users may depend on Microsoft for virtually all their computing needs, which Amy Wohl, editor of the "Trendsletter" industry newsletter in Narberth, Pa., suggests may not be a good thing.

"Microsoft is becoming [like] IBM, [and] the downside [for users] is the more they do that, the less open they're going to be [so that] it becomes harder to swap in your favorite database," Wohl said.

Microsoft officials deny their plans will make their systems more closed. Many users agree, arguing that competitors will always be able to come up with innovative products to help keep the systems open.

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TAB 8

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Exh. 8
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FEB 14 1995
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Commentary

Carole Patton

Bundles are bad news

Windows 95 is not just an operating system. When it arrives next spring, this tour de force from Microsoft will replace all those (formerly) separate utilities you probably have on your PC right now, such as fax software, E-mail and communications capabilities. Especially neat here is that all these built-in Windows applications will be tightly integrated into a single common interface and even a central database of names and addresses.

In fact, Windows 95, the next generation of Windows, is such a complete operating environment that you may never have to purchase another Windows utility again. Nice for you. Not so nice for software developers such as Lotus, Delrina or Symantec, whose Windows products are about to become "buggy whips" in the name of progress. Microsoft is even including a somewhat feature-limited version of its best-selling suite, Microsoft's Office, in Windows 95.

> The bundling strategy is a prescription for destroying the Windows service applications market.

This strategy is a prescription for destroying the Windows service applications market and damaging (if not terminating) the market for core business software. For example, what if you buy a laptop preloaded with Windows 95 and Microsoft's Office. Will you then go out and buy SmartSuite from Lotus or PerfectOffice from Novell? Probably not. Consumers aren't interested in replacing "good enough" with "great." Most new car buyers keep the standard radio their car came with. Only a handful are willing to shop around and pay a premium for better audio quality.

Bundle bandwagon

Microsoft is not alone in pursuing a bundling strategy. IBM's OS/2 Warp Version 3.0 ships with a Bonus Pak that includes a word processor and a spreadsheet (IBM Works), plus a host of third-party software.

These "free" goodies help sell the product and anoint those vendors whose software is bundled — "It's in there; it must be good," users think. But such a strategy also leaves out in the cold any vendor whose software was overlooked.

While bundling is arguably anticompetitive, the issue has expanded with Windows 95. IBM's Warp cannot claim the same high level of integration of Microsoft's standards, such as the internal communications process embodied in Object Linking and Embedding (OLE).

Take, for instance, Lotus' SmartSuite 3.0 for Windows, released in September. For all intents and purposes, SmartSuite is an office in a box. You get a word processor (Ami Pro), Lotus' famed 1-2-3 spreadsheet, a database (Approach), a calendar program called Organizer and Freelance Graphics presentation software. Lotus' SmartCenter tool for switching among these applications is nifty.

However, Lotus SmartSuite programmers were able to provide support for only part of the OLE 2.0 specification: the drag-and-drop among 1-2-3, Approach and SmartCenter. Microsoft's Office, on the other hand, supports OLE 2.0 across the board. (It *is* Microsoft's standard, after all.) It is so tightly integrated with Windows 95 that removing it to make room for SmartSuite may not be practical.

I've long thought that by selling both systems and applications, Microsoft would gain advantages that could eventually terminate competition among Windows vendors. This is especially evident now. With hardware prices dropping so fast, Windows (and Windows applications) could become "disposable" thanks to Windows 95. You won't ever have to replace or upgrade programs. Just buy a new PC that comes complete with all the software anyone is ever likely to need.

Sees their side

I can't blame Microsoft or IBM for trying to create a complete operating environment. We are leaving the era when users cared about software and took the time to learn a variety of different packages and understand the differences. Most computers today are being bought by novice PC users, and these newcomers require software that is easy to use. They want Windows point-and-click software, not arcane commands.

But I believe competition is, for all practical purposes, "locked out" when operating systems developers can integrate their own applications and so much "free" third-party software in a single, seamless package. If this doesn't raise a red flag in the offices of the U.S. Justice Department, then our regulators are asleep at the switch.

Here's the bottom line: Will you be better off five years from now without Lotus' SmartSuite for Windows? Without PerfectOffice? Without WinPlus? Without any choice?

Patton is chief analyst at the Meridian Technology Group in Meridian, N.J., and publisher of "Windows Letter," a newsletter for corporate decision-makers. Her book, *OS/2 Goldmine*, will be available from Van Nostrand Reinhold in March. Contact her through MCI Mail at 401-1868 or via CompuServe at 73700,2503.

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TAB 9

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Developing for next generation of Windows may mean running on NT

By William Brandel and Ed Scannell

While software developers are enthusiastically preparing their wares for Microsoft Corp.'s rollout of Windows 95 next year, they are not thrilled about the strings attached to Windows NT.

A number of software developers last week expressed both reluctance and frustration over their efforts to codevelop Windows 95 applications that also run on Windows NT. Microsoft has required that software developers who want to use the Windows 95 logo meet a standard of seven different features, one of which is that the application also run on Windows NT [CW, Nov. 14].

A number of vendors said developing for the two operating systems is difficult, as each targets a different market. Windows 95 is the 32-bit version of Windows mostly likely to run on Intel Corp.-based desktops, while Windows NT targets applications that have typically run on Unix platforms, such as server and workstation applications.

"We are not going to delay our Windows 95 applications so that we can deliver Windows NT applications at the same time," said Peter Cohen, a spokesman for Lotus Development Corp.'s spreadsheet business. "We just don't see the demand for desktop applications on Windows NT."

In addition to the timing issue and a perceived lack of demand for Windows NT applications, Cohen cited the need to conduct extra rounds of quality assurance testing for applications that run on NT. Those resources could be better applied elsewhere, according to Lotus.

NT = no ties

The following vendors are writing applications for Windows 95, but they have different plans for Windows NT

VENDOR	WINDOWS NT DEVELOPMENT
Lotus	Yes, but effort is separate from that for Windows 95
WordPerfect	Yes, but having trouble
Symantec	No, little customer demand

This sentiment was echoed by a number of developers, including officials at WordPerfect, the Novell, Inc. Applications Group. WordPerfect is trying to meet the NT compatibility requirement.

"Windows NT has [more than a dozen] different APIs, a different shared memory space and different bugs to test for," said Gary Gibb, director of development for WordPerfect's PerfectOffice. "You have to go through your entire testing cycle on a number of different hardware configurations and then repeat these tests on NT. And none of this makes the Windows 95 applications run any better."

However, while Microsoft has listed running on NT as a Windows 95 compatibility standard, it has also left the door open for vendors to opt out. Microsoft will allow certain vendors to "degrade gracefully," or choose not to comply with some of the compatibility requirements, if the applications do not mislead the end user into believing certain functions are available when they are not, said Brad Struss, manager of Win32 developer relations at Microsoft.

"We'll let some vendors gray out an item menu if they don't support a feature," Struss said. He added that Microsoft's aim is to ensure that users do not run into application errors from trying to run a Windows 95 application on NT.

As for the alleged difficulty in developing to the Windows NT application programming interfaces (API), Struss blamed confusion over which API developers should be using.

Few choices for small vendors

While companies such as Lotus and Symantec Corp. have opted not to let the NT compatibility requirement bog down their Windows 95 application deliveries, smaller companies with limited resources are facing tougher choices.

"We have to measure the investment for Windows 95 development vs. our revenue streams for Windows 3.1," said Bruce Shafer, president of UC-Kwik Corp. For a smaller vendor, "it is a tightwire act," Shafer said.

Resources aside, other small vendors said their products are not conducive to the NT platform.

"The logo requirement is extreme," said Richard Smith, president of Phar Lap Software, Inc. "It makes no sense for us to have our Front Runner under NT." Front Runner is a shell that enables an end user to toggle between Windows and DOS applications.

However, it is risky to be a software developer rebelling against the mandates of Microsoft, cautioned industry watcher Jeffrey Tarter, editor of "Soft Letter" in Watertown, Mass.

"There is a long history of developers who thumbed their noses at Microsoft and later regretted it," Tarter said. "As an [independent software vendor], betting against Microsoft does not seem to be a high-payoff game."

Senior editor Michael Fitzgerald contributed to this report.

Correction

Due to a reporting error, "Replication falls short" [CW, Nov. 21] incorrectly identified the consulting firm where analyst Judy Davis works. Davis works at Patricia Seybold Group in Boston.

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FEB 14 1995
Clerk, U.S. District Court
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TAB 10

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Ex. 10
94-1564 SS

► Can Microsoft get SQL Server on everything from big iron to steam irons? If you think OLE everywhere is the future, the answer is yes. *By J. William Semich*

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The LONG VIEW from Microsoft: Component DBMSs

THEY JUST DON'T GET IT. Informix, Oracle, Sybase—all the top database-system companies. They watch in a dither for a year while Microsoft messes up their space with its dirt-cheap SQL Server For NT database technologies, and they think that Microsoft is being random (as Bill Gates might put it) with pricing that just doesn't make sense. Dangerously random.

But the UNIX database oligopoly is only half right. They got the danger part right. Because it turns out Microsoft has a plan. When the company announced its future SQL Server 95 last June, the SQL Server crew had its three-year strategy all mapped out. 'Course, they didn't show that map at the announcement—only Microsoft's top management had seen and approved it. But we got an in-depth look after hours, and we'd like to share it with you.

Microsoft is taking a three-pronged strategy with its SQL Server technology. For symmetry's sake, we'll label the prongs "Three Hundred Million Servers," "Three Hundred Processors," and "Three Hundred Objects." If Microsoft succeeds on all three fronts, the face of computing will change, and so will the trajectories of the high-flying database vendors.

THREE HUNDRED MILLION SERVERS

First, there's the Three Hundred Million Servers strategy. That's basically a price strategy. Microsoft thinks it can push the price of the powerful database server software central to enterprisewide distributed computing so low that all your future computing systems will be based on database servers running on super powerful, cheap boxes. This is not a "servers attack the mainframe" strategy, though, cautions Microsoft's director of enterprise computing, David Vaskevitch. It's more of a "servers run the business" approach. "There are 11 million places of business in the U.S. alone. They're all doing things right now that servers could help them do better," Vaskevitch explains. "And there are other things they never dreamed of being able to do; servers can make those things happen, too." That blue-sky approach means, for example, that SQL servers could run your phone system, copying system, cash registers, all that stuff. Not hard to get to 300 million that way, eh?

This won't happen overnight, adds Vaskevitch, but he sees it as inevitable over the long term.

THREE HUNDRED PROCESSORS

Second, there's Microsoft's high-end corporate-computing strategy. By this time next year, when Microsoft ships the next upgrade of SQL Server For NT (code-named SQL Server 95, now officially named Microsoft SQL Server), its database server will be able to run on the most powerful mainframe-class multiprocessor computers and virtually match the pow-

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MS-SQL Server: Good Today, Better Tomorrow

Think you'll ever seriously consider swapping your mission-critical DB2-based financial management system, or Oracle7-based airline reservation system, or even your Sybase SQL Server 10-based loan approval system for a really complex Excel spreadsheet with a SQL Server engine? Hah!

But Bill Gates is betting the company that you will. Not exactly an Excel spreadsheet, of course—but a whole new kind of mission-critical, high-availability, heavy-duty, object-oriented, component-based enterprise system that includes the next generations of Microsoft's Windows NT operating system (dubbed Cairo), the new SQL Server 95 (and the unannounced SQL Server For Cairo), and its coming distributed OLE technology.

All this will happen in the next year or two, a not-so-distant future that Microsoft internally refers to as "the Cairo timeframe."

At right is the techno-time line Microsoft hopes will turn into reality:

er, features, and functions of the latest multiprocessor and parallel-processing products from the UNIX vendors.

You could call this the Three Hundred Processors Strategy and you'd not be half wrong. Well, maybe not 300 processors—at least not right away.

The Three Hundred Processors Strategy is actually one way Microsoft plans to become a major player in large-scale, mission-critical computing technologies. Microsoft recently restructured itself to better focus resources on making it happen. Last year, prior to restructuring, Microsoft sold just under $5 billion worth of PC software in a market that totals barely $10 billion. With its high-end corporate strategy, Microsoft intends to move into the $70 billion+ market for business software, so it can grow lickety split to something like $20 billion.

"We'll need to be selling into a $100 billion software market to get to that $20 billion," says Richard Tong, marketing director for Microsoft's new IS-focused Business Systems Division.

Of course, sitting squarely in the middle of that enterprise computing market are the likes of Computer Associates, Oracle, Sybase—you know the names. They won't let on that they're really concerned about the competition from Microsoft. They say Microsoft's big talk is just smoke. So how does Microsoft intend to prove them wrong?

Early progress toward the long-term Three Hundred Million Servers goal will help Microsoft achieve its aggressive revenue growth forecast, but performance improvements will help more.

By 1996, when Microsoft ships its even more advanced SQL Server For Cairo, it expects it to actually outperform Informix-Online Dynamic Server 6.0, Oracle7.1, and Sybase System 10 (see "MS-SQL Server: Good Today, Better Tomorrow").

THREE HUNDRED OBJECTS

Third, there's the Three Hundred Objects prong of Microsoft's strategy, the component-software-system piece. In order to build enterprise-computing systems from reusable mix-and-match software components, you need more than the object-oriented operating system Cairo, distributed OLE, and the Visual Basic enterprise development tool technologies. You need a technology that turns desktops and servers into peers when it comes to storing, sharing, and finding objects.

To help make this happen, Microsoft is moving SQL Server technology down-

The Metamorphosis of Micrsoft SQL Server

1994

SQL Server 4.21a

- Symmetric multiprocessing
- Graphical tools
- Transact-SQL language
- Two-phase commit
- Database RPCs
- Extended stored procedures
- MAPI integration
- Integrated security
- Async I/O
- Macintosh ODBC

NT AS

1995

SQL Server 95

Adds:

- Data replication
- Multiserver administration
- Very large database support
- OLE automation
- Visual Basic For Applications extended procedures
- Parallel operations: backup, restore, load
- ANSI SQL support
- Engine-based scrollable cursors
- Extended MAPI
- Parallel table scan

NT Server 3.5 (Daytona)

1996

SQL Server For Cairo

Adds:

- Object repository
- OLE data access
- Parallel query/indexing
- Distributed heterogeneous joins
- Rich query semantics
- Versioning, row locking
- ANSI-92 conformance
- Cairo security, directory
- User-defined functions
- Hierarchical data types
- Object File System integration
- Transaction coordination

NT Cairo

Source: Microsoft

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scale, onto the desktop. The plan is to use pieces of MS-SQL Server technology to rebuild desktop apps like Microsoft Access and Excel so desktops and server components can talk to each other.

"There's this huge mismatch, in terms of semantics, between the big server-based database systems and the tools that run on the desktop," says Gary Voth, group products manager, Business Systems division. "We want to build a common technology across the server—common data access semantics, common rich query technology—a unified engine architecture with the best of Access, Fox, and SQL Server itself. Then we'll move it into a single architecture, with shared technology between the server and desktop, and then componentize it all."

Come Cairo, that common architecture will be distributed OLE and the components will be distributed OLE objects.

The first implementation of this component strategy is in SQL Server 95's new suite of enterprise management tools, which are supposed to simplify the process of managing large, distributed

The SQL Server NT Decision: One Insider's Advice

By an anonymous Microsoft technology partner

You'd be crazy not to start looking seriously at Microsoft's SQL Server 95 technology. But you'd also be crazy—OK, not crazy, just adventuresome—to commit your company today to Microsoft's component enterprise-computing plan lock, stock, and barrel.

Even so, I've looked at SQL Server 95 and 96 up close and undressed, sort of, and it is something really slick. Microsoft recently demonstrated an early, early version to my company in the hopes that we would port our apps to SQL Server For NT. I can't tell you my company's name, but it's one of the leading midrange manufacturing packaged software application vendors.

First off, I was surprised and impressed at the level of the technology they're showing in SQL 95 and SQL 96. Microsoft looks like it's paying attention to the issues that are important to making SQL Server an enterprise-quality database management system.

They seem to be building in a scalability capability for symmetric multiprocessors, and they're leveraging the multithreaded capability of the NT operating system. That gives them a leg up on the other database products, which rely on different versions of UNIX. Some versions of UNIX don't support multithreading, so everything goes through a single queue. Microsoft isn't constrained by that.

SQL Server 95's new system administration toolsets [Starfighter] are very impressive. Microsoft is paying a lot of attention to things like ease of use and the kinds of data replication issues that are necessary to manage performance and backup, and necessary for hot-backup capabilities, performance monitoring, and job scheduling. The SQL 95 job scheduler is integrated into NT. That technology alone shows that Microsoft is trying to listen to enterprisewide needs. I don't see SQL 95 as a scaled-down version of Sybase System 10 at all. It appears to have the same robust capability that Sybase has.

"Don't bet your job or your company on Microsoft SQL Server and NT Server today"

That said, I still chose Sybase System 10 for the next version of my company's packaged software. Why? Because my customers can buy it today, and I know it works and works well. And if I were a CIO or CTO at a large enterprise, I would do the same thing.

SQL Server 95 is an "NT only" solution—whatever advanced functionality Microsoft's building into it now is predicated on the success of NT. That's still an open question.

Besides, Microsoft's track record on delivering both functional and technical quality products out of the box isn't what I'd like it to be for the kinds of solutions I'm trying to sell. I'm not selling spreadsheets and word processors. Plus, Microsoft has no track record selling enterprise systems or applications. It's a gamble.

My recommendation is don't bet your job or your company on Microsoft SQL Server and NT Server today. Let Microsoft's existing dedicated NT users do that instead.

But you should look at SQL Server 95 and 96 very closely for the future. If you're an IS manager, assign staff to watch SQL Server and NT technology developments very closely. Do some background prototypes using SQL Server 4.21 [Microsoft's current version]. Start building apps that include Microsoft's other enterprise server products like Hermes [Systems Management Server] and Information Exchange Server to see how the emerging Microsoft approach to enterprise computing fits your company's future needs. Then sign up as a beta site for SQL Server 95 later this year. [Microsoft is accepting beta requests as of this writing.]

That way, you'll at the least gain valuable experience in the operating system and client/server technologies that will begin to dominate the industry over the next two to three years, as Microsoft moves its user base to the Cairo component-computing environment.

If you're bringing up new mission-critical apps, go with the known players: IBM, Oracle, Sybase, CA, or Informix.

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systems across geographically dispersed servers with stuff like drag-and-drop replication, automated restore and restart. The tools, which Microsoft previously code-named Starfighter but has officially named Enterprise Administration Tools For SQL Server 95, are all OLE objects. Starfighter lets users build their own database management scripts using a new 32-bit version of Visual Basic. SQL Server 95 itself is, in effect, an OLE automation server for these OLE tools and scripts.

In other words, Microsoft is rebuilding SQL Server so that it can contain and manage software components. When SQL Server For Cairo is shipping, Microsoft's world of computing will become a world of OLE objects–components that a developer can link together using OLE's APIs into an application. Then SQL Server won't just store data–it will contain components.

"Under Cairo, you're either an OLE 2 object or you're nothing"

Explains Casey Kiernan, Microsoft's program manager for SQL Server tools: "Cairo is really an OLE 2 operating system–under Cairo, you're either an OLE 2 object or you're nothing. We'll wrap OLE 2 around the legacy stuff. The OLE SQL Server object [in SQL Server 95] is the first step to Cairo."

SQL Server will be just one of Cairo's server-based components, says Voth. "All of our server apps–SQL Server, Systems Management Server, Information Exchange Server, and SNA Server–will have this single integrated model in Cairo," he explains.

The company is serious about this, too, Vaskevitch says. No matter how long it takes, or how much work has to be done to make the technology compelling to commercial users, the company is committed to making its NT-based SQL Server the enterprise launching pad for its Cairo component-computing system.

"We've already invested three years in the planning process for SQL Server, and it doesn't bother us if it takes five, even eight years to get to where we want to be–we don't give up," says Vaskevitch. It probably doesn't hurt to have deep pockets, either.

THE FUTURE OF TECHNOLOGY & PRICING

So there it is–the future of enterprise computing according to Microsoft, the world's richest software company. And where will all the UNIX database companies be, come Cairo time? Today, at least, they still act like they don't have a clue.

They still think they can advance the technology by making their database systems into bigger, better, faster (and pricier) versions of what they've been selling for the past decade and a half–with, of course, the magic sobriquet "open" pasted onto it all.

They may think that. But according to Microsoft's plan, all these big, distributed UNIX megaliths will soon seem just as rigid, overpriced, oversized, and outdated

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as yesterday's mainframe and mid-range systems seem today. Microsoft's low-priced component based SQL Server 95 system and the low-cost hardware it runs on, conversely, will (so Microsoft thinks) form the basis of a whole new culture of computing–kind of like DEC with its avant-garde midrange computing technologies in the heady 1970s.

Fact is, the UNIX crowd is still stuck in the fast-receding bygone era when a system's power and size determined its price–the higher the price, the better the system. "Need to query a 5 million row, one gig table fast? Here, use this. That'll be $500,000, please. Need to run a departmental transaction record-keeping system? Okay, that's $117,000."

How do they set these prices? In what other industry could a marketing director describe product pricing strategy like this: "We look at what value our products bring to our customers' businesses and price according to that value." Translation: The more money your company earns, the more it should pay for its RDBMS.

They're extending that logic to conclude that Microsoft's SQL Server, at only $19,995 for an unlimited-user, multiprocessor RISC-based version, must be a low-power workgroup product. If high value equals high price, then low price must equal low value, right?

They just don't see what's going on.

It's like, they're watching Microsoft through a chink in a fence, right, and all they can see is a shiny piece of stainless steel here, a flash of glass there, maybe a lintel and a post somewhere else. So they think, "Hey, what are these guys making in there?" They figure it's a copycat version of what they've been building and selling for the past few years: a monolithic, UNIX-like, database-centric, big-business system that can pile information high to the sky without collapsing from its own weight.

Need to query a 5 million row, one-gig table fast? Here, use this. That'll be $500,000, please

'Tain't likely. Cause there really is a cultural revolution spinning out around how businesses do computing in the workplace–moving the power of computing down to the local level, onto your desktop, even down onto your lap.

Is Microsoft's 300 Million Servers, etc., vision the right one for this cultural shift? Hard to tell at this point. Maybe IBM will do a few quick flips and–presto–put together a better bunch o' buyables before Microsoft can. Or maybe NeXT's Steve Jobs and his UNIX bigots' object alliance, Sun, HP, DEC, and others, will get there first.

But one thing's for sure. Three, maybe five years from now, the UNIX database system vendors (the one or two who are still around to play) will be using a whole different set of rules–rules first sketched out up in Redmond by the likes of David Vaskevitch, Rich Tong, and Gary Voth. ☼

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TAB 11

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Preface

The year 1993 was one of dramatic change in the PC software industry. This report will highlight the major events of 1993 in personal computing software. We analyze the positioning and directions of the top 10 vendors, dissect our data, and then analyze applications by category, operating system, and region. We conclude with our forecast of future trends in the industry.

Data included in this report is listed as needed for our discussion. For a comprehensive list of our historical data and forecasts, refer to the *Personal Computing Software Worldwide Market Statistics*, a series of three reports published in June 1994 (product codes: PCSW-WW-MS-9401, -9402, and -9403).

Dataquest's PC Software service tracks all major PC software business productivity applications running on the DOS, Windows, Macintosh, OS/2, and Windows NT operating systems and environments. Other services concentrate on other areas of the software market: our Multimedia service tracks entertainment and education software; our Client/Server service tracks development tools and server databases; and our Digital Documents and Operating Systems services complete the offerings.

In Appendix A, we define our market coverage boundaries. In Appendix B, we discuss the methodology used to arrive at our decisions.

We hope that you find this information useful. Please contact us if you have any questions regarding the data or analysis.

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FEB 14 1995

Clerk, U.S. District Court
District of Columbia

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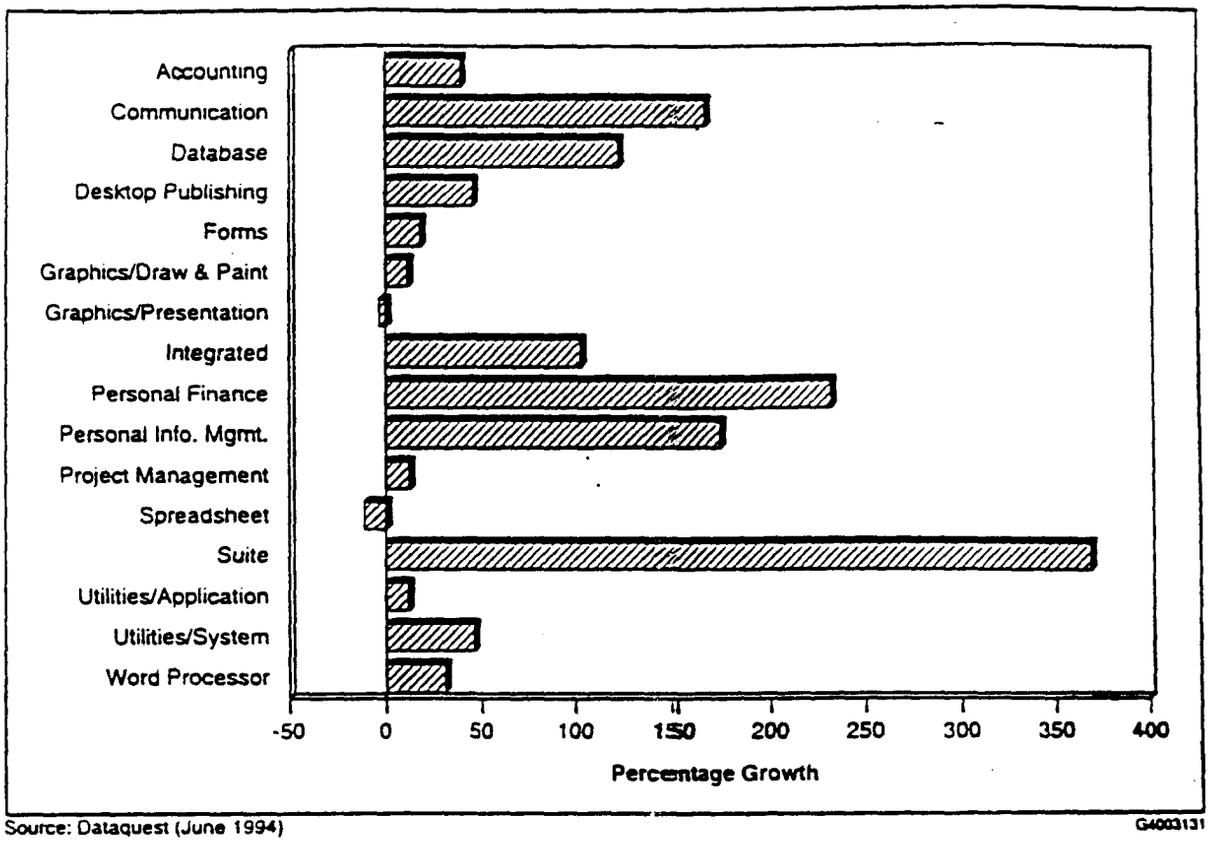
Figure 4-2
1993 Unit Shipments Growth by Category



Source: Dataquest (June 1994) G4003131

Analysis of Each Category

This section will analyze the 1993 results for each category. Future trends for each category will be discussed in Chapter 7. For a definition of each category, see Appendix C.

Accounting

Intuit, a new entry in the accounting market in 1992, jumped to the top spot in revenue in 1993 (see Table 4-1). Realworld, Peachtree, and Great Plains all ship products that have a higher ASP than Intuit; however, revenue for all four companies is very closely matched in the U.S.$20 million range. A slow transition to the Windows platform contributed to the revenue decline in 1993.

Communication

The communication market exploded in 1993. Bundling arrangements with modem OEMs contributed significantly to the 167 percent growth in unit shipments (see Table 4-2). Revenue increased by an impressive 47 percent. Delrina's WinFax Pro and Datastorm's Procomm Plus led the charge. The growth of the laptop market also spurred unit sales. There is still room for growth in this market, but 1993 will be remembered as the year this market really took off.

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Table 4-12
Top Vendors in the Spreadsheet Market
(Revenue in Millions of U.S. Dollars)

	1993 Revenue	1992 Revenue	1993 Market Share (%)	Revenue Change (%)
Lotus	445.9	502.2	46.1	-11.2
Microsoft	357.0	484.4	36.9	-26.3
Borland	69.5	121.4	7.2	-42.8
Total Spreadsheet Market	968.0	1,262.3	100.0	-23.3

Source: Dataquest (May 1994)

Table 4-13
Top Vendors in the Suites Market
(Revenue in Millions of U.S. Dollars)

	1993 Revenue	1992 Revenue	1993 Market Share (%)	Revenue Change (%)
Microsoft	821.2	213.0	85.4	285.5
Lotus	114.8	16.1	11.9	612.7
Borland	17.7	0	1.8	NA
Total Suite Market	961.5	229.1	100.0	319.7

NA = Not applicable
Source: Dataquest (May 1994)

Utilities/Application

WordPerfect's Grammatik for both DOS and Windows were the two leading applications in 1993. WordPerfect garnered a 36 percent market share based on revenue in 1993 (see Table 4-14). This is a small market that involves small companies able to find a niche market. This is not a market where we will likely see one or two vendors dominate.

Table 4-14
Top Vendors in the Application Utilities Market
(Revenue in Millions of U.S. Dollars)

	1993 Revenue	1992 Revenue	1993 Market Share (%)	Revenue Change (%) (1992-1993)
WordPerfect	24.1	0	36.2	NA
Wordstar	5.8	9.2	8.8	-36.5
Adobe	4.9	5.7	7.3	-14.0
T/Maker	4.0	3.7	6.0	8.8
Total Application Utilities Market	66.6	69.8	100.0	-4.6

NA = Not applicable
Source: Dataquest (May 1994)

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TAB 12

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

Department of Justice

94-1564 SS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia AT

FOR IMMEDIATE RELEASE
SATURDAY, JULY 16, 1994

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MICROSOFT AGREES TO END UNFAIR MONOPOLISTIC PRACTICES

WASHINGTON, D.C. -- Microsoft, the world's largest and dominant computer software company, agreed to end its illegal monopolistic practices after the Department of Justice charged that the company used unfair contracts that choked off competition and preserved its monopoly position.

The company agreed to settle the charges with a consent decree that will prohibit Microsoft from engaging in these monopolistic practices in the future.

Microsoft, which makes the MS-DOS and Windows operating systems used in more than 120 million personal computers, was accused of building a barricade of exclusionary and unreasonably restrictive licensing agreements to deny others an opportunity to develop and market competing products.

Attorney General Janet Reno said, "Microsoft's unfair contracting practices have denied other U.S. companies a fair chance to compete, deprived consumers of an effective choice among competing PC operating systems, and slowed innovation.

(MORE)

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Today's settlement levels the playing field and opens the door for competition."

"Microsoft is an American success story but there is no excuse for any company to try to cement its success through unlawful means, as Microsoft has done with its contracting practices," said Anne K. Bingaman, Assistant Attorney General in charge of the Antitrust Division.

The settlement is the result of close coordination between the Department of Justice and the competition enforcement authorities of the European Commission, which has been investigating Microsoft since mid-1993, and which also initiated an undertaking containing essentially the same terms. This complaint and settlement marks the first coordinated effort of the two enforcement bodies in initiating and settling an antitrust enforcement action.

Bingaman, praised the Commission, noting that, "This unprecedented, historic cooperative action sends a powerful message to firms around the world that the antitrust authorities of the United States and the European Commission are prepared to move decisively and promptly to pool resources to attack conduct by multinational firms that violate the antitrust laws of the two jurisdictions."

The civil complaint and consent decree were filed last night, July 15, in U.S. District Court in Washington, D.C. The consent decree, if approved by the court, would settle the suit.

(MORE)

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Until approved, Microsoft has agreed in a stipulation filed with the court to abide by the terms of the decree.

The Department alleged that Microsoft used the following unfair practices:

Exclusionary Per Processor Licenses--Microsoft makes its MS-DOS and Windows technology available on a "per processor" basis, which requires PC manufacturers to pay a fee to Microsoft for each computer shipped, whether or not the computer contains Microsoft operating system software. The complaint alleges that this arrangement gives Microsoft an unfair advantage by causing a manufacturer selling a non-Microsoft operating system to pay at least two royalties--one to Microsoft and one to its competitor--thereby making a non-Microsoft unit more expensive.

"Microsoft has used its monopoly power, in effect, to levy a "tax" on PC manufacturers who would otherwise like to offer an alternative system," said Bingaman. "As a result, the ability of rival operating systems to compete has been impeded, innovation has been slowed and consumer choices have been limited." She noted that Microsoft has maintained the price of its operating systems while the price of other components has fallen dramatically. Since 1988, Microsoft's share of the market has never dropped below 70 percent.

Unreasonably Long Licenses--The Department further alleged that Microsoft's contracts are unreasonably long. By binding manufacturers to the purchase of Microsoft products for an

(MORE)

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excessive period of time, beyond the lifetime of most operating system products, the agreements foreclose new entrants from gaining a sufficient toe-hold in the market.

Restrictive Non-Disclosure Agreements--The Department also charged that Microsoft introduced overly restrictive non-disclosure agreements to unreasonably restrict the ability of independent software companies to work with developers of non-Microsoft operating systems. Microsoft sought the agreements from companies participating in trial testing of the new version of Windows, to be released later this year. The terms of these agreements preclude applications developers from working with Microsoft's competitors for an unreasonable amount of time.

The settlement ends these practices and will help to rectify the effects of Microsoft's past unlawful conduct. In particular, the settlement prohibits Microsoft from:

--Entering into per processor licenses.

--Obligating licensees (manufacturers of personal computers) to purchase any minimum number of Microsoft's operating systems;

--Entering into any licenses with terms longer than one year (although licensees may renew for another year on the same terms).

--Requiring licensees to pay Microsoft on a "lump sum" basis.

(MORE)

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--Requiring licensees to purchase any other Microsoft product as a condition for licensing a particular Microsoft operating system.

--Requiring developers of applications software to sign unlawfully restrictive non-disclosure agreements.

The settlement is effective immediately and will be in effect for six and a half years.

Bingaman said "this settlement resolves the competitive problems created by Microsoft's unlawful conduct quickly and effectively."

Microsoft's main corporate office is in Redmond, Washington.

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ORIGINAL

DEPARTMENT OF JUSTICE

PRESS CONFERENCE

With Attorney General Janet Reno and

Assistant Attorney General Anne Bingaman

Regarding the Microsoft Settlement

Saturday, July 16, 1994

(Transcribed from a provided audiotape.)

ALDERSON REPORTING COMPANY, INC.
(202)289-2260 (800) FOR DEPO
1111 FOURTEENTH STREET, N.W. SUITE 400 / WASHINGTON, D.C. 20005

PROCEEDINGS

ATTORNEY GENERAL RENO: Good afternoon.

The Justice Department has charged Microsoft, the world's largest software company, with using unfair marketing and contracting practices to choke off competition to preserve its monopoly position. Microsoft has agreed, yesterday, to settle the charges with a consent decree that will prohibit the company from continuing to engage in monopolistic practices in the future.

While the company fairly and lawfully climbed to the top of the industry ladder, it used unfair and illegal practices to maintain its dominant position, and kept honest competition from other U.S. companies.

The Justice Department has taken an action that is critical to the personal computer industry and the efforts to make it competitive. This settlement will save consumers money, enable them to have a choice when selecting PC operating systems, and it will stimulate innovation in this critical market.

Today's settlement is the result of close coordination between the Department of Justice and the Competition Enforcement Authorities of the European Commission, which, today, also has indicated an undertaking containing essentially the same terms.

This complaint and settlement marks the first

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coordinated effort of the two enforcement bodies in initiating and settling an antitrust enforcement action.

I want to thank and to recognize Anne Bingaman and the fine staff of the Antitrust Division, who have worked through long hours of negotiations to resolve quickly this significant case, and achieve the best results for the consumers of America.

And now I would like to ask Anne --

MS. BINGAMAN: Thank you.

We are proud of the achievement that the settlement filed in Federal District Court in Washington, the District of Columbia, at 9:30 last night represents. It is a significant -- in fact, historic -- breakthrough for the software industry, for innovation, for the competitiveness of the American economy.

Let me describe for you briefly what the case we filed is about and what the settlement achieves, because they are significant.

Number one, the settlement will open the playing field; it will level the playing field for Microsoft's competitors in the operating system software market, to enter this important market, to bring down prices to consumers, to innovate, to produce better products.

Microsoft, for years, and has today, monopoly power in the software -- operating system software market.

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As this chart shows, Microsoft has 79-plus percent of that market. Its competitors are other American companies who have been struggling for years to enter this market to provide better, cheaper products to American consumers, and Microsoft's contracting practices, which are challenged in this lawsuit and which are ended by the settlement we achieved, have prevented those competitors from entering the market. They have deprived consumers of choice. And they have stopped innovation -- slowed innovation in this important market.

Let me describe to you the four major things that Microsoft did and which this settlement ends.

Number one, the per-processor license, I'll describe in a moment.

Number two, contracts of extraordinarily long duration which blocks the market.

Number three, huge, 100 percent minimum commitments for years, which amounted to take-or-pay contracts, which blocked the market.

And, four, restrictive non-disclosure agreements for software writers which prevented them from writing for other software companies in some cases.

Let me turn first to the per-processor license, what that is and what this settlement does to stop it.

Number one, the settlement bans it outright. That

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is first. What the per-processor license has done until last night at 9:30 was to lock up 60 percent of this market in the United States in per-processor contracts which Microsoft began using in 1988. Per-processor contracts are contracts which Microsoft imposed by virtue of its dominant monopoly position on computer manufacturers, such as Dell, Compaq, Gateway, you name it, the OEM's they are called in the business, the computer makers, who have to license from Microsoft because it has had this monopoly position and the products are demanded in the marketplace.

Nothing wrong with that, but rather than simply sell those products fair and square on the merits and on price, in 1988, Microsoft invented a form of contracting called the per-processor license, under which it required the computer manufacturers -- induced them with extremely low prices to pay for every processor they shipped of a certain type not just to Microsoft, but to the competitors.

So it worked this way: Under a per-processor license, which 60 percent of the industry has had until last night, Microsoft got paid for every processor shipped by a computer maker, whether or not that processor had a Microsoft operating system loaded on it.

Now, if you are a competitor of Microsoft and you wanted to sell your competing product to a consumer, you do that through these computer manufacturers. But they had to

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pay Microsoft.

Now, if Microsoft -- take this hypothetical -- operating system was $15, and you came in with a better operating system or cheaper, it worked just as well, hypothetically $10 -- these numbers are lower than average, but for ease -- under the per-processor license, the computer manufacturer pays Microsoft 15 and the competitor 10 for a total of $25 on what really is a $10 item.

The result, computer manufacturer were reluctant -- extremely reluctant -- to buy from competitors. And that was the purpose and the effect of the per-processor license. It's obvious what it does. It drives prices up to consumers. It raises prices. It locks out competitors. And it slows innovation.

So, this settlement stops the per-processor license.

Two, Microsoft used contracts of three to five years in an industry that was rapidly turning over. These extraordinarily long contracts made it very difficult for competitors to get in. The settlement we achieved today reduces contract lengths to one year, with one, one-year extension on the same terms and conditions which the computer manufacturer, in its sole option, can elect.

So, we have gone to one-year contracts, banning of per-processor.

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The third important feature of this settlement is abolishing minimum commitments. Microsoft's third way to lock up this market was to say to the computer makers who had to deal with it, We will give you a lower price if you estimate a large volume.

Nothing inherently wrong with that volume discounting. The problem is Microsoft quoted these low prices in conjunction with 100 percent minimum commitments -- i.e., you get that price only if you sign on the dotted line to pay us every cent regardless of whether you actually ship our product or not -- a take-or-pay contract. You pay no matter what.

Well, what does that mean?

Over a long-term contract, what that means is if the computer manufacturer's business has not gone quite as well as it thought, it is locked into Microsoft no matter what because it owes them this minimum commitment, even if it has not sold any machines. So, minimum commitments was a third way that Microsoft locked up this market, locked out competitors, and minimum commitments are abolished. They are zero in the settlement we achieved yesterday.

Finally, NDA's, non-disclosure agreements, were restrictive agreements which Microsoft, this winter, imposed in a manner that had never been done before in the software industry on certain applications writers. It would have --

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the NDA's challenged in this lawsuit and which Microsoft in the consent decree agrees to stop would have prevented applications writers from discussing Microsoft's operating systems for as long as three years after public disclosure of the operating system.

The effect could take those application writers, the software writers, forever out of business, in effect, except for Microsoft. It is another way to, in effect, lock up the market -- this time by locking up the important software applications writers.

Microsoft itself has said these NDA's were a mistake. It has agreed in this consent decree to never engage in such practices while this consent decree is in effect. And that also is a significant achievement of this settlement.

The last thing the settlement does is prohibit the use of lump-sum contracts, which would have been another way that Microsoft could have locked up this market. They had not needed to use them in the past because they had these other methods, but looking forward, our concern was that they might. And so the settlement also bans lump-sum contracts.

This settlement is everything we could have hoped for in a fully litigated case and possibly more. It is an historic achievement. I tell you, the charts we have

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prepared today were prepared for the lawsuit we planned to file yesterday. The lawsuit was not filed because of the settlement. We filed instead a complaint with a settlement. We are extremely proud of this result.

And the last point that the Attorney General noted, I think, deserves mention. This is the first time in history that the Competition Authorities of the European Commission and the Department of Justice have cooperated closely in investigating a major worldwide company, whose anti-competitive practices affected important markets both in Europe and the United States.

We took this under a letter -- the EC and I and the Department of Justice asked Microsoft last October to waive any confidentiality restrictions under our respective statutes so that we could work together and think about the case we were jointly -- not jointly to them -- but that we had each initiated. Microsoft agreed to that in writing.

We worked with the EC throughout the winter. We shared documents. We worked closely with them. We settled this together on terms that are substantially identical. We negotiated in Brussels the week of July 4th with Microsoft. We negotiated this week at the Department of Justice with EC officials here. And this also is a truly historic aspect of this settlement.

So, we are extremely proud of this. We are

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gratified that it concluded with a consent decree which achieves the really 100 percent results that any lawsuit could have achieved, and possibly more. And I want to especially note that this was the ultimate team effort. We had a group of lawyers, led by Sam Miller, who is here today, and Don Russell, who is on his way back from Brussels -- he has been in Brussels all week coordinating this hour by hour with the EC over there -- we have had extraordinary people on this case. We had a team of lawyers I would put against anybody, and I would feel for the other side.

And I want to simply state the names on the complaint we filed last night, because I am so proud to have been part of this group. The complaint was signed by Sam Miller, Don Russell, Joyce Bartu, Bob Zastrow, Dick Irvin, Peter Gray, Justin Dempsey, Gil O'Hana, and Larry Frankel. And there were more, and we had a paralegals. And this was an effort of a remarkable, extraordinary, incredible group of lawyers that I am so proud to have been part of. And I am proud of our partnership with the EC.

So, with that, what can I tell you about any questions you have?

QUESTION: What kind of room does this give Microsoft's competitors -- (inaudible) -- civil actions?

MS. BINGAMAN: That is up to the competitors. I do not actually believe this case changes the legal status

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of any competitor's suit, because, by settling, Microsoft has admitted to no facts. It has consented to entry of the decree that was filed with our complaint. But facts are not established of record by a settlement, the way they are by a litigated case to conclusion, with a jury trial.

So, my own horseback impression is that the action, as such, does not change the legal status. But, as far as private suits by competitors, it has enormous impact for competitors in opening the market. This is exactly what has been needed for years and years in the software industry. And I think, in the market-opening respects and for innovation, prices to consumers, it will have tremendous impact.

QUESTION: Why has this taken so long, and why is there no monetary penalty? And I notice it says that -- you say in the press release that it bans these practices in the future, but then says it only lasts six-and-a-half years.

MS. BINGAMAN: Okay. You have got several questions there. Number one, we have had this case for a little less than one year. The FTC had it for, I think, two-and-a-half or three years before that. As everyone knows, or a lot of people, the FTC deadlocked two to two. We took the case acting as a fifth commissioner. We have looked carefully at this case because it is an important case, and we wanted to understand it fully ourselves.

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So, I have no concerns whatsoever about a one-year action by the Justice Department that ends these practices.

There are no monetary penalties because they are not provided by any law and never have been. When the Justice Department settles a civil case, the Antitrust Division -- the antitrust laws do not provide for civil penalties, period.

We obtain adjunctive reliefs to open the market. Under the American legal system, private actions obtain any monetary damages, and that is just the way it is in all of our cases. They are no different.

You had a third aspect.

QUESTION: The length of time, you say --

MS. BINGAMAN: Oh, the six-and-a-half years. Our decrees normally last 10 years. We negotiated long and hard with Microsoft over the length of the decree. The EC's decrees last four-and-a-half years. We obtained immediate effect of this decree. That was a crucial aspect of the decree. And we believe we added, in effect, three to three-and-a-half years on the front end of the decree because the contract duration stops right now. The per-processor stops as of last night.

The illegal practices that had locked up the market are ended. And they do not have to wait for contracts now in effect to run out. And it was our belief

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that based on all of those facts, plus the EC's practice of four-and-a-half year decrees, that this was a fair balance under the circumstances.

Let me mention something. I neglected to thank -- and it was a major oversight on my part and I want to correct it -- Henry Kawati is sitting here, who worked long and hard on this case, he is an economist with our Economic Section; Rich Gilbert, who is head of that section, was in Brussels with me; and Mark Schecter, who killed himself on the case, along with Bob Lighten, but I want to thank Henry Kawati and Ken Hire and Rich Gilbert, because the economics aspect of this case, as you can imagine, was critical. We had outstanding outside economists who Henry worked with tirelessly for many, many months. And he was a critical part of it, as was Rich Gilbert and Ken. So, I wanted to say that.

QUESTION: Can you estimate how much these practices may have cost consumers over the years?

MS. BINGAMAN: We have not. Because we do not bring damage actions, we do not put efforts into trying to figure out monetary total impact. But I can, to illustrate, tell you this. If you were a consumer and wanted to buy a competing operating system, and despite Microsoft's practices, there have been, in fact, four major competitors in this market to Microsoft, who have clawed and grabbed and

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have managed to obtain some market share, if you bought one of those competing companies, and 20 percent of the American public does, and you were under a per-processor license, and many of these licenses, as we saw, are per-processor, you paid not just Microsoft anywhere from $15 to $50 for its operating system, you paid the competing price on top of that.

And so Microsoft, in effect, taxed every consumer who bought a competing operating system and bought it from a maker who had one of these per-processor contracts, or a similar one. And so it's not insignificant. We have not, as I said, made any effort to quantify it, but it is -- there are millions and tens of millions of PC's shipped every year, and it is a major amount of money.

We can try to come up with some numbers after the press conference. But with all the other things we have done, that has not -- our focus has been opening the market, truly, and obtaining the relief we needed.

QUESTION: To follow that up, do you have any estimate of how many computers were shipped under these agreements that would have been effected?

MS. BINGAMAN: I can come up with numbers on that. We have not tried to. It is in the tens of millions. There are 120 million total computers with Microsoft operating systems on them. Many, many were shipped with this -- under

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these kinds of practices. And it has been a major market problem for competitors, and has restricted choice for consumers.

Let me tell you why else this is so important to the American economy. We are about innovation and competition in this economy. That is what we are for. And Microsoft has its shot at the market. No problem. All we are saying is others should have their shot at the market, fair and square, a level playing field. That is the American way.

And they may have a better mousetrap. They may not. But what we are saying is people should get a chance to judge it fairly on quality and price and the other factors. And that is what this case is about. It levels the playing field, opens the door.

And if a competitor has a better product that can run computers faster, run them better, support better applications, build a base, cut into Microsoft's market share so that applications writers will write for it, that could have profound consequences for the American economy. What we are about is precisely that -- promoting competition, innovation, better products at cheaper prices, and letting the market take care of whatever happens.

We are not about driving the market; we are about letting the market operate freely.

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QUESTION: Had this settlement not been reached, what broader or further action could Microsoft have been subjected to? And, a second question is, had there been any serious consideration about splitting Microsoft into two?

MS. BINGAMAN: I cannot discuss our internal considerations as such. I can tell you that we looked at every possible legal theory and at all the facts throughout the course of a long, tough winter, that the legal team I mentioned went through. And it was our conclusion at the end of that that the case to be filed was the case we did file. We did not bargain off any case in exchange for a settlement. This was the case that was there after thousands of hours of work. And it needed to be brought, and it was brought.

And that is really as much as I think confidentiality permits me to talk about specifics.

QUESTION: Potentially, had this gone into litigation, what could we have seen perhaps in terms of time and cost?

MS. BINGAMAN: Had this been litigated, we hoped to conclude it within a year. We planned to file it in a district in which the dockets are not crowded and we could have obtained a quick resolution, because the markets need to be open. This needed to get done. But it would have been a minimum of a year at the very best. It undoubtedly

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would have been appealed. And the key point is, after all that, two to two-and-a-half years at best through appeal, we could not have achieved one thing more than we got in this settlement.

And, frankly, I am not sure we would have gotten as much. I do not know, because I do not know what a judge would have done. But this settlement is 100 percent of what we would have gotten with a lawsuit.

QUESTION: Can you tell us more about the EC cooperation, how and when was that initiated? And wasn't there a British investigation as well?

MS. BINGAMAN: No, there was no British investigation. It was the European Commission. It was a result, actually -- last September, I went to Europe for consultations, which are annual consultations with the EC that we have done for years, the Antitrust Division -- it's a mutual cooperative thing -- and Klaus Ailerman, the head of the Competition Directorate said to me, What are you doing about Microsoft, because we have a Microsoft case, too, you know, and I am very interested to talk to you about it?

And I looked at him and I said, Klaus, I do not think I can say a word to you about Microsoft. Everything I know is under confidential documents. I am forbidden from talking about it. I can't speak to you.

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And he said, Well, what a great pity, because we've got, as far as I can tell from press reports, the same case.

And I said, Well, it is a great pity.

And I came back to the United States -- that was the end of September -- and 10 days or two weeks later, it just hit me out of the blue one day, we should ask Microsoft to waive confidentiality so that we could cooperate and decide whether in fact there is a case and coordinate remedies.

And the coordination of remedies is really crucial for a company in Microsoft's position, which operates worldwide, literally, in -- I do not know -- tens of countries in the world. They need, for their own business reasons, to have the same contracting practices. It would be terribly disruptive -- and I called the EC. We asked Microsoft. Microsoft, for its own reasons, said that would actually -- they didn't have a problem. They waived confidentiality. And that is how it began last October, and it has continued since then.

QUESTION: How is the Justice Department going to monitor the new agreements, the new contracts that Microsoft will sign with its OEM's? And what guarantees are there that Microsoft isn't going to turn around and say, you know, if we cannot do the kinds of volume deals that we have done

in the past, we are going to charge 5, 10, 15 percent for the operating system than we have in the past?

MS. BINGAMAN: If they charge more for their operating system, the competitors are there, without question, with comparable products. And the market should take care of that. That is the whole idea of this settlement. The market should take care of it.

We are allowed, in the monitoring provisions of this decree, which you should have, to request documents from Microsoft, to inspect their contracts, to talk to their people. We are further -- the decree specifically provides we can cooperate with the EC in this monitoring, so we will continue our cooperation and close work with them.

And we are watching. We are very much on the case.

QUESTION: A question about the per-processor issue. From your presentation it wasn't entirely clear to me, but it sounds as though Microsoft main pressure on computer companies was that they got -- they would offer huge, huge discounts to the companies that would accept a per-processor kind of agreement. That being the case, it seems to me that, on one level, the sin is that Microsoft is simply charging too little for the operating system.

And, to follow up on that, to follow up on that, it seems to me that the marketplace situation may not be a

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whole lot different, because Microsoft can continue, it seems to me, to charge that same low, low price.

MS. BINGAMAN: Ed, you been talking to Microsoft? That is their line. They are not telling you right. If that was so easy, why did they have per-processor licenses? They are the only company in the industry that did. Why did they have three- to five-year contracts? They are the only company that in the industry that did. Why did they have 100 percent minimum commitments? They are the only company in the industry that enforced that.

If this was so simple, why were they locking up the market with practices which every computer manufacturer despised and which the competitors despised and which Microsoft hung tough through four years of Government investigation to hang on to? Do you think that is because it did not matter to them? That is the story they are putting out.

You are darned right they are trying to spin it their way. That is not right. And let me tell you. Volume discounts, of course they can volume discount. No question. There is nothing wrong with volume discounting. It is done in all kinds of industries, in all kinds of situations. And the decree does not address volume discounts as such.

The problem with Microsoft's practices is that they were using volume discounts to lock up the market with

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per-processor contracts and 100 percent minimum commitments, which then were like iron. You could not get out of. You could not escape.

To get those low prices, you had to sell your soul and never leave Microsoft. And that is what this decree changes.

Microsoft can compete on the basis of low price. We have no problem with that. That is good. We want that. What we do not want is competing on the basis of low price and then using that to impose contract terms which exclude every other competitor.

And, Ed, the reason they were able to do that is because of their monopoly position in this market. I mean, this is an important question you are asking, because they are going to try to claim that this decree changes nothing. That is wrong. That is a lie. And people need to understand that.

Because volume discounting, in and of itself, is not a problem. There are ways volume discounting can be abused. I have discussed those ways with Microsoft and Bill Gates. We are watching. We are watching closely what they do with volume discounts. They know it. I know it. And we are going to see what happens here.

But volume discounting, in and of itself, is not a problem. There can be problems in how you structure them,

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whether you force -- it's a technical discussion. But, in any event, believe me, they did not hang tough on this for so long, right to the brink of a joint lawsuit by the U.S. and the EC yesterday because these practices were so harmless and meaningless and so forth. But I can see why they say it.

(Laughter.)

QUESTION: Is there going to be an immediate effect that we will notice for consumers?

MS. BINGAMAN: I hope consumers, within a short period of time, will have more choice of operating systems, genuine choice, more innovation in computers. Certainly, the prices will lower for consumers who already buy competing operating systems. Any of these companies in the market right now can now sell just for their price, not for this double tax that Microsoft has gotten.

So, I think prices will immediately lower, and I think, over the medium to long range, this will, I hope and believe, have profound market opening impacts. It will help innovation, help the competition give us better products. You may be using a different operating system three years from now because of this -- maybe. And if you are, great. If you still want whatever, great.

But the point is you should have a choice. Everyone should have a choice. And the companies that

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compete with Microsoft should be able to offer you that choice fairly and evenly.

VOICE: Thank you.

QUESTION: Microsoft's competitors in applications have complained about the access that they have had to all kinds of information about the operating system code. Did the Justice Department not find that Microsoft had unfairly restricted applications developers to various aspects of the software?

MS. BINGAMAN: The nondisclosure agreement, the so-called NDA part of the case, focused on nondisclosure agreements required -- are you talking about something else?

QUESTION: I mean, certainly the NDA has been part of it, but other companies --

MS. BINGAMAN: The so-called interoperability?

QUESTION: Yes, yes, hidden calls and all of the charges that have been raised over the past few --

MS. BINGAMAN: I can tell you we have looked closely at all aspects of this case. We have examined it closely. And I think all that I can say, because of the strictures of confidentiality and the law, is that we have looked at it and this is the case we chose to bring because this is the case that is there and needed to be brought. And I think that is all I should say.

VOICE: Okay. Thank you.

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VOICE: Thank you.

MS. BINGAMAN: Okay. Thank you.

VOICE: Thank you very much.

(End of proceedings.)

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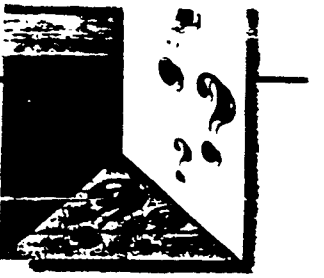
TAB 13

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK



Microsoft's Grip on Software Tightened by Antitrust Deal

FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia
Ex 13
94-1564SS

Andrew Schulman

On Friday, July 15, Microsoft signed a consent decree with the Antitrust Division of the U.S. Department of Justice (DoJ), ending a four-year investigation by U.S. antimonopoly agencies—first the Federal Trade Commission (FTC) and later the DoJ—into Microsoft's trade practices. At the same time, Microsoft signed a nearly identical settlement with the Directorate-General for Competition of the European Commission. The judgment lasts for six and a half years in the U.S., four and a half in Europe.

Microsoft agreed to immediately abandon several arrangements for licensing the MS-DOS and Windows operating systems to PC hardware vendors. It also agreed to halt some "unnecessarily restrictive" clauses in its nondisclosure agreements (NDAs) for the forthcoming "Chicago" version of Windows. The consent decree explicitly excludes Windows NT.

The consent decree is still subject to a 60-day public review. The full text of the DoJ's July 15 complaint against Microsoft for violations of sections 1 and 2 of the Sherman antitrust act, the U.S. District Court final judgment in *U.S. v. Microsoft*, and the "Stipulation" signed by the DoJ and Microsoft consenting to the final judgment, are available via Internet Gopher from the DoJ's Gopher server.

Who Won?

The consent decree was first viewed as a victory for the DoJ and Microsoft's competitors. The *New York Times* (July 17) carried the front-page headline, "Microsoft's Grip on Software Loosened by Antitrust Deal," and crowed that "the pact could reshape the world of computing.... The accord could undermine Microsoft's near total control of the market for operating systems." The *Boston Globe*'s headline was equally enthusiastic: "Microsoft Accord to Create Competition in US, Europe."

Indeed, the consent decree sounds at first as if it should cramp Microsoft's style, and lead to more competition in PC software. For years, Microsoft has provided PC hardware manufacturers (original equipment manufacturers, or OEMs) with per-processor licenses to MS-DOS and Windows, in which the vendor pays Microsoft based on the number of machines it think it will ship, rather than the number of copies of DOS or Windows it actually uses. In 1993, such per-processor agreements accounted for about 60 percent of MS-DOS OEM sales, and 43 percent of Windows OEM sales.

According to the DoJ, "Microsoft's per processor contracts penalize OEMs, during the life of the contract, for installing a non-Microsoft operating system. OEMs that have signed per processor contracts with Microsoft are deterred from using competitive alternatives to Microsoft operating systems." The consent decree put an immediate stop to this practice, leading to the hope that non-Microsoft operating systems would now have a shot at the desktop.

But the morning after, nearly everyone realized that, in fact, *U.S. v. Microsoft* is a victory for Microsoft. Directly contradicting the previous day's headline, a *New York Times* (July 18) news analysis by John Markoff spoke of "Microsoft's Barely Limited Future": "Rather than reining in the Microsoft Corporation, the consent decree... frees the company to define the computer industry's ground rules through the rest of the decade." The *Wall Street Journal* had a similar take: "A Winning Deal: Microsoft Will Remain Dominant Despite Pact In Antitrust Dispute." According to the *Journal*, Gates "has just won big again, this time by letting the Justice Department rake in a small pot while his company retains the power to dominate the nation's desktops."

In the first day of trading after the settlement, Wall Street made its statement on the consent decree: Microsoft stock rose $1.87, to $50.50. Rick Sherlund, an analyst for Goldman Sachs, stated that with the settlement, Microsoft "should dominate the market for desktop software for the next 10 years." Another frequently quoted analyst, Richard Shaffer, announced that "The operating system wars are over—Microsoft is the winner.... Microsoft is the Standard Oil of its day."

But how could a *ban* on an important Microsoft trade practice be viewed as cementing Microsoft's hold on the industry?

First, to achieve the DoJ's goals, the change from per-processor to per-copy licensing probably comes about four years too late. Despite some brave words from IBM and Novell after the consent decree, it seems unlikely that the change will lead to a larger presence for OS/2 or Novell DOS. As a spokesman for Compaq (which *already* offers OS/2 to its customers) noted, "Windows is the standard—not much will change."

Nor does the consent decree address the key questions about Microsoft's role in the PC software industry. Companies such as Lotus and Borland that compete with Microsoft in application areas such as word processors and spreadsheets have long asserted that Microsoft "leverages" its control of the operating system to benefit its applications—particularly the Microsoft Office "suite," which bundles together Microsoft Word, Excel, Access, Mail, and PowerPoint—at the expense of applications and suites from other vendors.

Grabbing the Whole Pie

More and more, Microsoft's applications seem like part of the operating system. Many PCs today come, not only with MS-DOS and Windows preinstalled on the hard disk, but also with Microsoft Office. The forthcoming "Chicago" release of Windows will include numerous features once considered the province of third-party applications developers. Microsoft not only has a near-monopoly on the operating system, but is constantly expanding the definition of what belongs in the operating system.

Some commentators see these increasing ties, and the DoJ's apparent refusal to touch them, as a *good* thing. For example, Steward Alsop was quoted in the *New York Times* (July 18) as saying, "If you really care about improving the personal computer, you want Microsoft to take over all the pieces of the pie."

There is a certain logic in this. For example, one reason the Apple Macintosh was for so long far easier to use than a PC was that Apple had a closed architecture and completely dominated the market, guaranteeing that almost everything came from a single vendor. Monopoly has some clear benefits. In certain situations, such as public utilities, monopoly may be the only viable industry structure, leading to a so-called "natural monopoly."

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Interestingly, the superb biography *Gates*, by Stephen Manes and Paul Andrews (Doubleday, 1993), quotes a 1981 statement by Microsoft chairman Bill Gates where he noted that volume and standards in PC software can lead to a "natural monopoly." But companies in such a favored position usually are forced to make an important trade-off: so-called natural monopolies are generally regulated, are prevented from expanding their monopoly into new areas, and so on.

Microsoft continues to deny that it monopolizes the PC software industry

Microsoft already has MS-DOS installed on about 120 million PCs in the world, and Windows on about 50 million. With the DoJ consent decree, Microsoft can move even more rapidly toward its goal of becoming an unregulated, nonpublic utility providing total, one-stop shopping for all your software needs.

Exposing Microsoft's Monopoly

Microsoft continues to deny that it monopolizes the PC software industry. Nor has it admitted to any guilt by consenting to the court's final judgment. The consent is explicitly "without trial or adjudication of any issue of fact or law; and without this Final Judgment constituting any evidence or admission by any party with respect to any issue of fact or law."

Nonetheless, the PC software industry has been treated to some puzzling denunciations of Microsoft trade practices from high government officials. After the signing of the consent decree, U.S. Attorney General Janet Reno said, "Microsoft's unfair contracting practices have denied other U.S. companies a fair chance to compete, deprived consumers of an effective choice among competing PC operating systems, and slowed innovation."

The Assistant Attorney General for Antitrust, Anne Bingaman, noted that "Microsoft is an American success story but there is no excuse for any company to try to cement its success through unlawful means, as Microsoft has done with its contracting practices."

"Microsoft has used its monopoly power, in effect, to levy a 'tax' on PC manufacturers who would otherwise like to offer an alternative system," said Bingaman. "As a result, the ability of rival operating systems to compete has been impeded, innovation has been slowed and consumer choices have been limited." According to a DoJ press release, Bingaman noted that Microsoft has maintained the price of its operating systems even while the price of other components has fallen dramatically, and that, since 1988, Microsoft's share of the market has never dropped below 70 percent.

The Road Not Taken

No matter what else it says, the fact remains that the consent decree addresses only a narrow issue: OEM sales represent less than 25 percent of Microsoft revenue.

The complaint notes that "At least 50,000 applications now run on MS-DOS and over 5000 have been written to run on Windows. Microsoft sells a variety of its own very successful and profitable applications." But that is all it has to say about applications!

The complaint also notes that "All versions of Windows released to date require the presence of an underlying operating system, either MS-DOS or a close substitute," but says nothing about alleged tying arrangements between Windows and MS-DOS (see "Examining the Windows AARD Detection Code" *DDJ*, September 1993).

Similarly, the complaint mentions "critical information about the interfaces in the operating system that connect with applications—information which the ISVs need to write applications that run on the operating system"—yet doesn't address the issue of whether or not Microsoft unfairly withholds some critical information, trying to give its developers exclusive use of undocumented interfaces.

Likewise, the DoJ was well aware of, and quite interested in, the issues surrounding Microsoft's ownership of the vastly important DOS and Windows standards. Yet none of this is addressed in the consent decree, which ends up looking quite similar to what Microsoft probably could have got from the FTC a year ago. Even Bill Gates, who was apparently in the habit of denouncing even the mildest FTC and DoJ questions as "communistic" and "socialistic," had to admit that the final settlement was no big deal saying, after years of investigation, that "this is what they came up with" (*Wall Street Journal*, July 18).

Why So Little?

Why did the DoJ settle for so little? How could they seemingly ignore the entreaties of so many PC software vendors?

One theory is that the Clinton administration views Microsoft as a "national treasure," and put pressure on DoJ to leave Microsoft alone. The press made much of a May 25 meeting between Bill Gates and Clinton's chief economic advisor, Robert Rubin. The date is significant because just one week later, Gates testified under oath before the DoJ. According to one anonymous source, Gates pointed out to Rubin that Microsoft is responsible for a substantial portion of U.S. software exports (*Information Week*, June 27).

(continued from page 144)

Frankly, I don't buy Clinton administration pressure as an explanation for the DoJ's limited settlement. Microsoft may be highly visible, but it simply isn't that important to the U.S. economy, at least when compared to companies such as IBM or GM that make tangible goods. Microsoft, remember, produces software. While software is a crucial part of the modern world economy, consider that even "giant" Microsoft has only about 15,000 employees and that its quarterly sales are about $1.25 billion, compared to $13.3 billion for IBM, or even $2.5 billion for Apple.

What makes Microsoft different is its incredibly low costs. This is very nice for Microsoft, but it's hard to see what it does for the U.S. economy, especially when 45 percent of Microsoft's stock is owned by insiders. Had it wanted, the DoJ could have made a moderately plausible case to the American public that Microsoft, far from being a "national treasure," is simply a grossly profitable monopolist, with few employees and few stockholders, that gives back little to the public.

Another explanation is that DoJ feared a repeat of *U.S. v. IBM*, which dragged on for 13 years, only to be dropped as "without foundation." While you could easily imagine lawyers for the DoJ not wanting to stake their careers on a losing battle, you have to wonder whether *U.S. v. IBM* was such a complete washout, after all. Even though the case was eventually dropped, for years it had a serious effect on IBM. You could even argue that it was this supposedly unsuccessful case that caused IBM to unbundle software from hardware, thereby opening the way to an independent software market, making room for software upstarts, including a company called Microsoft. In many cases, Microsoft was a beneficiary of *U.S. v. IBM*, and "the next Microsoft" could have been a beneficiary of a *U.S. v. Microsoft* case.

Ultimately, I think that the DoJ didn't push for more against Microsoft for the very simple reason that they felt they couldn't win anything else. Responding to widespread criticism of the settlement as a DoJ sell-out, Anne Bingaman protests, "folks, we looked at every aspect of this. We brought the case that was there to bring." According to the DoJ, the Microsoft settlement was "everything we could have hoped for in a fully litigated case, and possibly more."

This is probably true. Law, like politics, is an "art of the possible." While the

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	Market Share (Percent)		
	Operating Systems	Word Processors	Spreadsheets
Microsoft	66	47	52
Novell/WordPerfect	14	35	—
Lotus	—	3	37
IBM	17	—	—
Apple	2	—	—
Borland	—	—	6

Table 1: *Application-software market shares.*

(continued from page 146)
settlement gives the Microsoft steamroller the green light, at the same time it's hard to see what the DoJ could have done differently. The DoJ's job is to enforce the antitrust laws, not to make industries more competitive — and the two are not the same.

What all this means is that those Microsoft practices studied by the DoJ, but not covered in the settlement, are either not illegal, or would be too difficult to prove illegal.

Where To Now?

While there might be some private antitrust action from Novell, Lotus, or Borland, and while the terms of the settlement are subject to public review, Microsoft must be feeling emboldened by the limited scope of the consent decree. Microsoft should be able to go full-steam ahead with its plans to greatly expand the operating system's dimensions in Chicago. Microsoft Office will increasingly seem like an essential part of Windows. With policies such as its new, heavy requirements for using the "Windows Compatible" logo (see "How to Adapt an App for Chicago: Requirements for the New Windows Logo," *Microsoft Developer Network News*, July 1994), Microsoft is raising the Windows development bar ever higher.

The PC-software industry is rapidly headed in the same direction as many other technology-based industries before it: rapid consolidation to a handful of vendors. There once were hundreds of U.S. car manufacturers; now there are just a few. With Novell's acquisition of WordPerfect and parts of the Borland product line, with Symantec's acquisition of Central Point, and Microsoft's purchasing a minority share in Stac Electronics, we are already seeing the same (probably inevitable) process occurring in software. As Table 1 shows, market shares reflect an already highly concentrated industry.

More and more, Microsoft's applications seem like part of the operating system

On most scales, Microsoft is about twice the size of its two nearest competitors combined. Lotus had 4450 employees and Novell also had 4450; Microsoft has 14,450. In 1993, Lotus sales were $981 million and Novell sales were $1.123 billion; Microsoft sales were $3.753 billion.

Given that the DoJ could apparently do very little about this increasing concentration in the software industry, what are software developers and vendors to do?

It is probably stating the obvious, but there is little point in trying to compete with Microsoft over productivity apps and office suites. These are rapidly becoming a quasi part of Windows itself, and even Novell and Lotus probably have little chance in this area. Microsoft Office is everywhere and everything. Perhaps there is still some room in databases, desktop publishing, and personal-finance software.

As always, another interesting area is plugging holes in Microsoft's own offerings: add-ins to Microsoft Office, remedying the inevitable temporary problems in Chicago, and so on.

The best bet is to find areas where Microsoft doesn't have a product, and where there is a chance of a several-year window of opportunity before it does have a product. On the other hand, the only market I've ever heard of that Microsoft *didn't* want to get into was pornographic screen savers and related multimedia titles. As one company employee told me, "We looked carefully at adult software, and decided to leave that money on the table."

DDJ

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12 ON READER SERVICE CARD

MTC-00030631_0444

TAB 14

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

The Economist

FEBRUARY 27TH–MARCH 5TH 1993

AIR DROP ON BOSNIA pages 16 and 51

FALLIBLE JAPANESE FIRMS pages 17 and 74

AFTER MULRONEY page 41

WITHIN THE WHIRLWIND after page 58
A survey of the computer industry

Trade's new diplomats

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Exh. 14 94-1564SS

MTC-00030631_0446

THE COMPUTER INDUSTRY

Reboot system and start again

Technological change is sweeping away the established computer industry. Firms are scrambling to find their place in the new industry that will replace the old. But even for those that survive, the turmoil will continue. David Manasian reports

FOR three decades the computer industry seemed to epitomise the marriage of technological wizardry and business acumen. Led by IBM, the industry masterfully exploited a pace of technological change that would have left managers in most other industries gasping. It grew through boom and bust, and revolutionised the way nearly all other businesses worked. Best of all, it consistently made enormous profits.

Computer executives saw themselves as both innovators and adventurers. Some pioneered new ways to manage armies of highly educated, independently minded employees. A few left the security and prestige of a corporate career, or went straight from the university classroom, to start companies from scratch. Naturally some computer firms failed. But the industry as a whole was largely immune to the travails that periodically beset more mundane businesses. For many people, computers were the quintessential industry of tomorrow.

Tomorrow has arrived and it is not a pretty sight. For the past two years the computer industry has been in turmoil: plummeting profits, flat sales, tens of thousands of jobs lost, vicious price wars. The industry's reversal of fortune has been so abrupt that it has left many of its leading companies floundering.

IBM, the biggest computer maker and long one of the most successful companies in the world, lost $4.9 billion in 1992, one of the biggest corporate losses in history. In January John Akers, its boss, resigned. Last year the company shed 40,000 of its 340,000 employees in an effort to control costs (which still look hopelessly bloated). Its stockmarket value is now about the same as Microsoft, a firm which employs only 12,000 people. And the once-mighty Big Blue is not alone. DEC, the world's second-biggest computer firm, ousted its founder and chairman in 1992 and lost a whopping $2.8 billion. Olivetti, Siemens-Nixdorf, Groupe Bull, Fujitsu, Hitachi and NEC have all seen profits collapse over the past two years. Wang, a high flier until the early 1980s, ended up in a bankruptcy court.

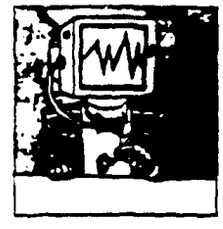
Clearly computers are no longer recession-proof. But global recession is not the only, or even the primary, cause for the industry's recent tribulations. Recession has simply accelerated changes that have been reshaping the industry anyway. Until the mid-1980s the computer business was dominated by a handful of large firms—foremost among them IBM—whose marketing and technological prowess let them educate, reassure and control the corporate customers who bought most computers. Smaller companies often introduced the latest technology to the market; but usually their innovations were not widely accepted until they got the imprimatur of Big Blue. These smaller firms seldom posed much of a threat.

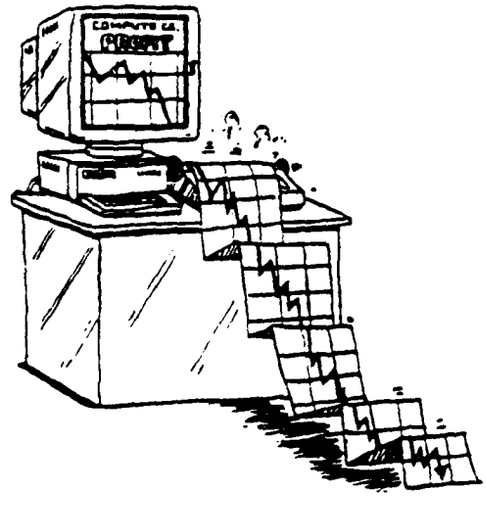
The invention of the personal computer (PC) in the late 1970s brought in a motley collection of brash, new firms. At first the growing popularity of PCs had little effect on the fortunes of the industry's leading firms. Indeed, IBM itself became the world's biggest manufacturer of PCs, and its marketing clout helped their sales to soar. For 20 years IBM had skilfully coped with technological advances that appeared to be far more radical, or disruptive, than the personal computer. Few people inside or outside the company thought that these relatively tiny and rather simple machines were much of a threat to IBM's hegemony or to the stability of the industry as a whole.

Getting personal

They were spectacularly wrong. In the past few years, personal computers and the microprocessor chips on which they are based have upturned the economics of the business. This has happened so quickly that many computer executives are bewildered. Their industry has become one of confusing extremes. In any large industry the fortunes of different firms will vary. But in today's computer industry the differences are stark.

While many computer firms sacked thousands of workers and lost huge amounts of money last year, others thrived despite price wars and recession. On the day in August 1992 that Wang filed for chapter-11 bankruptcy, Dell, a personal-computer maker, reported quarterly sales up 129% and net profits up 77%. In 1992 some companies, such as Apple and Compaq, which looked doomed because of the price wars ravaging the PC market, staged stunning comebacks (though they too had to cut jobs and other costs). Price-cutting spread from hardware to software. And yet profits at Microsoft, the world's biggest personal-computer software company, leapt 53%. The computer business still boasts many of the world's fastest-growing and most profitable firms. But it now has some of the





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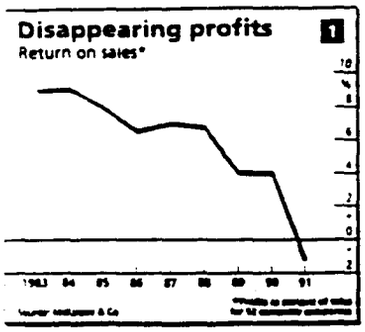
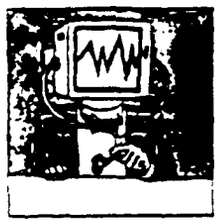


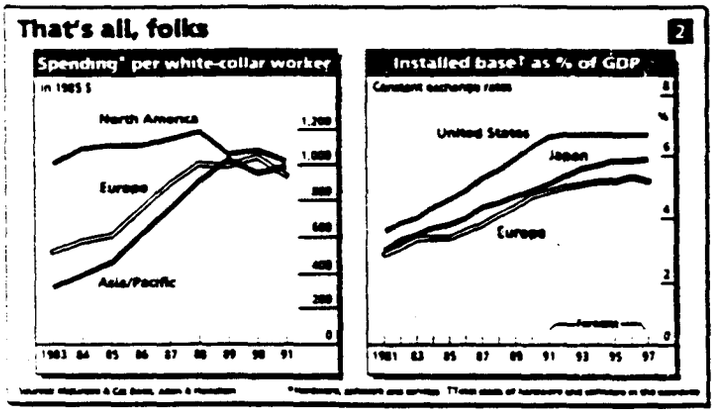


world's biggest loss-makers too.

Today's industry offers other remarkable contrasts. Despite the fact that its overall profitability has fallen so sharply (see chart 1), hordes of new competitors continue to enter almost every part of it. And far from slowing the pace of innovation, as might be expected, hard times seem to have quickened it. An unprecedented number of new products came to market last year. This stream is about to become a flood. With chip technology improving faster than ever, a plethora of new products will reach the market over the next few years: pen-based PCs, hand-held computing and communication devices, ever more powerful versions of today's desktop and notebook computers, sophisticated network and database software, cheaper and fancier supercomputers.

Moreover, a growing part of the computer market shows many of the classic characteristics of a commodity business: there are few discernible differences between products except price, low barriers to entry and razor-thin profit margins. This is a novelty for such a high-tech, inventive business. The large amount of intellectual property contained in computer products, and their complexity, ought to make it easy for companies to keep out new rivals, differentiate their products and command fat margins. Instead, even in many esoteric niches of the industry, growing competition is eroding margins.

Equally remarkable is the web of collaborative deals that spans the industry. As competition has become fiercer, the number of joint ventures, alliances and marketing agreements has multiplied rapidly, although this has done nothing to soothe the growing ferocity of competition. Nearly every firm, whether small or large, now has a variety of ties with dozens of others. Confusingly, many alliances seem designed to compete with other alliances containing some of the same firms, as companies place multiple bets on new technologies or market trends. Although these agreements are often between companies with complementary products, many are between once-bitter rivals, such as Apple and IBM, who stress that their collaboration does not rule out tough competition between them now or in the future.



Perhaps one of the most puzzling things about the computer industry is that, for all its vitality, its glory days of high growth and gushing profits are probably over. In a recent report on the industry, McKinsey, a management-consulting firm, predicts that the industry's sales will grow by 6% or less a year—scarcely more than the nominal growth rate for the world economy as a whole. "Just surviving will be a struggle and even many of today's healthy companies could become extinct," says Michael Nevens, one of the report's authors. Others agree with this gloomy assessment. IBM predicts that software and services will grow at some 11-13% a year between now and 1997; but sales of hardware will lag well behind economic growth.

Evangelical fervour

One reason is that the cost of computing power continues to drop by 30% or more a year, because of advances in chip technology that show no signs of slowing. This inexorable improvement has now begun to outstrip the demand for more computing power from customers. Another reason for slow growth is that, with more than $300 billion in sales, the computer industry is now so large that it probably cannot expect to capture a much bigger chunk of corporate or consumer spending. Most businesses, laboratories and classrooms already have some type of computer. Many are crammed with them. Because of the rocketing popularity of notebook and laptop computers, so are many briefcases.

A barrage of new products will be needed just to keep spending at current levels. In fact, the amount spent on computers per white-collar worker (the biggest users of computers) has been flat in America since 1983, and has recently levelled off in Europe and Asia as well (see chart 2). The total stock of hardware and software in developed economies is also set to level off in the next few years, according to many forecasters.

Even if the industry must learn to live with humdrum growth, there will be nothing dull about the computer business itself. This survey will spend little time on the myriad ways computers are used or how they are changing lives. Instead it will try to examine the peculiar economics of computers, and to make sense of the blizzard of news the industry generates every day. Why does it present so many conundrums? And why has no shakeout yet ended what, compared with most other large industries, looks like intolerable instability?

The growing number of competitors and the pace of technological change are raising the level of uncertainty, for both computer firms and their customers. As a result, the bosses of most computer companies are no longer the smug technologists or buttoned-down managers of a decade ago. They are preachers fervently trying to sway customers, suppliers, investors, employees—and often themselves—with their vision of the future. One of the industry's favourite verbs is to "evangelicise." This is an odd choice for sober-suited managers carefully investing billions of dollars. But it is all too appropriate to the opportunists or true believers now best equipped to survive in the computer business.

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Personal best

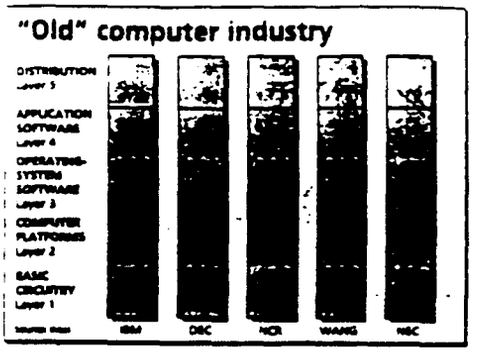
TO UNDERSTAND how drastically those little personal computers have changed the industry, and why they have suddenly left it in such a fragmented state, a little history is needed. Until the late 1970s, nearly all computers were large machines used to grind through mind-numbing calculations and routine book-keeping chores. Computers were especially useful in making the administration of large organisations more efficient. Outside laboratories, they were bought in the greatest numbers by large companies, which could afford to pay their hefty prices and to employ the professional programmers and technicians needed to keep the temperamental machines from breaking down.

Machines came in various sizes, the two broadest categories being mainframes and minicomputers. Both types could have several users at once, who sat at terminals to put data into the machines or to take it out. Mainframes soon stood at the heart of most of the world's biggest companies. Smaller and less expensive (though still quite pricey) minicomputers were often used by the divisions of the same firms, or by medium-sized firms which could not justify spending enough to buy a mainframe.

IBM bestrode the industry, accounting in 1980 for 38% of the industry's revenues and 60% of its profits. Even if IBM had not become such a dominant firm, a small group of large firms would probably have controlled the industry in any case. There are two reasons for believing this. First, computers were the most complicated machines ever made. In fact, they were so complicated that even individual machines were called "systems". And second, though the industry was large in revenue terms, relatively few machines were sold each year. As recently as 1980, fewer than 10,000 mainframes and 105,000 minicomputers were sold worldwide each year. Such volumes are significant for suppliers of capital equipment, but they are minuscule compared with those of the car or other consumer industries. Customers were reluctant to buy these cranky machines from anyone but large, established suppliers. So newcomers had a hard time breaking into the business.

The complexity of computers produced another crucial characteristic of the industry: it virtually ensured that computer makers would opt for vertical integration—that is, to make most of the parts of the machines themselves, with the software to run them, rather than buying parts from outside suppliers, and to do most of their own marketing, distribution, sales and service as well. A few of the smaller firms could not manage this. They either specialised in supplying pieces of equipment, such as terminals, tape drives or printers, which were attached to computers, or they bought what they could from outside suppliers. This put them at a huge disadvantage, for the simple reason that there were so few independent suppliers for the many components needed to build a computer. So the big computer firms built their own machines from the ground up.

The resulting structure of the industry looked



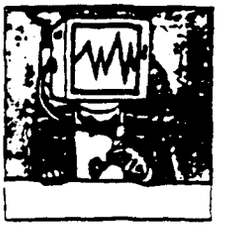
Days of yore, when IBM was king

something like the diagram above. Customers cared little about the various layers identified in this diagram, because they almost always bought all the layers in a single package from one supplier. It is useful to pause here to define these terms, because they will loom large later on.

Basic circuitry refers to the thousands of wires, transistors and other electronic bits which were in all computers. In the 1970s and 1980s most of these bits and bobs were gradually replaced with integrated circuits printed onto small pieces of silicon—ie, microchips. This allowed some specialised chip firms, such as Intel, Motorola and Texas Instruments, to become parts suppliers to computer makers. But many of the biggest computer makers, most notably IBM and Japan's Fujitsu, NEC and Hitachi, made their own chips.

Computer platforms refers to the assembled machines. These were useless without **operating-system software**, the programs needed to make the machines do anything but hum. Once the operating system enabled the machine to respond to various commands, **application software** told the machine what to do: compile the payroll, store data, solve abstruse equations, perform word-processing or whatever. Several applications usually ran on the same computer. As the diagram shows, firms did most of their own **distribution**, although some machines were sold through computer-leasing firms or "systems integrators".

One more point must be made: all computer makers used "proprietary" standards both to build their hardware and write their software. Except for a few firms which tried to mimic IBM's standards, no firm's software worked with any other firm's software, or ran on any other firm's machine. This locked customers into a single computer supplier. As a customer's investment in computers grew, the more dependent on his supplier he became. The cost of scrapping all of a firm's existing hardware or application software (which big firms sometimes wrote themselves) to switch to another supplier became prohibitive. Occasionally a customer became restless, especially if a supplier was charging too much, fell too far behind the rest of the industry technologically or failed to service his machines properly. A few small, specialised firms sprang up to engineer so-called "gateways", bits of hardware



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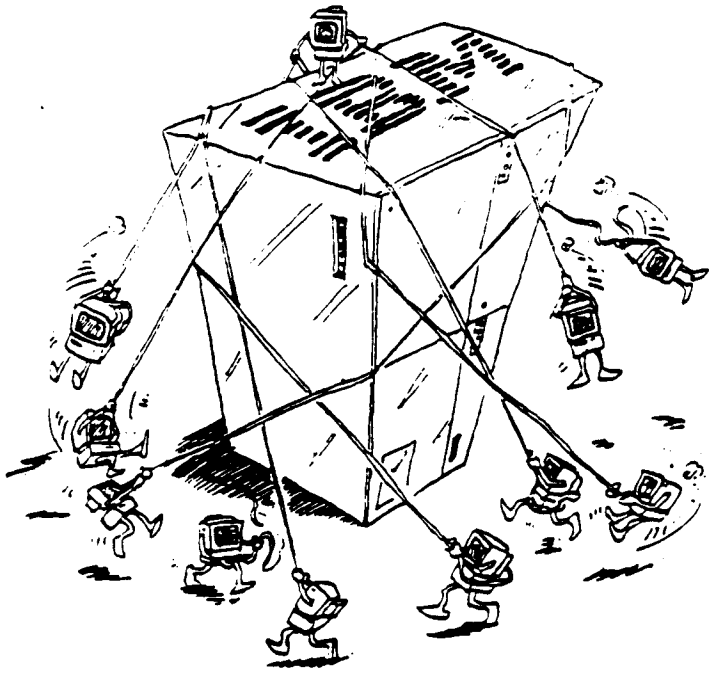


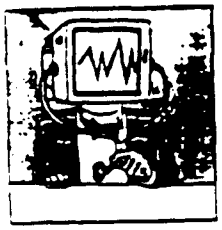
and software that would allow machines from different companies to work together.

For the most part, though, customers had to commit the bulk of their spending on computers to a single supplier. The safest thing to do for anyone who had to make this purchasing decision—in big companies usually the data-processing manager—was to buy from the biggest supplier, no matter what the cost. And that, by a long way, was IBM.

Chips with everything

From its inception, the personal-computer market assumed a different pattern from the established industry. PCs became possible only because chip manufacturers had managed to cram a simple version of a computer's central processing unit, the circuits that did most of the actual computing, on to a single chip. Appropriately, this was called a microprocessor. Around a single microprocessor, a small, cheap machine could be assembled from readily available parts used to supply the consumer-electronics industry. So most personal-computer makers were never vertically integrated. Separate groups of firms supplied parts, fully assembled machines (platforms), operating-system software and application software.

Personal computers were primitive compared with mainframes and minicomputers. But they could perform simple tasks such as word processing, keeping mailing lists or playing games, and they proved surprisingly popular. To grab some of the revenue from this small but burgeoning market, IBM launched its own PC in 1981. Because it wanted to do this quickly, it assembled its machine from off-the-shelf components made by firms which were also supplying other PC makers. It arranged to buy the two most important parts of the machine—the microprocessor and the operating-system software—from (respectively) Intel and a small Seattle-based company called Microsoft.

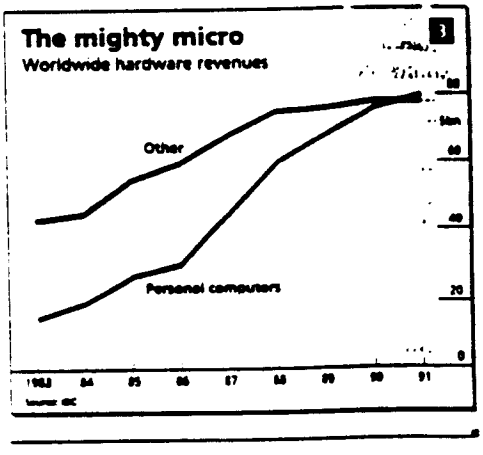


With IBM's backing, personal-computer sales skyrocketed. At first this was great news for IBM, which had the lion's share of sales and considered PC revenues simply a welcome supplement to its mainstream computer business. Thousands of small software companies began writing application programs for IBM's machines, boosting demand for them still further.

Still, from several points of view IBM had badly miscalculated. Buying the key parts of its machines from Intel and Microsoft, without demanding any kind of exclusive deal, effectively left control of the technical standards in these companies' hands. Scores of other firms, many of them new ones such as Compaq, quickly learnt to "clone" copies of IBM's machines using Intel chips and Microsoft's MS-DOS operating system. Their machines also ran all the software written for IBM's machines. To the user, therefore, there was no real difference between them. Users began buying the machines primarily on the basis of price. As demand for the machines took off (see chart 3), hundreds of small, low-cost producers jumped into the market. Prices began to collapse, even while the growing power of microprocessors rapidly boosted the capabilities of PCs.

Until the mid-1980s, many PCs were sold to customers—individuals, schools, small businesses, professional firms—who would never have been reached by IBM or other established computer makers. But when big corporate customers began tying the most powerful PCs together into networks as alternatives to minicomputers and mainframes, IBM became alarmed. In 1987 it belatedly tried to gain control of the personal-computer market with new models containing a patented technology called Microchannel, which rivals could not copy and which made IBM's machines incompatible with everyone else's. Competitors aptly dubbed these machines "clone killers". But by then it was too late. The PC market had slipped beyond IBM's grasp and the Microchannel machines flopped. Big Blue, like any other manufacturer, had to make its machines fit the industry's standards. Those were now set by millions of personal-computer users and owned by Intel and Microsoft.

In only a few years, before IBM or the other established computer makers had realised what was happening, an entirely new computer industry had grown up next to the old one.



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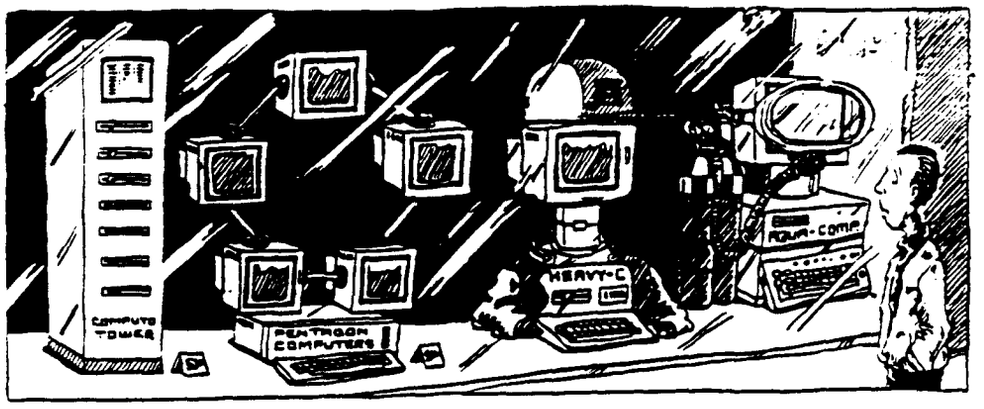
Harsh new world



THE companies which made a comfortable living for so long in the old computer industry face a challenge rather like switching from making battleships to rowing-boats in just a few years. Almost every defining feature of the old industry has been reversed in the new one. Instead of selling thousands of expensive machines to an easily identifiable set of corporate and institutional customers, the new industry sells tens of millions of cheap machines each year to individuals, businesses of any size and shape, and every type of organisation imaginable. Unlike mainframes or minicomputers, personal computers need little maintenance. And most of their software can be bought off-the-shelf, like a can of beans, rather than custom-designed for each user by teams of expert programmers. As a result, even in large corporations the computer-purchasing decisions are now made by hundreds of people with little technical knowledge, instead of just one or two computer nerds.

Instead of the propietary hardware and operating-system software of the old industry, "open" standards now prevail. These permit the products of a growing number of computer firms to work together, which has opened the door to thousands of new firms that now compete at every link of the "value chain", from chips to distribution. Peter Shavoir, IBM's chief business strategist, estimates that 2,500 firms took some part in the computer industry of 1965, but that 50,000 jostle for business now. Most of the new ones entered the industry in the 1980s along with the personal computer.

Despite this upheaval, the old computer industry will survive for some time yet. And mainframes, in particular, may never entirely disappear. Large organisations will need to process huge mountains of data quickly and store it securely in a single, central machine for a long time to come. "Some customers will always require robust, bullet-proof, bet-your-business kind of applications. These really do belong on a mainframe," argues Nick Donofrio, head of IBM's mainframe unit.

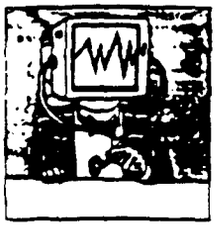
However, sales of such big machines are shrinking. Networking, the fastest-growing segment of the new computer industry, strikes at the heart of the old. At first PCs were strung together in networks to allow the users of individual machines to send information to one another. In the industry's jargon this is known as "peer-to-peer" computing. Some peer-to-peer users no longer needed to be connected to a larger computer to communicate.

Today all firms need a niche

More ominously for the makers of big machines, the hottest trend in the industry is now the much more sophisticated "client-server" network. In this type of network, a large number of personal computers ("clients") are connected to a central personal computer ("the server") which, at a fraction of the cost, does many of the things a minicomputer or mainframe once did, such as storing data, managing the flow of information between users and enabling them to work on the same documents. Many of these networks are built around a powerful type of personal computer called a workstation, based on a microprocessor called a RISC chip. Pioneered by Sun Microsystems, workstations were first used by engineers. Now they are being used by businesses for a variety of tasks and have become one of the fastest growing, and most fiercely contested, parts of the computer market.

The rapid growth of client-server networks is eliminating the need for big computers in many organisations. Companies like IBM and DEC, which sell big machines, reply that in many cases big machines themselves will function as the server for a host of "client" PCs. Nevertheless, with spending on hardware unlikely to grow, some class of machine must suffer, and higher-cost mainframes and minicomputers seem the most likely losers.

Even if demand for big machines holds up longer than expected, the creation of the new computer industry has wreaked havoc with the economics of the old. Spoilt by the convenience, choice and ever-falling prices offered by personal computers, buyers have demanded the same low maintenance, open standards and price reductions from large machines. The growing use of microprocessors in mainframes and minicomputers has enabled the old-style computer makers to provide some of what their customers want. But this has also left them adrift with armies of surplus salesmen, service staff and factory workers, which accounts for the thousands of layoffs in the past year.



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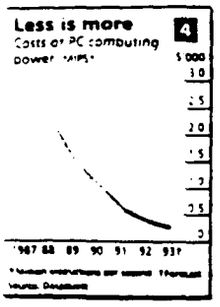
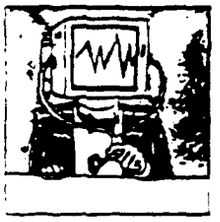




If microprocessor technology continues to advance as rapidly as it has done in the past (see chart 4)—and everyone in the industry expects it to do so—by the end of the 1990s even mainframes could be the size of PCs. They might be just as cheap too.

Well before that happens, it is likely that the new industry will have swallowed the old one. Because it represents the future, and is already where most of the action takes place, the rest of this survey will concentrate on the new computer industry and refer to the old only in passing.

Horizontal desires

Discerning a clear structure in the new industry is hard, but the diagram below is one attempt to do it. Like any such diagram, it is a simplification: technology and competition could soon change it. And yet it is a useful guide to the industry today, so will be used as the map for the rest of this survey.

Begin by comparing it with the much simpler diagram on page 9 of the old computer industry. The most striking thing is that the new industry is a series of horizontal layers, each containing many companies, rather than the vertical, single-company towers of the old industry. Each layer represents a distinct market. The barriers to entry for new firms vary from layer to layer; but in no layer are they as high as they were for the old computer industry as a whole, in which any new firm hoping to challenge the established computer companies head-on had to build an entire vertical tower of its own. As a result, competition in every layer of the new industry is much fiercer than it ever was in the old. This explains why profits for the entire industry have dropped since 1986.

The diagram is borrowed from Andy Grove, the boss of a successful American chip maker, Intel. It is easy to see why he is fond of it. "For us, who deal in the fundamental technology, it's wonderful," he says. Intel's dominance of the microprocessor level (layer 1) is matched only by Microsoft's hegemony in the client/stand-alone operating-system software level (layer 3) two steps above. Barriers to entry in both these layers are relatively high, because Intel and Microsoft have established *de facto* industry standards with their products. Supplanting them would be hard but (more on this shortly) neither Intel nor Microsoft is unassailable.

Layer 2, computer platforms, includes assembled personal computers of every size and shape—desktops, workstations, laptops and notebooks. Largely because Intel's dominance of microprocessors has established an industry standard in this layer, barriers to entry are minimal. Any technician who can buy Intel, or Intel-standard, chips (and Intel sells to anyone) can bolt together a respectable desktop PC from readily available components. So, predictably, this layer is where competition is fiercest. The continual newspaper and television advertising of computers which most people see, and the brutal price war which has captured so much attention in the business press over the past two years, come from firms competing in this layer.

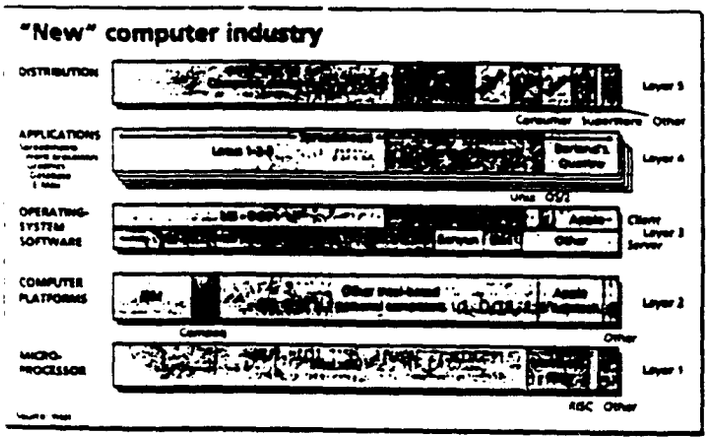
The next layer, operating-system software, is divided between the basic software needed to operate the central server of a network and the software needed to run client machines in the same network or stand-alone PCs. The top half of the layer is much bigger than the bottom half—some 90m machines run these operating systems compared with just a few million functioning as servers. But the bottom layer is growing fast and is highly profitable. For the purposes of this diagram, their relative sizes are not relevant and so they are shown as equivalent.

Layer 4, applications software, is the arena in which Microsoft, Lotus, WordPerfect, and Borland battle for market share. This layer projects into a third dimension because a few of the biggest application categories—spreadsheets, word processing, database management and graphics—are distinct markets in themselves, although all fit into the layer. Barriers to entry for any new firm hoping to grab business in one of these categories are somewhat higher than in computer platforms, because writing such complicated programs is time-consuming and expensive. The need for a strong brand name, and the ability to market and distribute such general-purpose software packages also act as barriers to newcomers. But tens of thousands of small firms compete in the application layer outside these areas with specialised software packages.

The layer above that is probably the most competitive of all, as firms scramble to find the most efficient way to reach customers with machines and software. In recent years, some of the industry's biggest winners and losers have been here. Dell grew from nothing in 1984 to just over $2 billion in sales in 1992 because it invented a new, lower-cost way to distribute personal computers: mail order sales backed by telephone hot-lines offering technical advice. The barriers to entry in this layer are low. Dell already has a host of imitators snapping at its heels, though this has yet to slow the firm.

Parts of the industry are left out of this map. They include memory chips, which work with microprocessors, and other components such as disk drives; peripherals such as printers and modems, and services, a fast-growing part of the industry. Services come in various forms: "outsourcing" (performing all the data-processing chores for a corporate or institutional customer); consulting (advising customers on how to reorganise their businesses to take advantage of computers); and systems integration (making a customer's computers work together).

One reason why such services are growing so quickly is that big corporate customers are confused by all the products being offered by the new



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computer industry. Every large company from the old computer industry—IBM, DEC, Bull, Unisys and others—is now hoping to win much of the service business by exploiting the large marketing and service operations which they built to support the sale of their large machines.

Although memories, peripherals and services are sizable and growing segments of the computer industry, they are supplements to its core, represented in the diagram, where most of the strategic choices must be made and the technology is moving fastest. This is where the industry's crucial competitive battles are being fought, and where firms will emerge as either victors or victims.

Do it my way

THE noisiest of those competitive battles will be about standards. The eyes of most sane people tend to glaze over at the very mention of technical standards. But in the computer industry, new standards can be the source of enormous wealth, or the death of corporate empires. With so much at stake, standards arouse violent passions. Much of the propaganda pumped out by individual firms is aimed at convincing customers and other firms that their product has become a "standard".

It is for the customer's sake that standards matter. All industries need them, simply because so many things made by different companies must fit together to be of any use. Standards can either be a set of specifications and practices, or they can be embodied in a single product. Without some standards or other, no new industry can get off the ground. In its first two decades, the car industry fought fiercely over standards for everything from the size of nuts and bolts to whether vehicles would have steering wheels or boat-like tillers. Eventually, car makers managed to establish standards for enough key features and components to reach a mass market. But even in today's car industry, not everything is standardised, as anyone who has fumbled with the controls of an unfamiliar rental car will know.

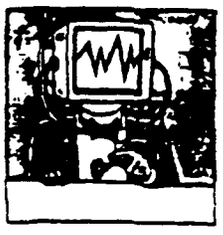
The world is full of standards that are entirely neutral, belong to nobody and simply make life easier (sliced bread fits most toasters). But standards, and who owns them, have always been a critical competitive issue in the computer industry.

In the old industry, standards were mostly set, and owned, by vertically integrated manufacturers and used to lock in customers and lock out competitors. By contrast, the new computer industry has rejected, at least rhetorically, such proprietary standards in favour of "open" standards to which all firms have access. Customers like open standards so much that they have insisted the old computer industry adopt them as well. Mainframe and minicomputer makers now declare themselves keen advocates of openness, although most of their products still do not connect easily to those of rivals.

Every firm wants a monopoly—and every firm wants to call it an open standard

Once established, open standards offer what economists call "network economies", which can entrench standards even when they are not the best available or abreast of the latest technology. In the case of personal computers, such network economies were enormous. Customers had strong reasons to buy machines built to the standard because they felt confident that large amounts of software would be available to run on them, and that most other machines would be compatible. Conversely, even tiny software firms suddenly had what promised to be a huge market at which to aim. Firms like Lotus, WordPerfect and Borland racked up hundreds of millions of dollars-worth of sales from a single hit product. A "virtuous cycle" had been created. As more software was written for IBM-compatible personal computers, more people wanted these machines. As more machines were sold, demand for software increased.

And yet open standards represent a trade-off for both computer firms and their customers. If the standard is embodied in a component that contains much of the value of the finished product—as it was in Intel's microprocessor—firms which use that component can find it difficult to differentiate their products without violating the standard. The



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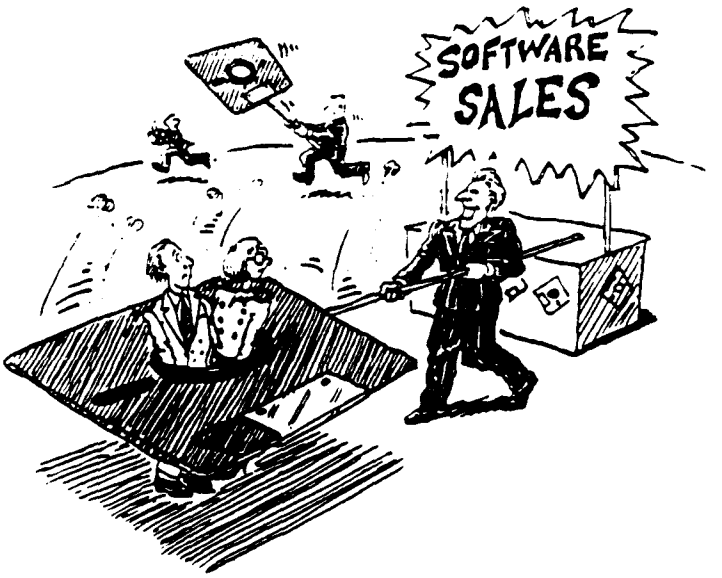
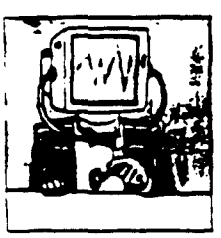


result in personal computers has been brutal price competition. And any standard, open or not, eventually becomes an obstacle to technological progress. With both microprocessor and software technology changing so rapidly, this conflict is especially acute in the computer industry. As a result, even agreed standards tend to be undermined by new technologies within a few years, compelling companies to pay the high costs of abandoning the old standard, and sparking a struggle among firms to establish a new one.

Open standards have become the religion of the new computer industry, to which everyone pays obeisance, so perhaps it is not surprising that schismatic wars have broken out over the meaning of the term. All firms now claim that their products are open, but that those of their competitors are not. "The eskimos have 21 words for snow. These guys need 21 words for 'open'," says Tim Bresnahan, an economist at Stanford University. Generally there are two ways to set open standards: through negotiations by several firms or by the adoption of a standard established by a single firm.

There have been repeated efforts to establish multi-firm standards, especially for operating-system software. Most of these have been based around an operating system first developed by AT&T called Unix, different versions of which can run on every size of machine from mainframes to personal computers. AT&T pledged to license the basic programming code of Unix to any other company at minimal cost. But most multi-firm efforts have failed for the simple reason that the participating firms cannot trust each other. There are now many rival versions of Unix sponsored by various firms from IBM to Sun Microsystems, all of which are, to a significant degree, incompatible with one another, although all are promoted as open.



Standard-bearers

In fact, widespread adoption of a single firm's product is the only way truly open standards have been established in the new computer industry. "The irony of open standards is that they have to be based on a monopoly, which then earns enormous amounts of money for whatever firm owns it," observes Todd Hixon, a technology analyst with the Boston Consulting Group. The most famous—some industry executives would say infamous—example is Microsoft's MS-DOS operating-system software, which now runs on 80m PCs.

Any firm in Microsoft's position has to make some difficult decisions. Owning a standard product is like possessing any monopoly: it is worthless unless a firm can derive income from it. But if a firm charges too much, other firms will rebel, and either try to copy the product or pay the cost of switching to another as a standard. Microsoft has played this delicate game with consummate skill. It has charged too little for MS-DOS to spark much rebellion, while assiduously encouraging other software firms to write application programmes which run on it. As the power of microprocessors grew, the company was also careful to develop new versions which took advantage of the new chips, but which were compatible with all earlier versions, so that users never had to scrap all their old software when they bought a new personal computer. Today nearly all PCs, except workstations and Apple's machines (which use Apple's proprietary operating system), come with MS-DOS already installed. Nevertheless, even MS-DOS's days are numbered, because of technological advances.

Every firm in the computer industry, no matter what layer it competes in, now dreams of repeating Microsoft's triumph. "Even as late as 1988 no one in the industry really understood how lucrative owning a standard could be," says David Yoffie, a professor at Harvard Business School and a board member at Intel. "Now everyone sees it. As a result no one is willing to let another company establish it. That is what makes the prospects for profitability so problematic in this industry."

A huge battle is shaping up in operating-system software. Microsoft has a big lead with a product called Windows, which runs on MS-DOS machines and mimics the easy point-and-click icons of Apple's computers. It has already sold more than 20m copies. But IBM is heavily promoting OS/2, its rival to Windows. In network operating-systems, which run on the machines at the centre of client-server networks, Novell has scored a success similar to Microsoft's. Its Netware has become the standard.

Netware's dominance is unlikely to last a decade, as Microsoft's MS-DOS has done. By the middle of next year, Microsoft has promised to launch a product called Windows NT (for "new technology") to compete with Netware. Meanwhile Taligent, a joint venture established by Apple and IBM, is also working on an operating system that will run both on networks and on stand-alone machines. And many people in the industry believe that some version of Unix will ultimately prevail. In December Novell bought Unix Systems Laboratories from AT&T and 11 minority shareholders, with the obvious intent of making Unix an alternative standard to whatever is offered by Microsoft.

The battle over operating systems will produce the most spectacular fireworks over the next few years. Nonetheless, scores of similar struggles to establish and control "open" standards are occurring in every corner of the computer industry.

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Decisions, decisions

MANAGING any business, from a fruit stall to an oil company, is a complicated task. Demand and price go up and down, competitors disrupt the most carefully laid plans, interest rates fluctuate, laws change, employees blunder. The list of possible calamities is long, that of opportunities lamentably short. And yet for most businesses the rules of the game, and so the types of calamities or opportunities to be faced, stay much the same for years, or even decades, at a time.

For computer companies, the rules of the game itself keep changing, which multiplies all the normal complexities and risks of running any firm. There are a number of reasons for this. First, the basic technologies of the computer business—microprocessors, memory chips, screens and software—continue to change quickly, creating new products and altering both the capabilities and pricing of existing products in every layer of the industry, which has knock-on effects in all the other layers.

Second, these technologies are so widely dispersed that predicting which firms will succeed with a new technology, or suddenly spring up as a new competitor, is far more difficult than in most other industries. A vast corps of electronics engineers and programmers have been trained over the past two decades. Their job mobility and willingness to take risks are legendary. Firms have little difficulty recruiting talent, and lots of new companies are formed every year. Even in microprocessors—a capital-intensive, specialised business—Intel now faces competition from a small, Texas-based firm called Cyrix, started by two engineers in 1988. In the late 1980s Toshiba, a distant also-ran in personal computers, shocked the industry when its laptop models, not those of the industry's established leaders, became a hit everywhere. Toshiba, in its turn, was shocked when its early lead was eroded by a wave of imitators, most of them American.

Third, far more often than most companies, computer firms are not selling their products to an established market, but trying to create demand for an entirely new product. This involves a lot of sheer guesswork. In 1991 many firms expected pen computers to take the industry by storm (these allow people to enter information by writing with a stylus on an electronic notepad rather than using a keyboard). Since then, sales have been disappointing. Pen computers are now seen as a niche product with limited potential.

Technological change is not unique to the computer industry. But its pace, and the fact that it is happening in so many areas at once, may be. So to succeed, or even to survive, computer firms now have to put an inordinate amount of effort into doing three things:

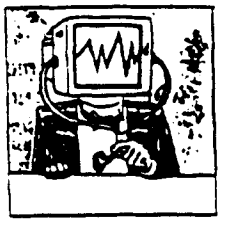
To compete, collaborate

• **Collaborating.** The multi-layered structure of the new computer industry and the large number of firms it now contains, mean that any single firm, no matter how powerful, must work closely with many others. Often this is in order to obtain access to technology or manufacturing expertise. A web of thousands of joint ventures, cross-equity holdings and marketing pacts now entangles every firm in the industry. Even firms with a revolutionary product need to create a "community" of other firms to exploit it, argues James More, of Geo Partners, a computer-industry consultant. "A firm has to attract help from all others in the value chain and deny it to competing communities of firms."

Successful alliances are notoriously tricky to achieve in any business. An added complication in most computer-industry deals is that few alliances are exclusive. Firms usually retain the right to do business, or strike a similar alliance, with other firms. And alliances are often between firms that compete fiercely in other areas. Apple and IBM are jointly developing new chips, operating systems and multi-media products, all critical to both firms' future. But Apple, like much of the rest of the new computer industry, also remains determined to steal business from IBM's corporate customers.

Given so many uncertainties, many of the grandest computer alliances predictably fail. The most spectacular break-up has been between Microsoft and IBM. The two spent years and hundreds of millions of dollars jointly developing OS/2, an operating system to replace MS-DOS. When an early version of OS/2 sold poorly in 1990, Microsoft threw most of its marketing efforts behind its own Windows operating system. IBM felt betrayed. It has since signed marketing pacts with Microsoft's rivals, Novell and Lotus.

• **Watching other firms.** Firms must keep a close eye on the actions of others, even those with whom they have no formal alliance or do not compete. Most firms depend on those in other layers of the industry to succeed. If a firm stumbles in one layer, it can deal a mortal blow to firms in other layers. In the 1980s Compaq owed much of its extraordinary success in the market for assembled PCs to Intel's willingness to provide it with early supplies of its latest microprocessor. But when new RISC microprocessors designed by Sun and others looked as if they would leave Intel's chips far behind, Compaq had no choice but to join Microsoft, and 19 other firms whose products depended on Intel's chips, in



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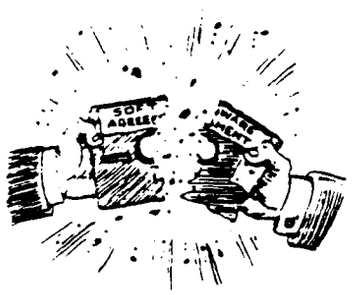
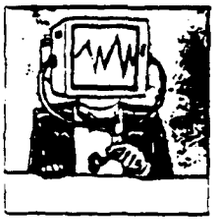


a consortium called ACE assembled to search for an alternative. Alarmed, Intel accelerated plans to bring out a new generation of microprocessors and eventually persuaded ACE's members that it could keep up with RISC technology. In late 1992 ACE was disbanded. Similarly, Lotus bet that IBM would succeed with OS/2 after its split with Microsoft. When sales of Windows took off and those of OS/2 spluttered, Lotus was not prepared with a Windows version of 1-2-3, its popular spreadsheet program. As a result, Lotus lost market share to the Windows version of Excel, Microsoft's own spreadsheet. Lotus is still scrambling to catch up.



• **Monitoring technology.** Like any type of company, computer firms must track their direct competitors to avoid being caught off guard by a technological breakthrough. However, technology is changing so fast in the computer industry that just watching competitors is not enough. Our map of the industry on page 18 will probably be completely redrawn in a few years. New technologies promise to blur the boundaries between today's layers, pitting supplier against customer and turning firms which now happily co-operate into competitors.

Chip makers are learning to put more and more of the electronic bits in complete machines on to a single piece of silicon along with the microprocessor. This is a direct threat to assemblers of personal computers, who are already struggling to find ways to add value to machines and so earn profits.

In the next few years, microprocessors themselves will become so powerful that they will incorporate many of the functions of current operating-system software, or run "emulations" which allow them to operate with software written for other types of microprocessors. There is disagreement about whether such emulations will be efficient enough to be invisible to the user, or whether they will slow computers down. If they prove efficient and invisible, the implications for the microprocessor and software markets are difficult to fathom.

It could prove a blow to Microsoft, Novell and others which sell operating systems. Or it could liberate them from specific chip makers. Microsoft has said that Windows NT will run on a variety of RISC microprocessors, as well as on Intel's chips. If all operating systems can run on all microprocessors, then the latter could become a commodity like memory chips, sold primarily on price. On the other hand, emulation may also allow operating systems to mimic each other, which would mean that software written for MS-DOS or Windows could run easily on Unix, Apple's operating system, and any others that come along. This, in turn, could make operating systems indistinguishable commodities.

Microsoft's boss, Bill Gates, dismisses any such idea as "really, really wrong. It ignores the idea that there is incredibly innovative work going on in operating systems." That is just the problem, complain many application-software firms. They worry that Microsoft will incorporate so many functions into its new operating systems that there will be little opportunity for them to innovate and add value. Though Microsoft is a big application-software firm itself, it is wary of alienating other application firms because it does not want them to devote their best efforts to writing software for rival operating systems. On the other hand, the intensely competitive Mr Gates finds it difficult not to seize an opportunity sitting right under his nose.

Meanwhile Lotus is attempting to appropriate some of the functions, and value, of the layer below the application-software layer where it normally competes with a product called Notes, which allows users on large networks of personal computers to communicate easily and share databases. Though ostensibly an applications program—it runs on various operating systems—Notes is also something of an operating system itself. Lotus is encouraging other firms to write applications which, in turn, exploit the capabilities of Notes. Already industry pundits are calling Notes "middleware", an entirely new industry layer between operating systems and applications. Microsoft plans to incorporate many of the same features offered by Notes into its new server operating-system, Windows NT, when it appears this year, which might promptly squeeze middleware out of existence.

Given all these risks, one question companies must continually ask themselves is whether or not they should be operating in the layer above or below their main business—in other words, how vertically integrated should they be? There is no single answer to this; and, because of technological changes, whatever answer looks right today may be wrong tomorrow. Apple and Sun Microsystems claim that being in both hardware and software is an advantage for making both work together, though they are now devoting the bulk of their R&D efforts to software. Mr Gates says being in both hardware and software is too risky, though he sees an advantage in being in both operating systems and application software. IBM, which is in every layer and every market, is floundering.

Four friends, four rivals

A tale of three winners and one big loser

MOST of the computer companies mentioned in this survey are American. That is no oversight. The industry's direction has been set in America, which is also where most of the innovation occurs. Although large, the European and Japanese computer industries are rooted in their home markets. During the past two difficult years, European companies have lost market share even at home to American rivals. Japanese companies have fared better. Their lead in memory-chip production and their skills at low-cost manufacturing have brought them modest gains in the share of world hardware sales. But at home they are facing an onslaught from American and other companies in the personal-

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computer market. And they have yet to make much of a dent in software.

Japanese firms could play a bigger role, especially if mobile, hand-held computers become as big a hit as many people predict. Until that happens, however, strategic choices made by American firms will determine the direction of the industry. This article examines the strategies of four of the most significant American firms.

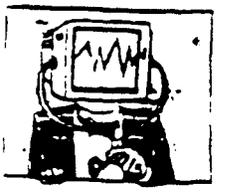
As the leader of the old computer industry, IBM faces enormous challenges finding its place in the new industry. Its efforts to do so will be one of the great dramas in modern corporate history. For IBM, 1992 was a disastrous year. Even worse, it capped a precipitous slide in the company's fortunes. Since 1985 its share of the total computer market, including hardware, software and services, has slid from 30% to less than 19%. Its market capitalisation has dropped like a stone, from a peak of $106 billion in 1987 to $27 billion.

IBM has already made wrenching changes, cutting its workforce by a quarter to 300,000 and reducing manufacturing capacity by 40% since 1986. This year it is cutting another 25,000 people. It has also reorganised its business five times over the same period. In December 1991 it announced the most drastic reorganisation of all, the division of the company into 13 autonomous businesses, each with its own balance sheet, profit and loss account and financial targets. These businesses are supposed to establish an internal market, with prices equivalent to those offered by outsiders, which should expose hidden subsidies and obvious laggards. Whether it will make IBM as a whole more competitive is debatable. "Markets and companies are very different things," says David Teece, a professor at Haas School of Business at the University of California's Berkeley campus. "IBM may not get the full benefits of either."

Despite its troubles, IBM remains huge. Its sales are more than three times the computer sales of Fujitsu, the world's second-biggest computer company. And amid the carnage of the past few years, it has scored some remarkable successes. Its minicomputers and workstations, two markets which it entered years too late, have sold well.

Today technology is coming out of IBM's vast R&D establishment much more quickly, producing a wave of new products in 1992. It has also launched a range of low-cost personal computers and copied the direct marketing and telephone technical support pioneered by Dell. The inadvertent creator of the new computer industry, IBM has now had to adopt the new industry's ethos, pledging to make all its products connect easily to those of other companies. It has collaborative deals with thousands of firms, including many of those whose success has done so much to destroy its hegemony. Lotus, Novell, Apple and others are all too happy to let IBM's huge salesforce flog their products to large corporate customers. Whether Big Blue gets much out of this is itself difficult to say. The company's top managers say they are now determined to give customers whatever they want, even if that means selling someone else's product, or helping a customer to scrap an expensive IBM mainframe in favour of a cheaper network of workstations and personal computers.

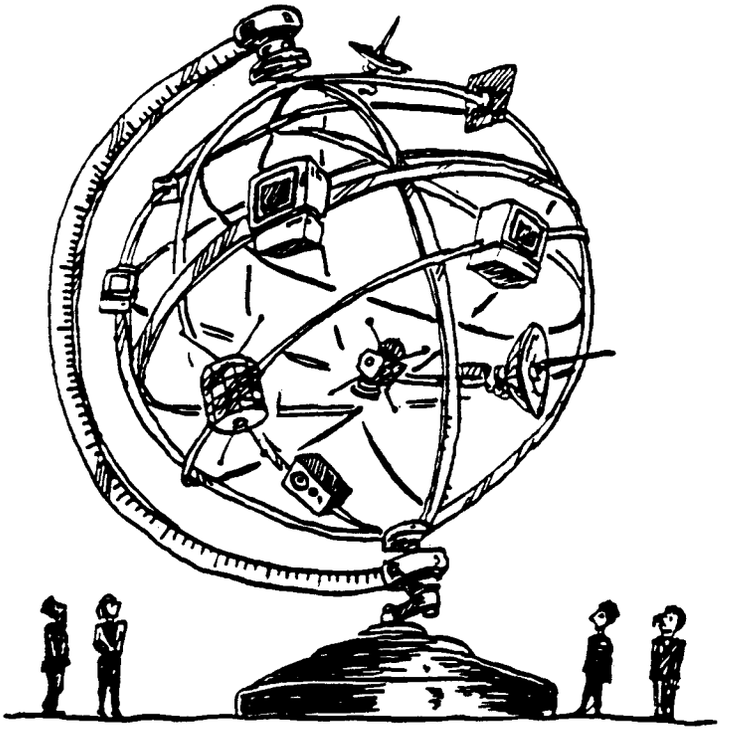
If it is to remain a single entity, IBM has no choice but to adopt this strategy of being all things to all customers. But IBM is competing against thousands of specialised firms aiming at every corner of its market and every layer of its value-added chain. Even if its mainframe patrimony, still its biggest business, survives longer than sceptics suggest, IBM may not be able to remain either so vertically integrated or so ubiquitous in an industry which is fragmenting quickly. IBM executives seem at a loss about what to do next. A new boss at the company may break it up.



Cool operator

Microsoft has replaced IBM as the industry's most feared and admired company. Its financial performance has been spectacular, largely because of its near-monopoly in PC operating systems, which account for 40% of its sales. Other firms in the industry are gunning for Microsoft. Complaints by rivals of anti-competitive behaviour have sparked an investigation of the firm by America's Federal Trade Commission, which could cause Microsoft big headaches in the future. IBM's alliances with Apple, Novell and Lotus are clearly designed to deny Microsoft dominance of the next generation of operating systems, whether on stand-alone machines or the servers at the heart of client-server networks. Sun Microsystems aims to do the same thing. Mr Gates shrugs off criticisms from other firms. "Customers don't care much about whether other companies in the industry are comfortable with us," he says. "Who gives a damn?" He rubbishes rival products. IBM's OS/2 operating system, he states flatly, will be dead in two years.

Behind the outward taunting, Mr Gates has displayed great skill and determination in building Microsoft into a powerhouse. Ironically, in the 1980s the firm's application programs for its own



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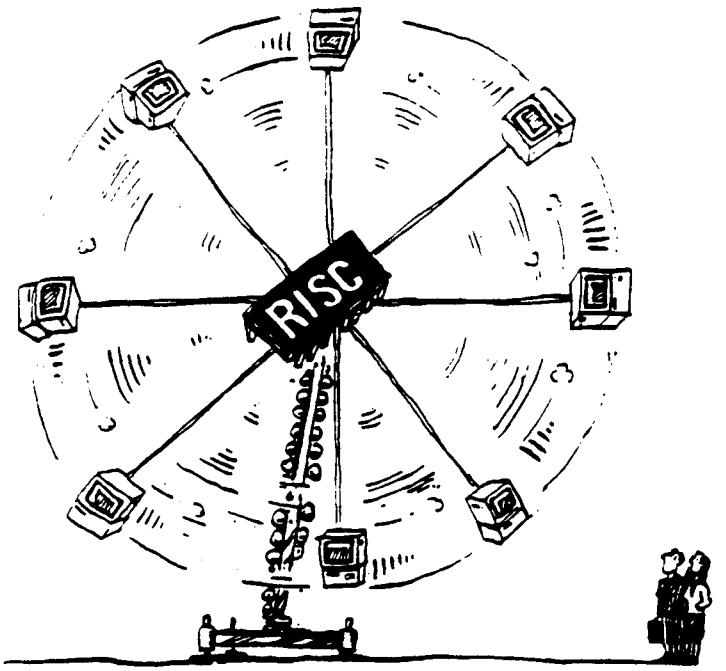
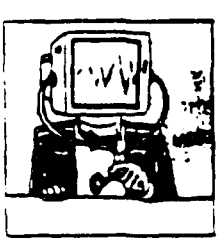


operating system sold poorly. Lotus, WordPerfect and Borland became the leading suppliers of (respectively) spreadsheets, word-processors and database software for IBM-compatible personal computers. So Mr Gates directed Microsoft's efforts to writing application programs for Apple's Macintosh computer, despite the fact that Apple's machines were rivals to those that ran its own MS-DOS operating system. The strategy worked brilliantly. Microsoft's applications helped make Apple's Macintosh computer succeed, although MS-DOS machines continued to account for 90% of PC sales. And then, when it abandoned its joint effort with IBM on OS/2 in favour of its own Windows software, Microsoft also threw its weight behind its Windows-compatible applications, catching Lotus, WordPerfect and Borland off balance and winning a big chunk of sales in the IBM-compatible market as well. It is waging a fierce price war to hold on to its new prize.

Though it is portrayed by rivals as the firm to beat, Microsoft will never dominate the new computer industry the way IBM did the old one. Mr Gates seems to recognise this when he admits that the company will not be able to maintain its phenomenal profitability indefinitely. But if Microsoft scores a success with Windows NT in network operating systems similar to what it has achieved with MS-DOS and Windows, it could enjoy another extraordinary decade. Its break with IBM will make that much harder to accomplish. Thousands of the corporate customers switching to client-server networks still have IBM machines. Many of them are bound to listen to IBM salesmen peddling network operating systems from Novell, IBM and others. If it fails, Microsoft will still be a formidable competitor in the application-software market. But that business, as even Microsoft has discovered, is more hit-or-miss than operating systems.



Intel, like Microsoft, has been one of the biggest beneficiaries of the brutal price wars in the PC market, which has boosted sales of machines, most of them containing an Intel microprocessor. For more than two decades, Intel has been one of the most innovative firms in electronics. But it has never been able to rest on its laurels for long, and that is truer today than ever before. Despite its supremacy in microprocessors, Intel faces competition from two types of companies: those making replicas of its microprocessors and those making alternatives using a different design.

Advanced Micro Devices (AMD), which Intel licensed as a second supplier at the behest of IBM a decade ago, has since managed to "clone" versions of Intel's most popular chip, the 386. This has driven prices down rapidly in the past year. So Intel has shifted its marketing efforts to the more powerful 486 chip. It has also invested heavily in both R&D and new production capacity to accelerate the launch of its next-generation chip, called the Pentium, which is expected in the next few months. Though Intel has dragged AMD in and out of court claiming patent infringement to slow it down, AMD says it will have a 486 chip ready this year. Cyrix, whose designs are not clones of Intel's but are meant to run all the same software, is already selling a 486 chip and promises a Pentium-compatible chip later this year.

RISCy business

A bigger threat could come from firms making incompatible RISC microprocessors, which have traditionally been faster than Intel's. These are made by a range of firms, from Texas Instruments to Fujitsu, working to the designs of Sun Microsystems. IBM, which invented RISC technology in the 1970s, is also working on a new RISC chip, called the PowerPC, with Apple and Motorola. Intel claims the Pentium will match the performance of any RISC chip, but also offer compatibility with all the software currently written for all earlier Intel chips—a big advantage. In any case, Intel has little choice but to keep running this particular race. The industry layer above, personal computers, is crowded with its own customers and an even harder market in which to make money.

Apple has always bucked the new computer industry's trends. It makes both hardware and software to its own proprietary designs (Motorola makes its microprocessors) and, until recently, charged a premium for its products in a price-conscious market. Its computers have been easier to use than those of rivals, and they have superb graphics. Apple has been the leading firm in American schools and the desk-top publishing market. Otherwise, most of its machines have been sold to individuals, not firms. Its customers are famously loyal.

The constant price-cutting by other PC makers eventually made Apple's strategy untenable. Alarmed by Apple's shrinking market share, John Sculley, its chief executive, reversed the company's direction in 1990, slashing prices, cutting costs and pushing new versions of its computers out of the door faster. "We realised that we didn't have a survivable company," he explains. Apple's market share has recovered. Mr Sculley claims that it is now the world's biggest manufacturer of personal computers. The company scored a hit with its elegantly

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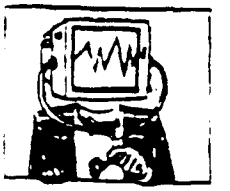
designed laptop computers, called Powerbooks, last year.

Mr Sculley also concluded that, however innovative or price competitive, Apple needed a partner. In 1991 he announced a wide-ranging alliance with IBM. During 1993 this is supposed to put Apple into the client-server market with a new Unix-based network operating-system and a RISC-based workstation powerful enough to act as a server. The alliance is also supposed to help Apple to crack the corporate market by making it easier to link Apples to IBM minicomputers and mainframes. In addition, the two firms have established joint ventures to develop multi-media software—mixing text, video, voice and graphics simultaneously on the same machine—and "object-oriented" software (chunks of standard software which users can assemble to make their own applications).

Mr Sculley is already looking far beyond any of these ventures. "In five years Apple will be heavily into services, software, and systems integration. The wars today are all about hardware prices. Microsoft's monopoly of the system software. Intel's control of microprocessor technology: that's all going to be ancient history," he says. The future, he predicts, will be one in which people will have access to all forms of information—news, television, business data—wherever and whenever they want, using hand-held "personal digital assistants", a kind of computerised mobile telephone. Apple announced the first family of these, called the Newton, last year, but has yet to bring any of them to market. By 2000, says Mr Sculley, the consumer-electronics, television, telecommunication, entertainment and news industries will have merged into a single market, with sales of $3.5 trillion a year. Apple will thrive in this market, he claims, because it knows better than most firms how to make complex technology easy for ordinary people to use.



Lost horizons

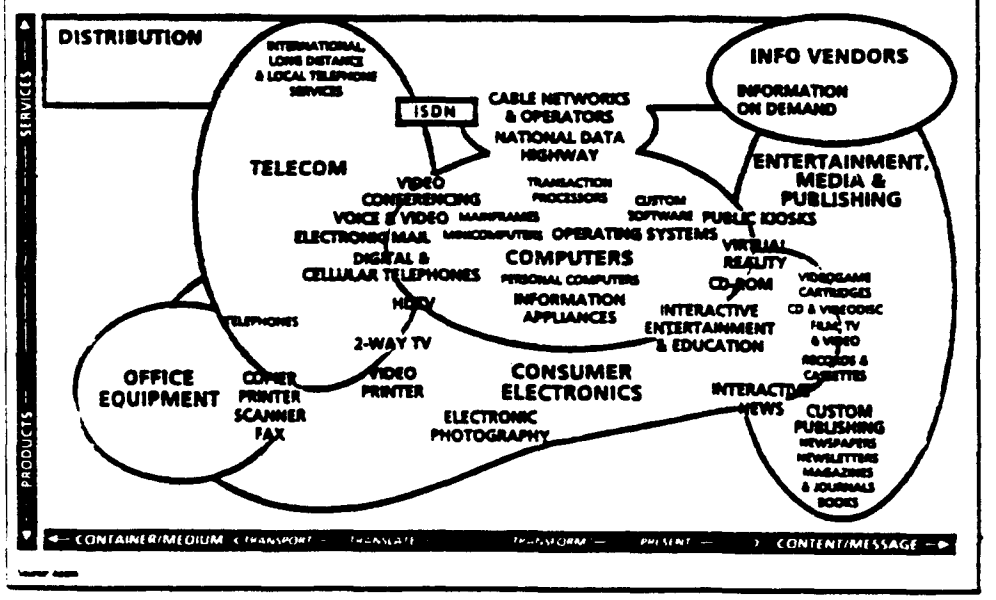
MANY of Mr Sculley's competitors accuse him of being glib. Yet most of them also share his vision of the future. Over the next decade, most information, including television, is expected to assume the same digital form as computer data. And the spread of mobile telephones is already bringing mobile computing in its wake. Some of the latest laptop computers can already communicate over the airwaves. More powerful chips seem certain to put enormous computing power into machines small enough to fit into the palm of the hand. More powerful software will make computers of any size and shape easier to use. The cost of storing, transmitting, manipulating and analysing data will drop sharply. Most big computer firms believe that this means the computer industry will overlap with a variety of others.

One way to portray Mr Sculley's vision is the product map below. It was drawn by Apple on the basis of work done at Harvard University's Centre for Information Resources Policy. The horizontal axis moves from (on the extreme left) products which act as containers or carriers of information, but have none themselves, to (on the extreme right) products whose value resides almost entirely in the information they contain, not their physical form. The vertical axis moves from tangible products at the bottom to intangible services at the top. The map plots where various industries will overlap or converge, so the area covered by each industry does not reflect its relative size in terms of sales.

Mr Sculley is not alone in seeing dazzling

The computer industry's possibilities are proliferating and its boundaries are dissolving

Merger mania The information industry in 2001



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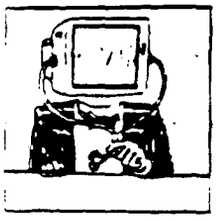


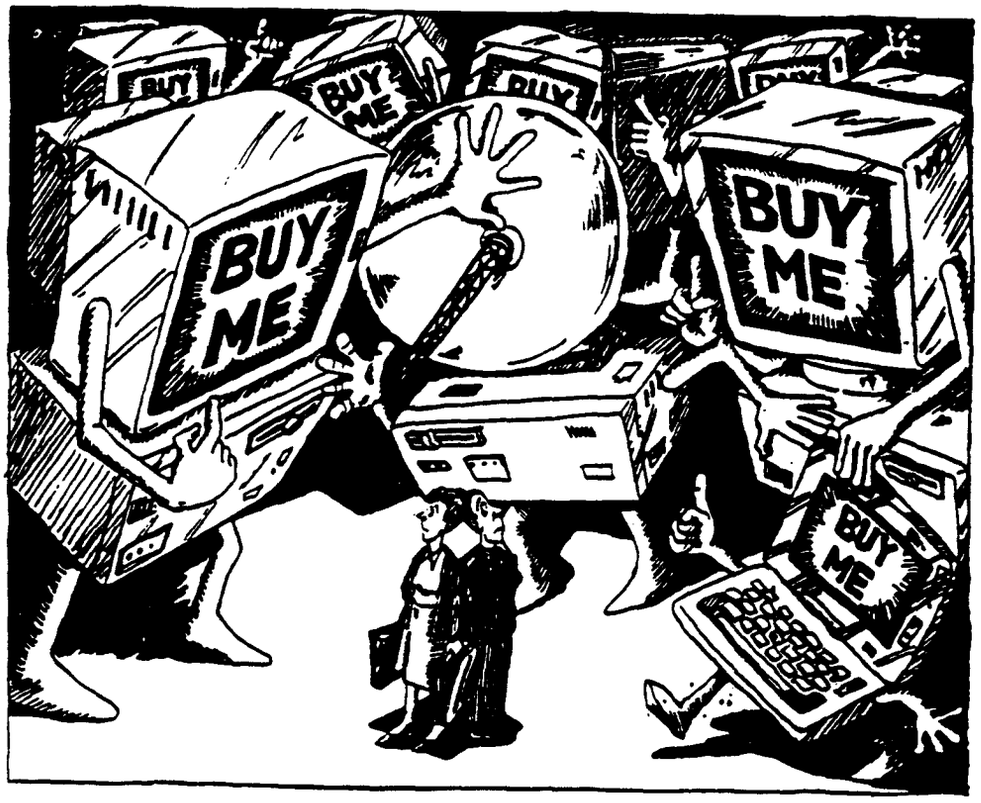
opportunities for computer firms in these spreading blobs. Motorola is already selling pagers which instantly alert a customer to any news item on his industry, or any other subject he specifies. IBM and Sears jointly operate Prodigy, a service which provides consumer and business information to PC users in America. Mr Gates also wants Microsoft to get into the business of providing time-sensitive information, and he has established a separate venture of his own to purchase reproduction rights to thousands of images.

But the product map of the future could just as easily mean a collection of tough new competitors for the computer industry. Particularly ominous is the vast area covered by consumer electronics. Japanese firms such as Sony, Matsushita and Sharp are veterans at miniaturisation, low-cost manufacturing and selling huge volumes of low-margin products to a global market. To manufacture its Newton products, Apple has already had to turn to Sharp. Publishers and news services such as Reuters, Dow Jones and Associated Press are unlikely to let computer firms into their business without a fight. And the biggest winners of all may be the telephone companies and cellular-phone operators. They already make more money transmitting faxes than the firms which make fax machines. In November AT&T bought a 33% stake in McCaw, America's biggest cellular operator, and it already owns stakes in EO, a start-up company making mobile, hand-held computers, and General Magic, an Apple spin-off developing software for such devices.

Mr Sculley argues that the winners in this vast new market will be whoever "owns customer relationships". With consumers needing guidance through the thicket of new technology, he may be right. But consumer-electronics companies, telephone firms and news services have just as much chance of forging such relationships as computer companies; and they are accustomed to talking in a language the average person understands, unlike most computer companies.

One thing seems certain: the new computer industry will never return to the stability, or high profits, of the old one. Too many companies now have access to the technology—and to the customer. The best strategy will still be to persuade other firms to use your product as a standard. As the industry collides with the telecommunications, publishing and consumer-electronics industries, there will be standards battles galore. The search for alliances will become more frantic. Launching new products will require even greater leaps of faith. Nobody really knows how many people will want so much information at their fingertips, what price they will pay for it or what they will want to do with it. When firms find the right combination of features, they will strike it rich. But scoring one-off successes will be easier than sustaining competitive advantage over the long term.

If the industry does not make enough profits to pay for R&D and earn a proper return on its invested capital, technological progress will eventually slow down. Even so, the future path of underlying technologies in both chips and software seems clear for some years to come. So if one firm drops the baton, another may well pick it up, make the R&D investment and try its luck. This heralds even tougher times ahead for the computer industry. For its customers, nothing could be better.



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TAB 15

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Electronic Engineering
TIMES
February 18, 1991

Windows stars at SD91

By Ray Weiss

Santa Clara, Calif. — The tenor of last week's System Development Conference was clear evidence that Microsoft Corp.'s Windows is well on its way to becoming the dominant operating-software platform for personal computers. SD91, here, was essentially a Windows show: More than one-third of the vendors in attendance had Windows-related products. Developers flocked to see Windows products, while software vendors launched the second wave of Windows 3.0 development software.

A typical reaction was that of Craig A. Snow, manager, software engineering, at Sophia Systems Inc. (Palo Alto, Calif.): "Everybody is going to Windows. It's inevitable. Everybody is looking for the right tool or vehicle to build Windows products."

Microsoft's dominance of Windows development tools was challenged by a number of tool vendors. Archrival Borland International debuted its next-generation Borland C++ product for Windows, which can build Windows programs without the heretofore required Microsoft System Development Kit (SDK). Jenson & Partners Inc. (JPI) announced its integrated set of Topspeed compiler/tools for Windows and DOS. JPI's tools, too, are complete Windows tool kits.

But Microsoft (Redmond, Wash.) is fighting back by preparing a new set of tools for release this year. To hold the fort in the meantime, Microsoft integrated its SDK and C6.0 C compiler, and dropped the combined price by 25 percent.

Breakthrough product

Borland's C++ is considered by many Windows programmers to be a breakthrough product—easier and faster to use than the older Microsoft C6.0 and SDK tools.

"This is the tool I've been looking for," said B.J. Safdie, a technology analyst with Sony Corp. (Woodcliff, N.J.).

Borland C++ has a fully integrated development environment, including the Turbo Debugger, which can run in a DOS window in Windows' standard protect mode. The package includes the interactive WhiteWater Group Resource Toolkit, with which to build Windows applications resources (bitmaps, fonts, dialog boxes, etc.)—a job normally handled by the Microsoft SDK resource editors. Many developers welcome Borland's offering.

The new C++ package supports Windows code. Users can build Windows programs, including DLLs (dynamic linked libraries). Additionally, Borland C++ minimizes compilation time by precompiling program header (.h) files. This saves time, for some .h files, like Windows.h (used in all Windows programs), have more than 20,000 lines of code.

Interestingly, as Borland Challenges Microsoft, Borland itself is being challenged by Jensen & Partners, a spinoff of Borland International. Its CEO, Niels Jensen, was one of the cofounders of Borland.

JPI's Topspeed Professional Techkit targets Borland's traditional strength: Turbo Pascal. "Unlike our competitors," said Jensen, "our Pascal compilers are ISO compatible, as is our C compiler."

Microsoft is fighting back by preparing a new set of tools for release.

The new compilers announced by JPI at SD91 brought a new tack to PC software tools. JPI debuted four compilers for Windows development: C, C++, Modula-2 and ISO Pascal. Unlike any other PC compilers, all of these run in a single environment (as DLLs) and share a common code generator. Users can buy and add as many compilers as they want. Additionally, they can compile mixed code concurrently, and the libraries are shared, i.e., C or Pascal programs can access Pascal or C library procedures/functions.

What's more, the JPI compilers feature some technical breakthroughs, including virtual pointers (typed pointers, which, when de-referenced, cause a function to

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be called) and DOS-based dynamic linking with DLLs (an overlay manager that uses the Windows DLL format). Also included with the languages is a pre-emptive, multitasking kernel that runs on top of DOS.

'We'll be there'

Microsoft is busily working on its own advanced tool sets. "You can bet that we will be there with next-generation tools," said Fred Gray, Languages general manager at Microsoft. The company is working at both better Windows development tools and a C++ compiler. Additionally, the company already has a 32-bit compiler as part of the new SDK for OS/2.

Many analysts expect Microsoft to field that 32-bit compiler for Windows, undercutting Borland and JPI, whose compilers are still 16-bit architectures, despite the fact that many developers are now running on 32-bit 386 and 496 machines.

Microsoft actually helped Borland in getting its Windows product out. "We have a tool-independent program," said Gray, "that treats our own languages group the same as any other ISV [independent software vendor]. Microsoft is out to get Windows accepted and will help competitors like Borland. In fact, we get Windows and other operating system releases the same time as do the ISVs."

Other vendors at SD91 presented products that support the emerging Windows development market. These include 32-bit compilers from Zortech (C++) and Watcom (C), as well as Windows GUI (graphical user interface) builders, such as Professional WindowsMaker from Blue Sky Software Corp. (Las Vegas, Nev.) and VZ Programmer for Windows.

Additionally, two key Windows products bowed that fill critical needs for Windows developers: PCsteam, a hardware ICE for Windows that monitors 386 systems out to 33 MHz with a fully compliant CodeView debugger, and Distinct, the first TCP/IP package for Windows—it includes Berkeley Sockets, RPC/XDR and NFS, linking Windows applications to the Unix networking world.

Getting attention

Windows is attracting a lot of attention. "Windows provides a full graphics environment," said Isadore Sobkowski, principal, Knowledge Associates Ltd. (Riverdale, N.Y.). "It's a perfect base for our new generalized expert system, ACE."

Another company, Expert-Ease Systems Inc., is moving its process-control software to Windows. "People want Windows—it's a rising market," said Dave Kuhlman, senior software engineer, Expert-Ease (Belmont, Calif.). "But I will continue to develop using OS/2—you can just do a lot more with OS/2 than with Windows."

Many programmers accept Windows as inevitable. "Windows has the market attention," said Sony's Safdie. "But it's a lot like those kits people used to buy and put on a Volkswagen, making it look like a Maserati or some luxury car. Under the hood is still a Volkswagen."

Ronald Surratt, principal, C Carp Designs (Laytonville, Calif.), plans to use Windows as a user-interface for software tools. "Windows is here and accepted. It takes care of the graphical user interface as well." Surratt will combine Windows with Smalltalk for development. "You can do an awful lot with a small amount of Smalltalk code; with Windows it minimizes development time," he said.

But there are others that cannot live with Windows' internals. "Windows is not deterministic," said Christopher Bajorek, president of Telephone Response Technologies Inc. "We do real-time voice systems and have built a pre-emptive multitasking operating system on top of DOS for our needs." Bruce Wallace, a development engineer at Quantum Institute, at the University of California at Santa Barbara, uses OS/2 for real-time control of a free electron laser.

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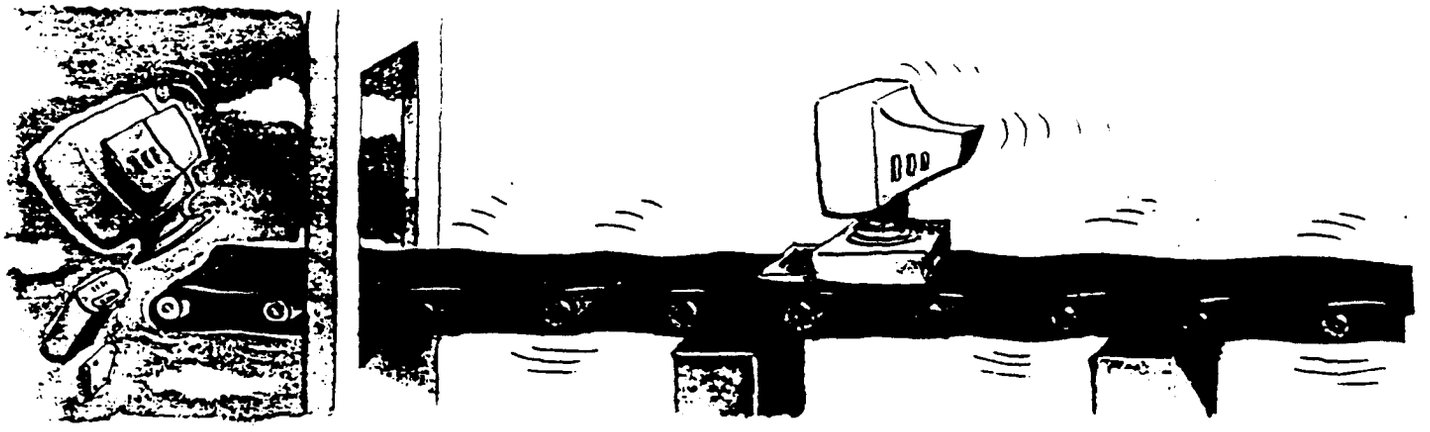
TAB 16

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Inventing – and reinventing – the proprietary architectures for open



How Architecture Wins Techn

by Charles R. Morris and Charles H. Ferguson

The global computer industry is undergoing radical transformation. IBM, the industry's flagship, is reeling from unaccustomed losses and is reducing staff by the tens of thousands. The very survival of DEC, the industry's number two company, is open to question. A roll call of the larger computer companies – Data General, Unisys, Bull, Olivetti, Siemens, Prime – reads like a waiting list in the emergency room.

What's more, the usual explanations for the industry's turmoil are at best inadequate. It is true, for example, that centralized computing is being replaced by desktop technology. But how to explain the recent troubles at Compaq, the desktop standard setter through much of the 1980s? Or the battering suffered by IBM's PC business and most of the rest of the desktop clone makers, Asian and Western alike?

And the Japanese, for once, are unconvincing as a culprit. The fear that Japanese manufacturing prowess would sweep away the Western computer industry has not materialized. True, Japanese companies dominate many commodity markets, but they have been losing share, even in products they were expected to control, like laptop computers. Earnings at their leading electronics and computer companies have been as inglorious as those of Western companies.

Explanations that look to the continuing shift in value added from hardware to software, while containing an important truth, are still too limited. Lotus has one of the largest installed customer bases in the industry. Nevertheless, the company has been suffering through some very rough times. Meanwhile, Borland continues to pile up losses.

Nor are innovation and design skills a surefire recipe for success. LSI Logic and Cypress Semiconductor are among the most innovative and well-managed companies in the industry, yet they still lose money. Design-based "fabless," "computerless" companies such as MIPS have fared very badly too. MIPS was saved from bankruptcy only by a friendly takeover. And Chips and Technologies is in dire straits.

Government protection and subsidies are no panacea either. The European computer industry is the most heavily subsidized in the world but still has no serious players in global computer markets.

Charles R. Morris is a partner in Devonshire Partners, a Cambridge, Massachusetts technology consulting and financial advisory firm. Charles H. Ferguson, an MIT Ph.D. and former MIT researcher, is an independent consultant, also in Cambridge. This article is based on their book Computer Wars: How the West Can Win in a Post IBM World, *which was just published by Times Books.*

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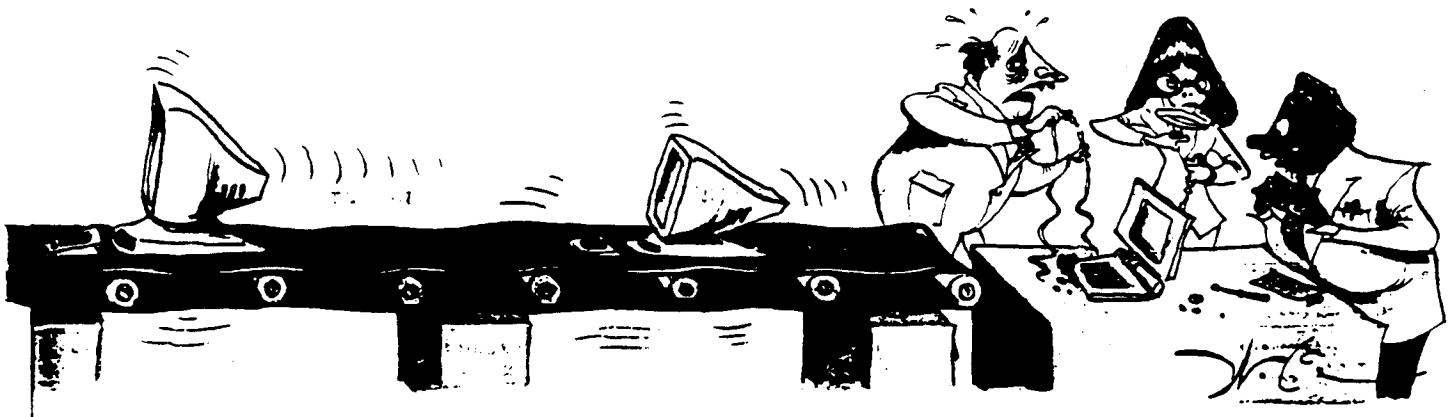
systems is critical to competitive success.



nology Wars

Scale, friendly government policies, world-class manufacturing prowess, a strong position in desktop markets, excellent software, top design and innovative skills – none of these, it seems, is sufficient, either by itself or in combination with each other, to ensure competitive success in this field.

A new paradigm is required to explain patterns of competitive success and failure in information technology. Simply stated, competitive success flows to the company that manages to establish proprietary architectural control over a broad, fast-moving, competitive space.

Architectural strategies have become of paramount importance in information technology because of the astonishing rate of improvement in microprocessors and other semiconductor components. The performance/price ratio of cheap processors is roughly doubling every eighteen months or so, sweeping greater and greater expanses of the information industry within the reach of ever-smaller and less expensive machines. Since no single vendor can keep pace with the deluge of cheap, powerful, mass-produced components, customers insist on stitching together their own local system solutions. Architectures impose order on the system and make the interconnections possible.

An architectural controller is a company that controls one or more of the standards by which the entire information package is assembled. Much current conventional wisdom argues that, in an "open-systems" era, proprietary architectural control is no longer possible, or even desirable. In fact, the exact opposite is true. In an open-systems era, architectural coherence becomes even more necessary. While any single product is apt to become quickly outdated, a well-designed and open-ended architecture can evolve along with critical technologies, providing a fixed point of stability for customers and serving as the platform for a radiating and long-lived product family.

Proprietary architectures in open systems are not only possible but also indispensable to competitive success – and are also in the best interest of the consumer. They will become increasingly critical as the worlds of computers, telecommunication, and consumer electronics continue to converge.

Architectures in Open Systems

In order to understand architecture as a tool for competitive success in information technology, consider first the many components that make up a typical information system and the types of companies that supply those components.

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Take the computer configuration in a typical Wall Street trading or brokerage operation. Powerful workstations with 50 MIPS (millions of instructions per second)—comparable to the power of standard mainframes—sit on every desk. The workstations are connected in a network so they can communicate with each other or with several

> Proprietary architectures are not only possible but also indispensable to competitive success.

others at a time. Teams of workstations can be harnessed together to crunch away on a truly big problem. Powerful computers called servers support the network and manage the huge databases—bond pricing histories, for instance—from which the workstations draw.

Such a modern network will be almost entirely open, or externally accessible by other vendors; critical elements, from perhaps as many as a hundred vendors, plug interchangeably into the network. The workstations themselves are from companies like Sun Microsystems, Hewlett-Packard, and IBM, or they may be powerful personal computers from Apple or any of a number of IBM-compatible PC manufacturers. IBM and Hewlett-Packard make their own workstation microprocessors; most workstation or personal computer makers buy microprocessors from companies like Intel, Motorola, Texas Instruments, LSI Logic, AMD, and Cyrix. Almost all the display screens are made in Japan by Sony, NEC, and many other companies; the disk drives come from American companies like Seagate or Conner Peripherals. The memory chips are made in Japan or Korea. The network printers will typically have laser printing engines from Japan or, if they are high-performance printers, from Xerox or IBM; the powerful processors needed to control modern printers will come from AMD, Motorola, or Intel. The rest of the standardized hardware components on the network, like modems, accelerator boards, coprocessors, network interface boards, and the like, will be made by a wide variety of Asian and American companies.

The network will have many layers of software, most of it "shrink-wrapped" from American companies. The operating system—the software that controls the basic interaction of a computer's components—may be a version of AT&T's UNIX, specially tailored by the workstation vendor, as with Sun and IBM, or it may come from a third party, like Microsoft. Many vendors, like Lotus and Borland, will supply applications software. The complex software required to manage the interaction of the servers and workstations on the network will, in most cases, be supplied by Novell. The software that converts digital data into instructions for printer engines is sold by Hewlett-Packard, Adobe, or one of their many clones. Each smaller element in the system, like a modem or video accelerator, will have its own specialized software, often supplied by a vendor other than the manufacturer.

It is possible to construct open systems of this kind because for each layer of the network there are published standards and interface protocols that allow hardware and software products from many vendors to blend seamlessly into the network. The standards define how programs and commands will work and how data will move around the system—the communication protocols and formats that hardware components must adhere to, the rules for exchanging signals between applications software and the operating system, the processor's command structure, the allowable font descriptions for a printer, and so forth. We call this complex of standards and rules an "architecture."

A small handful of the companies supplying components to the network will define and control the system's critical architectures, each for a specific layer of the system. The architectural standard setters typically include the microprocessor designer (such as Sun or Intel); operating system vendors (possibly Sun or Microsoft); the network system (usually Novell); the printer page-description system (Adobe or Hewlett-Packard); and a small number of others, depending on the nature of the network. Each of these is a proprietary architecture; although the rules for transmitting signals to an Intel processor, for example, are published openly for all vendors, the underlying design of the processor

> A small handful of innovative companies will define and control a network's critical architectures.

is owned by Intel, just as the design of Sun's operating system is owned by Sun, and so on for Microsoft's Windows/DOS, Novell's Netware, or Adobe's PostScript.

Companies that control proprietary architectural standards have an advantage over other vendors. Since they control the architecture, they are usually better positioned to develop products that maxi-

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mize its capabilities; by modifying the architecture, they can discipline competing product vendors. In an open-systems era, the most consistently successful information technology companies will be the ones who manage to establish a proprietary architectural standard over a substantial competitive space and defend it against the assaults of both clones and rival architectural sponsors.

It has been conventional wisdom to argue that users, and the cause of technological progress, are better served by *nonproprietary* systems architectures. This is emphatically untrue. There are many examples of nonproprietary architectures, like the CCITT fax standard or the NTSC television standard, most of them established by government bodies or industry groups. Because they are set by committees, they usually settle on lowest-common-denominator, compromise solutions. And they are hard to change. The NTSC has been upgraded only once (for color) in a half-century; committees have been squabbling over an improved fax standard for years. *Proprietary* architectures, by contrast, because they are such extremely valuable franchises, are under constant competitive attack and must be vigorously defended. It is this dynamic that compels a very rapid pace of technological improvement.

Architectural Competitions

The computer industry has been competing on architecture for years. Take the example of the product that established IBM's dominance in the mainframe computer business – the IBM System/360. The 360 was arguably the first pervasive, partially open, information technology architecture. In the late 1960s, once the System/360 became the dominant mainframe solution, IBM began to unbundle component pricing and selectively open the system, in part because of government pressure. Published standards permitted competitors and component suppliers to produce a wide range of IBM-compatible products and programs that were interchangeable with, and sometimes superior to, IBM's own. By licensing its MVS operating system to Amdahl, for example, IBM made it possible for Fujitsu, Amdahl's partner, to produce clones of the IBM mainframe. Much of what was not licensed away voluntarily was acquired anyway by the Japanese through massive intellectual property theft.

Hundreds of new companies selling IBM-compatible mainframe products and software placed intense competitive pressure on IBM. But they also assured that the IBM standard would always be pervasive throughout the mainframe computing world. As a result, even today IBM controls some two-thirds of the IBM-compatible mainframe market and an even higher share of its profits, not only for central processing units but also for disk drives, systems software, and aftermarket products like expanded memory. Because they have no choice but to maintain compatibility with the IBM standard, competitors must wait to reverse-engineer IBM products after they are introduced. Typically, by the time competitive products are on the market, IBM is well down the learning curve or already moving on to the next generation. And as the owner of the dominant architecture, IBM can subtly and precisely raise the hurdles whenever a particular competitor begins to pose a threat. For over 20 years, in generation after generation, IBM has played this game brilliantly and won every time.

> For over 20 years in the mainframe business, IBM has played this game brilliantly and won every time.

Ironically, IBM badly fumbled an equivalent opportunity in desktop computing, handing over the two most critical PC architectural control points – the systems software and the microprocessor – to Microsoft and Intel. Since any clone maker could acquire the operating system software from Microsoft and the microprocessor from Intel, making PCs became a brutal commodity business. As a high-cost manufacturer, IBM now holds only about 15% of the market it created.

In a related error, Compaq made the mistake of assuming that IBM would always control the PC architectural standard. On that premise, the company geared its cost structure and pricing policy to IBM's, only to find itself almost fatally vulnerable when the savage PC price wars of the early 1990s exposed the commoditized character of PC manufacturing. Tellingly, while IBM and Compaq struggle to eke out profits from their PC businesses, Microsoft and Intel are enjoying after-tax margins of about 20%, on sales of more than $4 billion and $6 billion respectively, and together they have more cash than IBM.

For a similar example, consider the case of Lotus. Lotus got its start in a market – spreadsheet software – where products are complex and feature-rich, hardly commodities. And over the years, the

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company acquired or developed a broad array of other products – Jazz, Manuscript, Improv, AmiPro, Notes, and Freelance – some of which are technically excellent. Lotus's competitive problem, however, is that these products lack any deep architectural commonality. Indeed, even the embedded spreadsheet software in the company's various offerings is incompatible from one to another.

Point product vendors like Lotus can be very profitable for a time. However, they are always at risk when an architectural leader changes the rules of the game. For example, while Lotus was accumulating a grab bag of point products, Microsoft was creating an architectural lock on the graphical user interface (GUI) for DOS-based computers. (See the insert "Scenarios for Architectural Competition: Graphical User Interfaces.") And Windows now defines the environment in which Lotus's software must compete. The great power of Windows is that it creates a relatively simple, intuitive, and reasonably uniform interface between a user and a very wide range of applications software. As users become accustomed to the greater ease of Windows, they insist on it, and point product vendors like Lotus are forced to adapt their software to run under the Windows architecture. But Microsoft also offers its own line of point products, like Excel and Word, and since they arguably better exploit the Windows architecture, they are steadily encroaching on Lotus's market share.

The irony is that for a time in the 1980s, Lotus had such a powerful market position that it almost certainly could have established a GUI standard itself. But the company neglected to do so. Such strategic errors spell the difference between an architectural winner and loser.

Principles and Phases of Architectural Competition

There are five basic imperatives that drive most architectural contests:

1. Good products are not enough. Products distribute architectures and can contribute to the success of an architectural strategy. However, as the case of Lotus suggests, good products alone are not enough. But if the sponsor invests heavily in continuous product improvement, products of only modest capabilities can become the basis for architectural leadership. For example, both Zilog and

Scenarios for Architectural Competition: Graphical User Interfaces

Graphical User Interfaces (GUIs) are the software that permits users to maneuver around applications visually – for example, issuing commands by pointing to icons – providing a simple, consistent method of working with many different programs. The evolution of the GUI market provides a dramatic example of the dynamics of architectural competition.

The original GUI was developed at Xerox's famed Palo Alto Research Center (PARC) and unveiled with the Xerox Star in the early 1980s. The Star was a brilliant achievement for its time – a high-performance, if very expensive, easy-to-use networked workstation. But it was a completely closed system; there was no published applications-program interface, so no one but Xerox could supply software to run on the Star. Its appeal was therefore far too limited ever to become a pervasive desktop standard.

Steve Jobs adapted the Star technology to Apple, but it took several tries before Apple began to make inroads in the GUI arena. Apple's first try was the Lisa, a substantially closed system that failed to attract any market share. The company got it more nearly right with the Macintosh. At least in later incarnations, the Mac has been hospitable to third-party software developers. It is considerably less expensive than the Lisa and has a superb operating system/GUI architecture. But Apple has still sharply limited its distribution potential by insisting on bundling its architecture with only its own, second-rate hardware. The Mac is hardly a failure, but had Apple licensed its systems software broadly, Apple and its microprocessor partner, Motorola, could have exercised the same architectural control over personal computing that Microsoft and Intel do now.

The operating system/GUI architectural struggle is far from over and will be one of the most heated competitive arenas of the 1990s. IBM OS/2 2.0 is technically excellent but suffers from a very late start; Microsoft's brand new NT system, which will run Windows applications, will raise the hurdles yet again. A variety of UNIX-based standards are alternatives to systems derived from the original DOS. And IBM and Apple have joined forces on a next-generation operating system/GUI in their Taligent partnership.

As the ongoing GUI contest suggests, architectural battles are fast-moving, hotly challenged, and rarely completely settled. The rewards to a winner, however, can be great.

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Scenarios for Architectural Competition: Video Games

The home video game industry, dominated by Nintendo and Sega, is a serious industry. Some 30 million American homes, or about 70% of all homes with a child between the ages of eight and twelve, own a video game. Both Nintendo and Sega sell video game consoles (basic, 16-bit, 286-level computers) with tightly bundled operating systems. Game software is developed by independent vendors under tightly controlled licenses but distributed only through the two companies' networks at hefty markups. Profits flow from game sales, not consoles.

Bundled architectures are ripe for attack by more open systems, just as the Apple II was overwhelmed by the IBM PC. In fact, a number of American companies have targeted the game market. Electronic Arts, for one, has won a copyright suit allowing it to reverse-engineer Sega's operating system. The availability of a Sega system clone would break that company's hold over game software and open up console manufacturing to cloners. Another company, 3DO (formerly the San Mateo Software Group), has plans to release a powerful consumer-oriented operating system that will be ideally suited for games. Specifications have been provided to a number of Asian manufacturers including Matsushita, a 3DO investor, for a CD-ROM-based console. Existing best-selling games, presumably, could readily be adapted to the new system; 3DO's objective is to own a Windows-like architectural franchise in the consumer world.

An interesting and potentially formidable dark-horse competitor is Silicon Graphics, a company that has built its industry-leading three-dimensional image manipulation technology into a billion-dollar business. From its original base in the engineering CAD industry, Silicon Graphics has found a new niche supplying the technology behind the spectacular special effects in Hollywood hits like "Terminator II." These systems could produce mind-boggling game effects; Silicon Graphics is known to have a consumer/game strategy underway.

All these companies have ambitions that extend well beyond toys. Games may be just the first of a series of image-oriented consumer platforms for everything from news services, home shopping, or endless entertainment services. On the principle that the low end always wins, such platforms eventually may supplant the current generation of personal computers. Microsoft and Intel beware.

AMD at various stages in the PC microprocessor contest made Intel-compatible chips that were superior to Intel's own; but neither company matched Intel's commitment to R&D, and both were left behind as Intel rolled out one generation of improved processor after another. Once an architecture is established, it in turn becomes a distribution channel for additional products, with the architectural controller's products holding the favored position.

2. Implementations matter. Manufacturing decisions are playing an increasingly important role in product strategy. But since successful architectures have a high design content and usually a high software content, manufacturing skills by themselves are not sufficient to prevail in architectural competition. Japanese and other Asian companies, for example, despite their great manufacturing prowess, have only rarely established architectural franchises. Generally, they have settled for positions as clone makers or commodity implementors. Perhaps the only area where Japanese companies have established proprietary control over an important architectural space is in video games. But even the leaders in this arena, Nintendo and Sega, are at risk. (See the insert "Scenarios for Architectural Competition: Video Games.")

While insufficient on their own, however, manufacturing skills may well be an essential competence for success in the architectural contests of the 1990s. The reason: implementation is increasingly becoming the key to winning architectural control. In microprocessors, for example, a good implementation can improve performance by a factor of two. That's why architectural leaders like Intel typically make their own chips. By contrast, Sun Microsystems has chosen to focus solely on the design of its

> Manufacturing skills may well be essential for success in architectural contests.

SPARC microprocessor, a decision that has been a source of recent difficulty for the company because subpar supplier implementations have compromised SPARC performance. High-quality implementations are equally important in the new generations of hand-held computers. Indeed, the more advanced information technology makes inroads into consumer markets, the more manufacturing skills will prove invaluable.

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3. Successful architectures are proprietary, but open. Closed architectures do not win broad franchises. Choosing the right degree of openness is one of the most subtle and difficult decisions in architectural contests. IBM opened its PC architecture too broadly – it should have, and could have, retained control of either or both the operating system and microprocessor standard. Apple made the opposite mistake of bundling the Mac operating system too closely to its own hardware. Sun, in contrast to Apple, opened its SPARC RISC architecture very early, both to software developers and processor cloners; it has the lead position in workstations, and its broad base of third-party software support has helped maintain customer loyalty though a series of technical stumbles. Autodesk's computer-aided design (CAD) software for builders is open to add-on third-party packages, like kitchen design tools, and its broad base of supporting software has given it control of a small but very profitable franchise.

4. General-purpose architectures absorb special-purpose solutions. Architectures that cannot evolve to occupy an ever-broader competitive space are dead ends. Wang's lucrative word processor franchise was absorbed by general-purpose PCs. Special-purpose CAD workstations from Daisy, Applicon, and others were absorbed by more general-purpose desktop machines. Special-purpose game machines will, in all likelihood, be absorbed by more general-purpose consumer systems.

5. Low-end systems swallow high-end systems. Minicomputers poached away huge chunks of mainframe territory and were assaulted in turn by workstations and networks. Workstations are under pressure by increasingly high performance PCs. Traditional supercomputers and very high-end mainframes are vulnerable to parallel arrays of inexpensive microprocessors. High-end data-storage systems are similarly under attack from arrays of inexpensive, redundant disks. Although IBM helped create the personal computer revolution, it steadfastly refused to recognize its implications. Until relatively recently, it even called its desktop products division "Entry Systems," ignoring the fact that today's microprocessor-based machines are a replacement for traditional computers, not an entry point or way station to them.

However, managers must keep in mind that even those companies that best follow these principles are not necessarily guaranteed continued success in the marketplace. Architectural contests typically move through a number of different phases, and only those companies that successfully navigate them all, maintaining their pace and direction in the fluid environment of rapidly evolving technologies, emerge as winners over the long term. It's a delicate balancing act, and one that requires ever-increasing flexibility as the technologies mature.

Architectures that cannot evolve to occupy an ever-broader competitive space are dead ends.

There are five principal phases to architectural competition:

Commitment. Architectural challenges usually emerge from the early-stage chaos of competing point products. Before the IBM PC, personal computers were rigid, closed systems that tended to bundle their own operating systems and applications software. Compaq had the insight that by purchasing a Microsoft operating system identical to that of the PC, it could ride the wave of the PC's success. Microsoft then insisted that all subsequent clone makers buy the same operating system and so seized the critical PC software architectural standard. Microsoft's insight was to realize that it was in an architectural contest and to take the appropriate steps, including steadily expanding the generality and scope of its systems to come out the winner.

Diffusion. Large profits come from broad franchises. Open architectures are successful because they can be broadly diffused. Xerox's Interpress page-description software, which converts digital data into printer instructions, is excellent but can be purchased only with Xerox high-end printers. Adobe, by contrast, has widely licensed its PostScript language and has become the industry standard setter. Intel widely licensed the early versions of its xx86 processors, then sharply restricted licensing of its 386 chip after the Intel standard had become firmly entrenched. IBM, on the other hand, has long resisted diffusing its mainframe and minicomputer software.

Of course, diffusion decisions are not without risk. Once again, balance and timing are essential. For example, Philips licensed its com-

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pact disc technology to Sony to increase market penetration. But Sony outperformed Philips and took half the market. Philips's standard was a static one that it never developed further.

Lock-in. A company has a "lock" on an architecture when competitors are trained to wait until the architectural leader introduces each new product generation. Intel and Microsoft, at least temporarily, seem to have achieved this position in PC markets. Sun was on the verge of a locked-in franchise in workstations but may have fallen short; the performance of its SPARC RISC processor design has been lagging behind the competition, and the company neglected to solidify its franchise by moving rapidly down to lower end platforms.

But lock-in is sustainable only when a company aggressively and continuously cannibalizes its own product line and continually and compatibly extends the architecture itself. This is a strategic choice that many companies find difficult to make. Often, managers become overprotective of the products that brought them their original success. IBM, for example, has frittered away a powerful lock on back-office transaction processing and operating systems. In a misguided effort to protect hardware sales, it has refused to release products, long since developed internally, that would adapt its best-selling AS400 minicomputer software to the RS6000 workstation. Such reflexive self-protection simply hands over a valuable franchise to the Microsofts and other vendors storming up from the low end.

Harvest. Of course, the ultimate objective of architectural competition is to win a market leader's share of the profits. Just to give one dramatic example, profit margins on Intel's xx86 family of chips are in the 40% to 50% range and account for well over 100% of the company's earnings. But no locked-in position is ever completely safe, and companies must be careful when they harvest not to rest on their previous successes. Indeed, Intel may have harvested too aggressively, drawing out spirited recent attacks by clone makers such as AMD and Cyrix.

Though painful, it is absolutely necessary to cannibalize old architectures.

Obsolescence and Regeneration. Just as products must be cannibalized, so must architectures themselves. The better the architecture, the longer its lifespan; but sooner or later every architecture, no matter how well designed, becomes obsolete. And before it does, the market leader must be prepared to move ahead, to do away with the old and introduce the new. Industry leaders often fail to cannibalize their old architectures, but although nothing is more painful, to do so is absolutely necessary. Otherwise, competitors quickly move to create and introduce rival franchises, and these eventually dominate the industry. IBM's failure to cannibalize its mainframe and minicomputer franchises provides a stark example of the catastrophic effects of waiting too long.

DEC provides another example. The company developed outstanding RISC products very early. But DEC declined to cannibalize its profitable VAX-VMS architecture because its VMS operating system, the source of its franchise, was tightly integrated with its aging VAX hardware. Predictably, DEC was beaten out by vendors such as Sun Microsystems and Microsoft, which didn't hesitate to move in with their newer, more powerful alternatives. (The main developer of DEC's advanced systems, Dave Cutler, is now in charge of developing NT for Microsoft.)

There are three lessons here. First, with better architecture DEC could have kept VMS alive longer. If VMS had been "portable," that is, not restricted to VAX hardware, DEC could have ported VMS to other vendors' hardware, making VMS an industry standard. Indeed, the company could have used RISC technology itself without losing its VMS franchise. Second, DEC would have been better off cannibalizing itself, rather than waiting to be cannibalized by others.

The third lesson, though, is the most important. As DEC's experiences with VMS and IBM's mistakes with the mainframe and minicomputer franchises show, the cultural and organizational structures useful for managing traditional, closed, integrated businesses will not work for companies that intend to compete with architectural strategy. In fact, we believe that architectural competition is stimulating the development of a new form of business organization.

This new structure, which we call the Silicon Valley Model, has major implications both for information technology and for many other indus-

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Scenarios for Architectural Competition: Page- and Image-Description Standards

Page- and image-description standards are rapidly evolving from their initial base in printers into a very large business that will transform the entire printing and publishing industry. Probably most published material is now captured in electronic format, and a major competition is shaping up for control of the standard for storage, transmission, and manipulation of complex text, images, and multimedia documents. The technology involved is extraordinarily sophisticated and processing-intensive. Data compression and decompression and image-manipulation algorithms tax all but the very fastest of available processors; data storage requirements are very large; and requirements for communications capacity outpace most conventional systems. All these hurdles are falling very rapidly before a wide range of technical advances.

At the moment, Adobe must be considered the front-runner in the standards contest. Its Acrobat product, due to be introduced this year, will provide the industry's most advanced storage, compression, and transmission capabilities. The first versions will permit users to annotate, but not edit, electronically stored texts. Later releases are expected to include editing options. Microsoft is mounting a major challenge, at least in the word processing of documents and fonts. The dark horse is Xerox, which traditionally has possessed a vast array of image- and text-oriented technologies that it somehow never manages to commercialize. A number of smaller companies have also planted their pennants, including, refreshingly, two from Europe, Harlequin and Hyphen. Hewlett-Packard and Microsoft have formed an alliance to stay in contention, but their solutions are, for the moment at least, quite limited.

An early inning in the contest will involve the possibility of creating a new proprietary fax standard. The combination of faxes with high-quality plain paper printers could induce a very substantial increase in fax usage, particularly if images are of sufficiently high quality to transmit pictures, working drawings, and the like. Two new products, PostScript for Fax from Adobe and Satisfaxion from Intel, provide much improved resolution and decrease the required data compression to allow existing low-capacity communication systems to handle complex images. Both interconnect with standard fax machines to send and receive low-resolution images.

tries. The model is still young and rapidly changing and although Microsoft probably comes closest, no company fits it perfectly.

Managing Architectural Competition: The Silicon Valley Model

The Silicon Valley Model arose a decade ago when early architectural competitors noticed that they faced the same problems in managing organizations that they faced with technologies and architectural strategies.

In retrospect, this is not surprising. Architecture responds to the same imperatives in both systems and organizations. It reduces complexity. It permits clean separation between centralized general-purpose functions and decentralized or specialized functions. It enables management of unpredictability and change; individual technologies, components, or products can be switched without the need to redo everything. For similar reasons, good architecture facilitates experimentation and competition: once the framework is specified, multiple approaches can compete without jeopardizing compatibility. And finally, a standard architecture permits many systems and organizations to be developed independently and still work together gracefully.

As an organizational paradigm, the Silicon Valley Model therefore has several characteristic features and advantages. Following are the most important:

1. Organizational architecture and decision making that mirror technical architecture. Any organization should develop and use good technical architectures. But Silicon Valley Model firms take an additional step: the structure of the firm itself mirrors the technical architectures it uses.

Thus, for example, Microsoft is structured so that its existing systems software and applications software are managed separately, as are new architectural efforts such as NT. In this manner, Microsoft can diffuse its applications across multiple operating systems (both its own and others, like the Apple Macintosh), while also marketing its operating systems by courting other vendors' applications. The two businesses can work largely independently, yet only Microsoft gains the benefits of their synergism. Most decisions can be made directly within the organization responsible for the relevant architectural domain; this minimizes complex vertical and horizontal debates.

2. Meritocracy and direct feedback. Silicon Valley Model firms enable and force direct performance

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feedback, at levels ranging from individuals to business units. At Microsoft, team members rate each other periodically in peer reviews. Outstanding performers are rewarded; laggards are warned, then fired. Technical expertise is required for a large fraction of senior management, and communication occurs directly between the relevant parties, unbuffered by hierarchy.

By contrast, performance ratings in traditional bureaucracies are determined by managers at higher levels, and compensation is rarely based on long-term corporate performance. The process is often heavily politicized; dissent is suppressed, and incompetence goes unpunished.

Architectural competition also exposes Silicon Valley Model firms to another form of peer review – product competition. To succeed as industry standard setters, firms must license their architectures to competitors, while also developing critical products themselves. As a result, each layer of the firm (and of the architecture) is exposed to direct competition and market feedback. Hence although Microsoft controls Windows, application groups still compete individually: Excel against Lotus and QuattroPro, Word against WordPerfect and AmiPro, and so forth. Architectural leadership provides an advantage, but prevents a cover-up. Silicon Valley Model firms are structured so that excellence is the only defense.

3. Clean boundaries, both internal and external. In architected corporate structures, organizations can create and dissolve alliances rapidly, both internally and externally. Organizations are very flat, and development groups have simple, clean interfaces to each other determined by architectural boundaries. Architecture and point products can be

> Silicon Valley Model firms take an additional step: the structure of the firm itself mirrors the technical architectures it uses.

kept apart. Moreover, products can invisibly incorporate architected "engines" developed by other organizations, including competitors. For example, a start-up called InfoNow has organized alliances involving itself, Microsoft, publishers, computer vendors, and other software companies. InfoNow packages software products, together with reviews and samples of them, which are preloaded for free on computers; the software products, however, are encrypted. Users can sample them, read reviews, and then purchase them by telephone, which triggers electronic decryption. Adding new software packages is trivial.

4. Internal proprietary control of architecture and critical implementations, externalized commodities and niches. Silicon Valley Model firms seek to externalize the maximum possible fraction of their total system, while carefully controlling those areas required to establish and hold an architectural franchise. Thus core development of the general purpose architecture is always internally controlled. So usually are critical product implementations, which cover the broadest markets and are required either for early diffusion or later harvesting.

> Broad, cost-sensitive markets are the strategic high ground, if covered by proprietary architectures.

Silicon Valley firms also carefully manage their dependencies, so as not to become unilaterally dependent on architectural competitors.

On balance, however, Silicon Valley Model firms are much less autarkic than traditional large firms. Niche products, commodity components, and architectures controlled by others are outsourced, and/or relegated to licensees. In fact, Silicon Valley firms actively seek to commoditize regions not under their control.

This yields several benefits. For one, companies can focus on what they do best and on the efforts critical to architectural success. For another, broad outsourcing and licensing create competition among suppliers and licensees, which broadens the market and benefits the architectural leader. PC price wars delight Intel, Microsoft, and Novell; IBM and Compaq take the heat.

Interestingly, this contradicts the 1980s conventional wisdom that firms should avoid broad, cost-sensitive markets in favor of high-price niches. In fact, the broad market is the strategic high ground, if it is covered by a proprietary architecture. Niche product vendors can make profits, but they will remain minor players.

5. Migration and evolution over time. Just as architectures evolve and eventually become obsolete, so too with organizations. Thus the firm's internal structure and external alliances evolve along with its architecture and market position. As new layers are added to an existing architectural position (Windows on top of DOS, then NT underneath Win-

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dows), new organizations are created; a similar situation occurs when an architecture must be cannibalized. Some Silicon Valley Model firms will soon face cannibalization; it will be interesting to see how they do.

Broader Implications of the Silicon Valley Model

The Silicon Valley Model is very much a product of a few companies in the computer sector, just as mass production was invented by Ford and just-in-time production by Toyota. And as in those cases, we believe that the Silicon Valley Model will diffuse throughout the broader information technology sector as the computer, telecommunications, information services, and consumer electronics industries merge.

In addition, however, as industrial competition in all industries becomes more complex and technological change accelerates, the model may have important effects upon many other fields. We think that it provides a framework that allows proprietary leaders in general to have the greatest span of control and profitability with the least complexity and smallest size. In fact, we think that the model is appropriate for small and large companies alike; it does, however, penalize unnecessary size. (Microsoft, with fewer than 15,000 employees, has a market capitalization equal to IBM's.) We will therefore close with an example of how architectural strategy and the Silicon Valley Model could have been used more than a decade ago, by Xerox.

Xerox became a large, global company through a single proprietary technology – xerography. Xerographic "marking engines" are the core of photocopiers, printers, and facsimile machines, all of which Xerox invented. But Xerox chose to exploit its control of xerography using the traditional strategy of integrated companies.

Where Xerox felt it could not develop products profitably itself, it simply left the market vacant. As a result, when the company's patent position eroded, Japanese competitors took the bulk of the blossoming low-end markets for personal copiers, laser printers, and fax machines. Xerox's market share declined from nearly 100% to about 30%.

Instead, Xerox could have developed an architecture for a broad family of machines and control systems, including interfaces for scanners, document handlers, and "finishers" for collating, stapling, and binding. It could have licensed its technology to other firms, and/or sold them xerographic engines. It could have developed products for core markets, leaving others to niche companies.

Every few years, the company could have changed or enhanced its architectures to improve its products and competitive position. The result could have been a Microsoft-like position, with Xerox holding the lion's share of the profits in a highly competitive, dynamic market – yet one under its own effective control. We think that similar strategies are available to companies in other complex industries – aerospace and machine tools, among others. If so, the information sector's strategic and organizational innovations might prove as interesting as its technology.

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TAB 17

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

HP Professional

HP Professional August 1994 v8 n8 p40(2)

The winds of change.

(Microsoft readying three 32-bit operating systems) (PC Tips)

Author

Keyhoe, Miles B.

Abstract

Microsoft is readying three new 32-bit operating systems, each of which includes powerful new features and backward compatibility with prior operating systems. Windows NT 3.5, code-named Daytona, features powerful, flexible networking capabilities that will enable Win NT systems to fit anywhere in an organization. Version 3.5 is Windows-based, although MS-DOS can be used if necessary. Windows 4.0, code-named Chicago, will provide the desktop with full 32-bit computing. Version 4.0 does not depend on MS-DOS and the eight-character limit for file names has been eliminated. Files will be referred to as objects. Some of the 'power user' features, such as the Windows Recorder, will be missing in the first version of Chicago. Microsoft is also developing the replacement for Windows NT, code-named Cairo, but it is not expected to be available until 1996.

Full Text

Change looms on the horizon. By this time next year, most of us will have first-hand experience with at least two of three new major Microsoft operating system releases. Representing a bold leap in technology, all three releases - code named Daytona, Chicago and Cairo - feature full 32-bit implementation, backward compatibility and some powerful new enhancements.

WINDOWS NT COMES OF AGE

Windows NT, the first 32-bit operating environment from Microsoft, has been shipping for almost a year. Although it brings a powerful platform to the enterprise, it is severely limited because it relies on MS-DOS as its foundation. Consequently, it has inherited all of the limitations we've been frustrated with for years: eight character file names, relatively slow and inefficient file systems, and a 16-bit architecture.

The next release of Windows NT (version 3.5), aka Daytona, marks what I believe is Microsoft's first "professional quality" release of NT. It features powerful and flexible networking capabilities that let Win NT systems fit anywhere in a corporation. And, with its Advanced Server edition it's primed to serve as an engine for enterprise computing.

Like its predecessor, Daytona can use MS-DOS as its foundation; but unlike earlier versions, Daytona doesn't require MS-DOS - it is finally a Windows operating system. However, giving up MS-DOS doesn't mean giving up MS-DOS compatibility. An important feature of Daytona is its ability to emulate MS-DOS to execute existing applications.

While Microsoft continues to position Daytona as shared resource or file server for networked Windows systems, it offers a great opportunity for power users and programmers to begin experimenting with 32-bit or multithreaded applications right away.

NEW YEARS IN CHICAGO

After spending a New Year's holiday in Chicago, I know I'd rather be anyplace but on the Lake Michigan shoreline in winter. But by December the direction of the computer winds will be turned toward Chicago. Not the city, of course, but the new Windows client software. Although some people have called the Chicago release "Windows 4," I've heard rumors that the product will be marketed as "Windows 95."

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No matter what it's called, Chicago will finally bring full 32-bit computing to the desktop. Unlike Daytona and other Windows NT releases, Chicago is intended to replace Windows 3.1 and Windows for Workgroups 3.11 on everyone's desk. Those of you who have used New Wave will feel right at home with Chicago.

In fact, the first time I saw Chicago working, it had the same dark green desktop that I've known in New Wave for years. Documents and applications are represented by icons. You can drag-and-drop documents onto applications or just double-click the document icons.

Because Chicago does not depend on MS-DOS, file names are no longer limited to eight characters. However, using a scheme similar to New Wave, Chicago maps long file names into unique eight character file names when you use existing Windows and MS-DOS applications.

Speaking of file names, you're likely to hear what we now call files referred to as objects in Chicago - more shades of New Wave. However, Chicago will store file extensions, or file types, along with the visible document name and the operating system will use a scheme much like the existing Registration Database to map applications to document types.

In the first release of Chicago, Microsoft will be giving up some of the traditional "power user" features. The Windows Recorder is likely to be missing, as well as a variety of other applications. Help will be much improved, with hypertext links between the help screen and the system utilities. For example, help on setting the system time will include a link to the Date and Time module of the Control Panel to change the time directly. This should make things easier for novices as well as for those of us who support them.

LOOKING FORWARD

Even further away from Chicago is Cairo, the eventual replacement for Windows NT. Don't expect to see this release until 1996. Cairo is to Windows NT what Chicago is to Windows. Like Chicago, it will feature a brand new user interface (probably one like Chicago). But like Windows NT, it will be the workgroup system that most individuals don't use at their desks. Because its release is so distant, it's hard to know just what will be included. But one thing is for certain - we'll probably wonder how we got by with plain old Windows 3.1.

Type
Column

Company
Microsoft Corp.

Product
Microsoft Windows 95 (Operating system)
Microsoft Windows NT (Operating system)

Topic
Operating System
Product Development
32-Bit

Record #
16 227 640

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TAB 18

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

1ST STORY of Level 1 printed in FULL format.

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InfoWorld

December 30, 1991 / January 6, 1992

SECTION: BUSINESS; One on One; Pg. 107

LENGTH: 955 words

94-1564 SS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

HEADLINE: Maples: No 'Chinese Wall' at Microsoft

BODY:

After spending nearly 20 years at IBM, Mike Maples several years ago became head of the applications division at Microsoft Corp. Then-Microsoft-president Jon Shirley said hiring the guy from Big Blue was the riskiest move of his Microsoft career. Well, the risk eventually paid off, because Maples is still guiding Microsoft's applications strategy and even had extra time recently to joust with InfoWorld Seattle bureau chief Stuart J. Johnston.

Johnston: How will modular applications work in the future using OLE?

Maples: First let me explain that our applications were just getting too big. Word 1.0 had about 37,000 lines of code, while Word for Windows 1.0 had 408,000 lines of code. I didn't want to be here when they built a 4-million-line word processor, so I talked to a number of people at universities about moving to object-oriented programming. "First fire all your programmers," they said. "Then throw away all your programs, because however you got started isn't good for object-oriented programming." That wasn't exactly what I had in mind.

So we came up with a way to break applications down into shared components. We developed an architecture, which we call OLE, that allowed these objects to be arbitrarily linked together. Then we took the drawing code from PowerPoint and the charting code from Excel out of the products and built these larger objects. That lets you use a charting function from one development effort across multiple products. It's good for the user because it allows them to have absolute consistency.

Johnston: I understand that the OLE spec is actually being driven by the systems side of the house, but a lot of the coding is done by applications.

Maples: The original code wad done only for apps as an internal development. Then we decided it was a generic thing that was valuable to give other vendors. We could have kept it proprietary but didn't. So we gave the responsibility for managing that to systems, which works with ISVs.

Johnston: But wasn't OLE codeveloped with Lotus, Aldus, and WordPerfect?

Maples: The No. 1 participant was Aldus. Aldus had another specification, so we decided to resolve a single spec. But that was just two app companies trying to make their lives easier.

Johnston: Other companies are saying privately, "These are systems issues but

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they are coming from the apps division, so there really isn't a Chinese Wall over there, and that's what scares us in competing with Microsoft."

Maples: There is no Chinese Wall. We don't want there to be a Chinese Wall, and I don't think we've ever claimed that there is a Chinese Wall. Microsoft is a single company. We have a single management executive in Bill. We don't try to pretend that there is a Chinese Wall, any more than there is at IBM or Apple or any other company.

Johnston: Yet I recall Steve Ballmer using the term Chinese Wall. He said the apps division got the information about beta code and new systems designs at the same time as the people outside and that they were, in fact, two separate companies.

Maples: I never heard that. I wouldn't argue that somebody said that, but I can tell you that I've never said that.

The bigger issue would be, if we were using secrets or undocumented things, and we very consciously avoid that. A long time ago, when Windows was barely being strapped together, there were cases where things were added to make [the applications division's] life easier, but they were added for other apps developers too. But right now, to my knowledge, there isn't a single undocumented thing in Windows that is used by a Microsoft application.

Johnston: Yet this issue was evidently in the Federal Trade Commission's mind after they did the first round of interviews with third parties then expanded their probe of Microsoft.

Maples: The only things that I've ever seen reported was that the FTC got a number of complaints that they were investigating. People can make up complaints about anything. I don't see that we are doing anything illegal, immoral or irrational, and it is certainly in our interest to have a lot of Windows ISVs. As soon as the ISVs believe the playing field's not level they'll pick another platform.

Johnston: At the Applications Horizon meeting last month there was a lot of hoopla attributed to you by The Wall Street Journal about how Microsoft, despite the FTC investigation, is trying to conquer the entire market.

Maples: That was very much out of context. The question was about market share on the Mac and how happy would you be if you had that share of Windows? It's fair to say that we want to compete vigorously, but we're doing that based on good products and good service. Every vendor would like world domincation and to have 100 percent market share, but to translate that as a goal is a real stretch of the imagination. Windows is on probably 30 to 40 percent of the machines being sold today. If you took the number of Windows sold as a percentage of the installed base, it's probably 8 percent, 10 percent. To dominate the market, Windows would have to triple its sales rate and you'd have to get every Windows app sale.

Johnston: But at that same conference, Steve Ballmer -- or maybe it was Bill Gates -- said by two years from now they expect most of the installed base to have migrated to Windows.

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Maples: I listened to every speech and I didn't hear that. To believe that Windows in the next year or two could penetrate the installed base would be a very difficult situation.
Mike Maples
Senior V.P. of Applications
Microsoft Corp.
Redmond, Washington
Age: 49

GRAPHIC: Picture, no caption

LANGUAGE: ENGLISH

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TAB 19

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

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/EMBER 16, 1992 THE VOICE OF PERSONAL COMPUTING IN THE ENTERPRISE VOLUME 14, ISSUE 46

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ENTERPRISE COMPUTING

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FILED

FEB 14 1995

U.S. District Court
of Columbia

Undocumented Windows calls

Deciphering the charges leveled at Microsoft

By Brian Livingston

We may never know the true status of the Federal Trade Commission's investigation of Microsoft Corp. unless the agency decides to go public with its case. But based on accounts by developers, a composite of the FTC's potential case against Microsoft can be drawn.

Research and interviews by *InfoWorld* have revealed at least half a dozen cases in which Microsoft allegedly withheld information on its DOS or Windows functions from outside developers, for periods ranging from six months to several years. During these periods, Microsoft's own developers appear to have used these functions in applications or utilities that competed with those eventually developed by independent software vendors, according to programmers who have examined the code.

In only one case (involving a version of Microsoft Excel) do the undocumented functions appear to have given a Microsoft application a performance advantage. But, in each case, the lack of documentation of the functions may have given Microsoft applications a time-to-market lead of six months or more before similar features could be incorporated into competing developers' applications, say critics of the Redmond, Wash., firm.

FTC INVESTIGATION. The FTC refuses to comment on pending cases (or even confirm that Microsoft is the subject of an investigation). Lacking hard facts, observers have assumed that the FTC is interested in possible anticompetitive behavior that Microsoft may have engaged in when marketing MS-DOS, OS/2, and Windows.

The tone of recent interviews sponsored by the FTC, however, suggests that the investigation has moved into a slightly different area: enforcing federal laws against unfair competition.

Microsoft enjoys at least a near-monopoly in the market for its two main products: DOS and Windows. Market analysts indicate that Microsoft controls more than 80 percent of the market worldwide for DOS-compatible operating systems, with most of the rest accounted for by Novell Inc.'s DR DOS (mainly in Europe and Asia). Microsoft's shipments of Windows amount to 100 percent of the market for Windows 3.1-compatible operating systems. Whether this market dominance has been taken advantage of by Microsoft is hotly disputed between Microsoft and its critics in the software industry.

Federal antitrust laws do not prohibit one company from "benignly achieving an overwhelming share of a market," according to Gerry Elman, CEO of Elman & Wilf, a Philadelphia law firm that represents software companies. The Federal Trade Commission Act, however, does prohibit "unfair methods of competition." This includes improper activities by companies that have a monopoly on a particular market, says Elman, who worked for six years in the antitrust division of the U.S. Department of Justice.

Because the relevant act is broad, the U.S. Supreme Court in 1972 clarified the definition of unfair competition. The Court upheld an FTC policy against practices that are: 1. prohibited by "common law, statutory, or other established concept of unfairness"; 2. "immoral, unethical, oppressive, or unscrupulous"; or 3. cause "substantial injury to consumers (or competitors or other businessmen)."

This definition is still quite broad.

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"The court interpreted congressional intent as granting the FTC wide discretion in identifying unfair behavior in the marketplace," Elman says.

OPERATING SYSTEM DEFINITION. Software developers do not complain about Microsoft reserving functions of its operating systems solely for the internal use of those systems. An operating system must, in fact, keep a certain number of functions to itself. Otherwise, applications using these functions could make the system unstable. It is only when Microsoft's utilities and applications use those "undocumented" functions that competing vendors complain.

Software vendors often make substantial amounts of revenue by selling utilities that supplement Microsoft's. Products such as the Norton Utilities, Mace Utilities, and PC Tools have been tremendous financial successes. Vendors use these revenues to fund the development of other applications, which may compete with Microsoft more directly. If Microsoft uses undocumented functions, which outside vendors cannot easily obtain, it would cut off a vital flow of cash for software development.

Consider MS-DOS. The DOS operating system consists of two hidden files that are installed on a PC's hard disk. In DOS 5.0, these files are called IO.SYS and MSDOS.SYS. These files provide the core services needed for Disk Operating System functionality.

Microsoft also sells utilities, such as COMMAND.COM, which act as "shells" for DOS but are not the operating system itself. COMMAND.COM is replaceable and competes with 4DOS, by J.P. Software; NDOS, a part of the Norton Utilities (which is based on 4DOS); and several other DOS shells.

Similarly, other Microsoft utilities, such as FORMAT.COM, are not the operating system, but use services of the operating system. These "external" utilities compete with Novell's DR DOS and other vendors trying to sell operating systems compatible with MS-DOS.

Windows, which Microsoft markets as an operating system, also has operating-system components and utilities. The operating system consists of three components: USER.EXE, GDI.EXE, and KRNLX86.EXE. Shells, such as Program Manager and File Manager, are not part of the Windows operating system. These shells can be replaced by other shells, which are run by Windows' three essential components. Program Manager and File Manager compete with Norton Desktop for Windows, WinTools, and numerous other products.

The distinction between the kernel of an operating system and utilities that are bundled with that operating system is often unclear, even within Microsoft. "What are the areas that third parties can and should market?" asks Cameron Myhrvold, product manager for the Windows Software Development Kit (SDK). "The shell is not something we have encouraged a lot of people to replace, because of the importance of a consistent interface."

But DOS and Windows, like most computer operating systems, are clearly made up of an essential OS kernel and simple but useful utilities that use the functions of that kernel. "Every operating system works that way," says Steve Gibson, the developer of SpinRite and other utilities. "You have a core operating system, and utilities that can't function without that core."

On top of its two operating systems, and the utilities bundled with them, Microsoft develops and sells applications. These applications usually compete with those of other vendors, who would like to make money selling similar or superior products.

If Microsoft withholds information about important features of its operating systems, then uses these features in applications or utilities that compete with other vendors, is it practicing unfair competition or merely managing its business well?

Developers themselves are of different minds. "My attitude toward the undocumented functions is it's a sort of a witch hunt," says Paul Yao, who leads Power Programming workshops for International Systems Design of Bellevue, Wash. "Yes, there are undocumented calls. At the end of one chapter of my book [Chapter 5 of *Peter Norton's Windows 3.0 Power Programming Techniques*, by Peter Norton and Paul Yao, Bantam, 1990], there is a statement not to use these calls." Yao believes developers who use these functions run the risk of their applications not working under a later version of the operating system.

With all these legal and technical issues, what is the FTC looking for in its investigation of Microsoft? The following details could influence a possible FTC challenge to Microsoft, according to statements from Microsoft competitors.

DID MICROSOFT USE UNDOCUMENTED DOS FEATURES? To understand the roots of the current controversy, it is necessary to go back to the release of DOS 2.0.

To a programmer, the behavior of DOS 2.0's PRINT.COM utility was unusual. A user was able to type a command, such as "Print Bigfile.txt," and almost immediately return to the DOS prompt. Users could start and run another program, such as Lotus 1-2-3 or WordStar, while DOS sent Bigfile.txt to the printer in the background. PRINT.COM knew how to terminate, yet stay resident in DOS — it was the first TSR program.

The function calls that allowed PRINT.COM to multitask were not described in Microsoft's reference books on DOS. In fact, many other function calls were not documented either.

Since it is a highly desirable feature for a program to be able to work in the background, programmers outside Microsoft began to puzzle out how this magic was accomplished. One result was a TSR called SideKick, released in 1984 by a tiny company now known as Borland International Inc.

SideKick, a personal information manager, was a remarkable success and was soon imitated by other programmers. Unfortunately, because Microsoft had not documented several functions necessary to write a reliable terminate-and-stay-resident program, many of these TSRs left out important safeguards. They crashed when more than one was loaded, or worse, they interfered with normal, foreground applications.

Under fire from Borland and other companies, Microsoft representatives in 1986 began to discuss publicly some of the secret functions. But the effort was too late. Swamped with mysterious problems, many PC managers adopted policies forbidding the use of TSR programs. Other than SideKick, no TSR became a best-seller.

Yet Microsoft released its own utilities that depended on undocumented TSR function calls. For example, Microsoft's CD ROM Extension program, MSCDEX.EXE, released in 1987, allows files on a compact disc to appear in the standard DOS file system. Microsoft representative Tony Rizzo said in the September 1987 *Microsoft Systems Journal*, a programmers magazine currently published by M&T Publishing of San Mateo, Calif., that Mscdex used something called the DOS "network redirector." But this capability remained undocumented and unavailable to developers of competing file-system products. (Technically speaking, Mscdex used undocumented Function 11 of DOS Interrupt 2F.)

Undocumented functions were also used in Microsoft debuggers, including Debug and CodeView. These debuggers call Interrupt 21, Function 4B, Subfunction 01. Microsoft's technical documentation for DOS listed only Subfunctions 00 and 03 until recently. Knowing the missing subfunction is a requirement for any company trying to write a competing debugging environment for programmers.

DID MICROSOFT USE UNDOCUMENTED FEATURES IN EXCEL? Today, Microsoft Excel is by far the No. 1-selling graphical spreadsheet. Lotus 1-2-3 for Windows did not appear on the market until 18 months after Windows 3.0, and Quattro Pro for Windows shipped just last month.

With its now dominant place in the market, it's easy to forget that Excel originally did have stiff competition. Under Windows 2.x, Excel had to face well-financed spreadsheet rivals such as Wingz by Wingz Software, and Full Impact from Ashton-Tate.

The failure of these products was widely attributed to their slower performance compared with Excel. Numerous published reviews from that era show Wingz and Full Impact lagging behind Excel.

Tim Paterson, the author of DOS 1.0,

What's the beef?

Critics of Microsoft accuse the company of using undocumented features of DOS and Windows in applications and utilities like the ones that independent software vendors also want to sell. The following are some examples of the controversy:

Function	Use by Microsoft	Discussion
• INT 2F Function 11	Microsoft CD-ROM Extensions	Undocumented DOS "network redirector" function also used for drive remapping
• INT 21 Function 4B 01	Debug and CodeView	Undocumented but required to write debugging environments for compilers
• DefineHandleTable	Microsoft Excel	Windows 2.x function, undocumented until made obsolete by Windows 3.0
• GetTaskQueue and DirectedYield	Quick C for Windows	Windows 3.0 functions; DirectedYield was documented in Windows 3.1 SDK, but not GetTaskQueue, which Microsoft describes as useless
• InitApp, InitTask, and WaitEvent	Windows 3.0 SDK compiler (1989)	Functions necessary to compile Windows applications, released to independent compiler vendors in April 1991.
• OLE 1.0 specs	PowerPoint	Critics charge PowerPoint was released with OLE support six months before OLE specs were released to competing vendors
• Drag-and-Drop Server API	File Manager 3.1	Not available to outside developers until after Windows 3.1 shipped.
• NT DLL functions	Pview	Win32 developers claim Microsoft's processor-view utility uses functions they cannot access for their own utilities

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revealed an important reason for this difference in a two-part article, "Managing Multiple Data Segments Under Microsoft Windows," published in the February and March 1990 issues of *Dr. Dobb's Journal* (M&T Publishing). Paterson and fellow programmer Steve Flenniken described undocumented function calls in Windows 2.x that allowed Excel to access large amounts of extended memory rapidly.

Specifically, Excel used undocumented functions of Windows 2.x named *DefineHandleTable*. Without these functions, Paterson and Flenniken wrote, an application's data was limited to "not more than 300K under the best conditions." However, they wrote, "Microsoft's own Windows applications use all of the techniques discussed here ... to build Windows applications with virtually unlimited data capacity."

The *DefineHandleTable* functions in Windows 2.x were documented by Microsoft in the Windows 3.0 SDK. But developers charge that this was too late, as the functions are no longer needed in Windows 3.0's protected mode.

DID MICROSOFT USE UNDOCUMENTED FEATURES IN QUICK C? On August 31, 1992, Microsoft released an eight-page statement and a 10-page white paper on 16 undocumented Windows 3.0 functions used by Microsoft applications. These functions were revealed earlier that month in *Undocumented Windows* (Addison-Wesley, Reading, Mass.), a book by Andrew Schulman (a former software engineer at Phar Lap Systems), David Maxey (a former Lotus developer), and Matt Pietrek (a California developer).

In its statement, Microsoft says, "Microsoft applications derive no unfair advantage from the few undocumented APIs that they call." Additionally, "Microsoft has also provided at least 26 ISVs [independent software vendors] with the information on undocumented calls in Windows."

Regarding some of the undocumented functions used by Microsoft applications, the white paper describes four of these functions as "documented in the Windows Software Development Kit (SDK), Version 3.1," six as obsoleted by Windows 3.1, and six more as undocumented but "with documented equivalents" or "entirely useless."

For example, the white paper describes the Windows 3.0 function *GetTaskQueue* as "undocumented," with "no equivalent, but useless." Another Windows 3.0 function call, *DirectedYield*, is described as being documented in the Windows 3.1 SDK.

Undocumented Windows coauthor Schulman charges, "It's dishonest for Microsoft to tag as 'Documented in SDK' functions that have only recently been documented in the 3.1 SDK, but that Microsoft [and others] were using long before 3.1. Timing is everything in this industry."

Schulman says that the *GetTaskQueue* and *DirectedYield* functions are essential to the working of Microsoft's Quick C for Windows and are, in fact, "crucial to writing an integrated development environment or debugger for Windows."

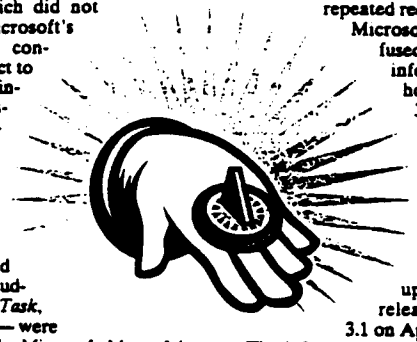
By disassembling QCWIN.EXE, the main executable file in Quick C for Windows, Schulman says he found at least three instances of the following code:

```
if (GetTaskQueue(hTask != 0)
  PostAppMessage(hTask, ...);
DirectedYield(hTask);
```

The first line of code determines whether a C application running in Quick C's development environment has set up a "task queue" for messages. If so, the second line posts a message to that queue. Finally, Quick C yields control to the application so it can process the message. This routine is necessary because sending a message to an application before it's ready can cause strange system crashes.

"We needed five undocumented calls to write debugging devices for Windows 3.0," says one developer for a major software firm, who spoke to *InfoWorld* only on condition of anonymity. "Meanwhile, Microsoft came out with these devices, and it wasn't until six months after the release of their [Microsoft's] debuggers that Microsoft provided the information."

DID MICROSOFT WITHHOLD THE "SECRET SAUCE"? According to *Undocumented Windows*, several undocumented calls — known among developers as the "secret sauce" — were used to compile Windows programs using Microsoft's own Windows 3.0 SDK, which Microsoft began selling in 1989. Competitors such as Borland, Zortech/Symantec, and other C language vendors could not create their own stand-alone Windows compilers, which did not require Microsoft's SDK, without conducting a project to disassemble Windows and discover these secrets.



After much criticism by competitors, several of these crucial, undocumented functions — including *InitApp*, *InitTask*, and *WaitEvent* — were finally unveiled by Microsoft. Most of the information came out April 9, 1991, in Microsoft's "Open Tools" binder, as well as being documented in the Windows 3.1 SDK later that year.

Unfortunately for Microsoft's competitors in the heated C-language marketplace, Microsoft had already shipped more than 48,000 copies of its SDK compiler by the time the Open Tools release took place. Critics of Microsoft argue that this gave the Redmond company a tremendous lead with corporate and commercial programmers, who were actively purchasing tools to create Windows applications.

Microsoft's Cameron Myhrvold argues that, far from giving Microsoft an advantage, the extra effort that Zortech and Borland put into their compilers increased their market share, at Microsoft's expense. "Zortech C was the first [stand-alone] compiler to ship for Windows in August of 1990, then Borland," says Myhrvold. "The first Microsoft C compiler that didn't need the SDK didn't ship until around Windows 3.1." As a result, Myhrvold says, Borland and Zortech now outsell Microsoft in C language compilers.

DID MICROSOFT DEVELOPERS GET ADVANCE OLE CODE? A hot new feature of Windows 3.1 is Object Linking and Embedding (OLE), a feature that allows users to place text or a graphic from one application into another and have it dynamically updated. Microsoft's documentation of the OLE 1.0 specification was released to developers in December 1990.

But Microsoft PowerPoint 2.0, which was shipping to paying customers six months earlier, already had support for OLE between its graphing and display modules, developers point out. PowerPoint had OLE hard-coded into it, rather than relying on external OLE libraries, as became possible later.

"I don't know how to call that one," Myhrvold says. "PowerPoint [developers] went ahead and shipped something before it was final, probably Version 0.8 or something like that." He explained that Microsoft is trying to work more closely with independent software vendors on the upcoming OLE 2.0 specification, beta copies of which were shipped to several dozen vendors two weeks ago.

DID MICROSOFT WITHHOLD DETAILS OF DRAG-AND-DROP? Windows 3.1 allows users to drag file names from the File Manager window and "drop" them onto other applications. The applications then automatically open or print the dropped documents.

Microsoft documented how a "client" application should respond to a file being dropped on it. But, despite repeated requests from ISVs, Microsoft pointedly refused to distribute any information about how the Windows 3.1 File Manager acts as a "server" for file names dragged out of its window, preventing developers of competing file managers from releasing upgrades with the release of Windows 3.1 on April 6, 1992.

The information needed for competing vendors to develop their own drag-and-drop servers remained undocumented until an article by Jeffrey Richter — the author of *Windows 3.1: A Developer's Guide* (M&T Publishing, 1991) — appeared in the May-June 1992 issue of the *Microsoft Systems Journal*. Even then, the information appeared only after attempts by Microsoft officials to suppress the article and after another publication threatened to run it. "The *Microsoft Systems Journal* article by Jeffrey Richter was stalled by Microsoft for months because of resistance in the company to publishing this article," says *Undocumented Windows* coauthor Schulman. Richter confirmed this saying, "It was held up by a Windows 3.1 product manager," whom he declined to identify.

"There were a number of vendors who figured out drag-and-drop," Myhrvold says. "With certain issues, we aren't going to sue Norton [Desktop] or stop them, but we're not going to assist them in doing a shell." Server drag-and-drop "wasn't implemented robustly in Windows 3.1, and we wanted to improve it [in a later version]. It's important for consistency for the user."

WINDOWS NT AND THE FUTURE. Outside developers have found parts of Windows NT that are undocumented but are being used in Microsoft utilities that compete with utilities they would like to sell. Although NT is still in beta testing, several vendors are already selling NT development toolkits to numerous commercial and corporate sites.

Microsoft's Win32 Software Development Kit (required for developing NT applications) includes a utility called Pview. This tool lets developers look at the tasks assigned to one or more processors. The utility uses functions such as *NtQuerySystemInformation*, *NtQueryPerformanceCounter*, and *NtQueryInformationThread*, according to Schulman. These functions, although contained in NTDLL.DLL (which will be included in the shipping version of NT), are all undocumented.

"If NT is to be successful," Schulman says, "won't it need the same kind of active third party-utilities market that DOS and Windows have? So won't developers need to be able to write their own utilities, such as Pview?"

Microsoft intends to provide this information to developers, Myhrvold says. "We're going to document the NT API. Some of it is in the NT DDK [Device Driver Kit]," which shipped to developers last week. "We're also looking at producing a technical reference, or putting it in the MSDN [Microsoft Developer Network CD ROM]. That will be forthcoming near or just after NT ships."

GOOD FOR BUSINESS? Is Microsoft's use of undocumented functions in applications and utilities that compete with independent software vendors something that developers (or the FTC) should complain about? Or is it simply good business?

For whatever reasons, Microsoft has become by far the world's largest software company. In the last four quarters (ending September 30), it had sales of $3.0 billion and net income of $773 million.

Microsoft's sales represent 7 percent of all sales made by U.S. companies in the "computer software and data processing" category, according to Media General Financial Services, a market analysis firm. But Microsoft's net income represents 25 percent of all profits made by those same firms — a fact that causes resentment among other developers.

Whether its share of the operating systems market has given Microsoft an unfair advantage in marketing DOS and Windows applications is open to dispute. What is certain is that Microsoft is now selling more than 60 percent of all Windows applications, according to Jesse Berst, editor of the *Windows Watcher* newsletter in Redmond, Wash., which tracks software sales.

Because of this dominance, some vendors argue that Microsoft should be broken into separate companies responsible for systems, languages, and applications. These "Baby Bills," like the "Baby Bell" telecommunications companies that resulted from the 1984 breakup of AT&T, would presumably improve competition.

Only history will tell if this is what the FTC seeks. Since the present FTC investigation of Microsoft will wind slowly through the courts — if the agency takes any action at all — it may be years before anyone knows the final outcome.

Brian Livingston is a contributing editor at InfoWorld and the author of Windows 3.1 Secrets (IDG Books).

Jeanette Borzo, Jim Hammett, Doug Barney, David Coursey, and Stuart Johnston contributed to this report.

MTC-00030631_0486

TAB 20

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

SOFTWARE

WINDOW MANAGER · BRIAN LIVINGSTON

Will 'Windows compatible' really mean what it says?

A DEVELOPER WITH WIDE-RANGING experience in Windows programming will announce a new book on Nov. 15 that will reveal many of the undocumented features Microsoft's Windows 95 shell takes advantage of.

Along the way, Andrew Schulman (co-author of *Undocumented DOS* and *Undocumented Windows*, Addison-Wesley, [800] 822-6339 or [617] 944-3700) shows who will benefit from the release of Windows 95 and who will be hurt. In particular, Schulman points to those developers who will be handicapped by some of the new requirements that Microsoft Corp. has tacked onto its "Windows-compatible" logo, which it licenses to vendors of shrink-wrap software.

In his new book, *Unauthorized Windows 95* (IDG Books, [800] 762-2974 or [415] 312-0650), Schulman lists these new requirements. Aside from the features an application arguably needs to qualify as "Windows 95 compatible" — it must be a 32-bit application, it must handle filenames longer than eight characters, and so on — there are several requirements that have nothing to do with Windows 95 compatibility. Quoting from *Microsoft Developer Network News*, July 1994 issue:

- It must run on Windows NT 3.5.
- It must have OLE 2.0 container and/or object and OLE 2.0 drag-and-drop support.
- It must include a Send or Send Mail command on the File menu (and support the Common Messaging Call API).

Although Microsoft allows some exceptions to the last two rules for applications that don't deal with files (such as games), all three of these new requirements have raised eyebrows with developers.

In his forthcoming book, Schulman writes: "Microsoft is simply raising the cost of developing Windows applications, and not necessarily in ways that will benefit end-users."

As examples, he cites the requirements to support NT and OLE. "The NT requirement seems like nothing more than an attempt to leverage Microsoft's control over the upcoming Windows 95 market to assist its lackluster Windows NT product. The OLE 2.0 requirement is odd, given that Microsoft itself hasn't used OLE for the Windows 95 shell."

That new shell is an application called EXPLORER.EXE. In recent betas of Windows 95, the line SHELL=EXPLORER.EXE appears in the SYSTEM.INI file, rather than SHELL=PROGMAN.EXE as in Windows 3.x.

In *Unauthorized Windows 95*, Schulman reveals that this shell application uses several as-yet-undocumented features of the new operating system. These calls include such intriguing-sounding functions as RegisterShellHook, FSNotify_HandleEvents, and SHFindFiles. These functions (and how they work) might be of no significance, except that many developers have expressed interest in selling improved shells to Windows 95 users.

It's easy to switch shells. Simply change the SHELL= line in SYSTEM.INI (or in the new Registry database, which will likely be the repository of this kind of information by the time Windows 95 is released). But developers will need to get or create documentation on these functions in order for their products to emulate Microsoft's own shell.

The NT requirement particularly bothered several developers I spoke with. As it turns out, NT differs from Windows enough that supporting both environments can be a full-time job. Some API functions use different parameters, some things that work in one environment don't work in the other, and so on.

I'd say the "Windows 95" logo is going to be meaningless in determining the real compatibility of new programs. I'll have more on this next week.

Brian Livingston is the author of Windows 3.1 Secrets *and* More Windows Secrets *and co-author of* Windows Gizmos *(IDG Books). Send tips to brian_livingston@infoworld.com, or fax: (206) 282-1248.*

Exh. 130

94-1561 SS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

MTC-00030631_0488

TAB 21

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

ORIGINAL

MICROSOFT CORPORATION

PERFORMANCE REVIEW FORM FOR EXEMPT EMPLOYEES

NAME: REDACTED POSITION TITLE: Group Product Marketing Mana

GROUP: Languages Marketing REVIEW PERIOD: April 87 - Sept 87

Instructions to the Manager:

1. Give the review form to the employee for their evaluation of work performed since the review.
2. Once completed, determine your own evaluation and ratings of the employee's performa Discuss these with the employee.
3. Finally, fill out the final overall rating below and jointly establish objectives and pertir performance factors for the next review period.

Instructions to the Employee:

1. In one or two sentences, describe the overall function or purpose of your position.
2. Complete both sections entitled: Major Activity/Objectives and Performance Factors evalua your performance since the last review.
3. Return the review form to your manager for his/her rating, and once completed, discuss ratings and pertinent performance factors for you and your position, and future objectives.

RATING DEFINITIONS: Ratings should be given in 0.5 increments. For example, 3.5 is a valid rating, but 3.7 is not.

(5) EXCEPTIONAL PERFORMANCE: Consistently exceeds all position requirements; v consistently exceeds quantity, quality, cost,, and time standards. Consistently meets hig standards of excellence.

(4) EXCEEDS PERFORMANCE STANDARDS: Consistently exceeds most position requirements expectations. Work exceeds most standards often; meets high standards of excellence.

(3) MEETS PERFORMANCE STANDARDS: Consistently meets requirements and job standards; require assistance with complex or new assignments. Work regularly meets standards of f competent performance.

(2) NEEDS IMPROVEMENT: Does not meet standards of the job consistently; may need additi time-in-job, further training or more than normal supervision; may meet some posi requirements but possess one or more performance deficiencies in critical job areas.

(1) UNSATISFACTORY: Falls short of minimum requirements in critical aspects of job.

FINAL OVERALL NUMERICAL RATING (to be completed by manager): _____
This rating should be a composite of the Major Activity/Objective and Performance Factor sections. Remember that 5 is high and 1 is low.

FILED

EMPLOYEE: REDACTED DATE: 11-2-87

FEB 14 1995

(Your signature does not necessarily mean that you agree, but affirms that this review has been discussed in detail with you.)

Clerk, U.S. District Court
District of Columbia

MANAGER: REDACTED DATE: 11/2/87

APPROVING MANAGER: _____ DATE: _____

Exh. 21 94-1564 SS

International Executive
BRIEFINGS

As Steve said, we toyed with the idea of responding with just mktg activity. But they best way to stick it to Phillipe is with product.

- free 2.01 update for word of mouth
- QB3 preannounce to hold off Turbo buyers
- free 2.01 → QB3 so they won't wait to buy.

QB4 is a Turbo killer.

If we mobilize now we can take advantage of this opportunity.

QB3 compares well with TB, but we all still looking for creative product ideas. If you have one, let me know.

We just got a QB2 survey back and we ~~DESPERATELY~~ wanted to know which product BASIC pgmrs would use.

[What was considered at purchase time?
[% that answered "very important"

- QB3 wins in categories customers care about most.
- don't know how we compare on reliability, exe speed, document.
- Customers want our goals to be...

If we do things right w/ QB3 we can beat Borland.

- Our future plans match w/ customers desires.
- Exe speed will have minor improvements
- Borland cannot match Int/comp pair
- We may revisit macros & user defined keys.

When we look at customer desires and the QB4 spec, I think we have a Turbo killer. We need to work like mad to have a winning version of QB3 to keep Borland from getting

MTC-00030631_0491

CONFIDENTIAL

MICROSOFT CORPORATION

PERFORMANCE REVIEW FORM FOR EXEMPT EMPLOYEES

REDACTED

NAME: _____ POSITION TITLE: Group Product Manager

GROUP: Languages REVIEW PERIOD: 11/86 - 5/87

Instructions to the Manager:

1. Give the review form to the employee for their evaluation of work performed since the last review.
2. Once completed, determine your own evaluation and ratings of the employee's performance Discuss these with the employee.
3. Finally, fill out the final overall rating below and jointly establish objectives and pertinen performance factors for the next review period.

RATING DEFINITIONS: Ratings should be given in 0.5 increments. For example, 3.5 is a valid rating, but 3.7 is not.

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(5) EXCEPTIONAL PERFORMANCE: Consistently exceeds all position requirements; wor consistently exceeds quantity, quality, cost, and time standards. Consistently meets highe standards of excellence.

(4) EXCEEDS PERFORMANCE STANDARDS: Consistently exceeds most position requirements an expectations. Work exceeds most standards often; meets high standards of excellence.

(3) MEETS PERFORMANCE STANDARDS: Consistently meets requirements and job standards; ma require assistance with complex or new assignments. Work regularly meets standards of ful competent performance.

(2) NEEDS IMPROVEMENT: Does not meet standards of the job consistently; may need addition time-in-job, further training or more than normal supervision; may meet some positi requirements but possess one or more performance deficiencies in critical job areas.

(1) UNSATISFACTORY: Falls short of minimum requirements in critical aspects of job.

FINAL OVERALL NUMERICAL RATING (to be completed by manager): _____
This rating should be a composite of the Major Activity/Objective and Performance Factor sections. Remember that 5 is high and 1 is low.

EMPLOYEE: REDACTED DATE: 5/4/87
(Your signature does not necessarily mean that you agree, but affirms that this review has been discus

MANAGER REDACTED _____ DATE: 5-4-87

APPROVING MANAGER: _____ DATE: _____

AJOR ACTIVITY/OBJECTIVE: *Compete with Borland*
y most important activity is to be sure that Microsoft competes effectively with Borland. This includes ollecting intelligence about Borland activities and products, making sure that our products are competitive, nd building awareness among end users and gateskeepers about how we compare with Borland products.

MPLOYEE EVALUATION:
verall, I did a very good job in the BASIC market and my work in C has been fair but not outstanding.

hen Borland announced TurboBASIC at the November Comdex, I collected information about his product nd moved quickly to formulate a response strategy. My strategy involved a rapid product response to urboB that could hold our position until QB4 (then called QB3) hit the market. I also proposed that we call QB3 instead of QB2.5 in order to make the release sound more significant. I worked with LenO and TomC o develop a QB3 spec that could beat TurboB. In addition to mobilizing development, I flew to Dallas to ttend a region manager's meeting where we formulated a retail promotion strategy intended to fill the hannels with QB before TurboB shipped. I reviewed the promotion plan with BillG before implementation egan. I also flew to LA to meet with KDP about the QB3 ad. In that meeting we decided that to compete ith Borland's inside-front-cover advertising, we would need to use a big media unit with heavy paper. I also ositioned QB against TurboB for the ad. RayKa and I met with CorpCom and came up with the idea of QB osters. I have also been working with the press to be sure that comparisons are not made against QB2 (see ress objective section). My rapid response strategy was correct; we would be in a very poor position today, f QB3 were not available (the Byte article bears that out). I was able to mobilize development, retail, and orpcom to respond to the TurboB threat. We have yet to see the ad, but I beleive that my decisions regarding he media unit and my positioning of QB3 are sound. The results of the spiff promotion have been spotty, few distributors have had success with it.

We are not as far along on the response to TurboC because we are further from product announcement. I developed a rollout plan for QuickC and CS that focused on minimizing Borland's first mover advantage by preannouncing with an aggressive communication campaign. I determined that we should preannounce in early June because that is when editorial should be light and it is when BillG speaks at BCS. At SteveSn's suggestion, I worked with KathrynH to make the BCS announcement a real extravaganza. I also proposed a new early beta program for QuickC that would help us to get press coverage sooner after shipment. I chaired a meeting with BillG, JonS, and SteveB to run through the plan. While we were well prepared to discuss QuickC they were more interested in discussing how we would protect our high end product. This meeting would have gone better if I had met with Bill first to determine an appropriate agenda. We still need to figure out how to protect the high end product from price cutters. We should be prepared to offer a stripped down high-end compiler (i.e., no CodeView, and no QuickC) at a lower price point if TurboC begins to cannibalize the high end.

MANAGER'S EVALUATION AND RATING: 4+

did a very good job shaping our product direction in response to the Turbo Basic product announcement. Alternative strategies were formulated, evaluated, and a decision was reached swiftly. role in this was highly analytical; in the future, should strive to play a more active role in driving the decision process.

The marketing response to Turbo Basic was mixed. did a good job working with the press - although, the final results remain to be seen. Also, the User Group program appears to be going well. wever, other promotional programs were haphazard at best - and our educational thrust is virtually one existant. More creativity is needing in developing marketing programs, and better follow-through is required to implement.

played an important role in Turbo C product response, although the contribution was not as significant as Quick Basic. We all missed the boat on the key marketing issue - a preliminary discussion with Jons would have prevented this. Again, needs to be more pro-active in driving

)

)

ACTIVITY/OBJECTIVE: *Public relations*

is my responsibility to get coverage for our language products, and to be sure that the coverage is fair and curate. My activities include press planning, tours, issueing press releases with followup, and working with viewers.

MPLOYEE EVALUATION:

have made some strides with the press in terms of getting them to use our benchmarks. I am working th PcMag to help them develop a set of benchmarks for testing BASIC and C compilers. They also ntacted us before printing their QB benchmarks. We identified problems in their tests and worked with em to correct the problems before the article was run.

y press trips for FORTRAN got us news coverage in InfoWorld, and PC Week. We will also see feature ticles in Computer Languages, PC Tech, Dr. Dobbs, and probably Byte. For this trip I put together a esentation and materials that emphasised the connection between FORTRAN and C, and defined our longer rm strategy for optimization. That approach was very well received by the press because C is hot and cause of the long term strategic implications of the optimization work.

have been working with PC Tech, PcMag, and Computer Languages on QB3. They have held off on their mparison articles until version three, but they have all said they would not wait for version four. My cision to release a QB3 has proven to be correct.

also formulated the PR strategy with Waggener for FORTRAN, QB3, QB4, and the C preannouncement. hese plans have all been approved and I think have some exciting elements.

ve. A. I think that our relationships with the press have been very good with the notable exception of Byte. is my goal over the next six months to turn that relationship around.

ANAGER'S EVALUATION AND RATING: 5-

greed. The only thing I would add is to continue to improve your listening skills during visits with he press.

TAB 22

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Exh 22
94-1564 SS

Multimedia Systems

Development Partner Program

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Program Application

Please return signed copy to:

Cornelius Willis
Microsoft Corporation
Multimedia Systems Group
One Microsoft Way
Redmond, WA 98052-6399

Submitted by:

_____
Company

_____
Signature

_____
Name

_____
Title (CEO, President or Key Manager with overall responsibility for this project)

Microsoft Confidential

The Multimedia Systems Development Partner program exists to provide developers with necessary and appropriate resources, education, and support to ensure the successful and timely implementation of their projects.

Microsoft views Development Partners as essential parts of our multimedia business plan. This application will help us understand your company's ideas and qualifications. It will also help us to assess your product's development and introduction schedule so that Microsoft may determine your level of interest and commitment. Qualifying for this development program may later entitle you to participate in a marketing support program. Please fill it out as completely as possible and return it, along with all requested materials, to the address indicated on the cover. Microsoft looks forward to your participation in what we expect to be an extremely successful multimedia marketplace.

Developer Information

Company Name

Address

City *State* *Zip*

Telephone *FAX* *Telex*

Development Contact *Title* *Phone*

Marketing Contact *Title* *Phone*

Please describe your company's important business relationships (distributors, venture capitalists, etc.) on a separate sheet.

Company Background

Type of company: ____ *Publicly held* ____ *Privately held* ____ *Subsidiary*

If publicly held please include annual report

Name of parent (if subsidiary)

_____ *Number of employees* _____ ~~Gross annual sales~~

Primary business activities:

_____ business software
_____ productivity software
_____ education software
_____ entertainment software
_____ personal productivity software
_____ development tools
_____ other software publisher
_____ consumer information
_____ business information
_____ CD-ROM publisher
_____ on-line information provider
_____ other electronic info publisher
_____ magazine, newspaper publisher
_____ broadcast media producer

Product Information

Proposed product areas (check all that apply):

Applications:

____ adult education
____ business productivity
____ business information
____ consumer information
____ entertainment / games
____ home business
____ home management
____ K-12 education
____ music
____ on-line services
____ personal creativity
____ personal development
____ publishing
____ reference
____ other applications
_____
_____

Tools:

____ animation editing
____ authoring / scripting tools
____ image processing
____ music editing
____ programming tools
____ search / retrieval engines
____ sound processing
____ storyboarding / prototyping
____ other data preparation
_____
_____
____ other programming tools
_____
_____
____ other tools
_____
_____

Current Products

Current key software products (in order of market share and importance to your company):

Product name	*Description*	*Supported Platforms*
Product name	*Description*	*Supported Platforms*
Product name	*Description*	*Supported Platforms*
Product name	*Description*	*Supported Platforms*

Please include any appropriate product descriptions or brochures with this application.

Developer Qualifications

What is the extent and nature of your group's relevant technical experience, particularly in the areas of multimedia production, Microsoft Windows or other windowing systems programming, or new technology implementation in general?

ıncept Description

(Please respond to the following questions on separate sheets).

Please provide a short conceptual description of your product(s).

How will you enrich your application so that it is compelling, makes use of this machine, and helps to define multimedia personal computing?

Describe a typical user session with this product. What will a user experience?

List a "table of contents" for this product. If it consists of only one thing (such as "a game") then list its components as appropriate.

Is this product based on an existing application? If so:
On which product is it based ?
What is the history of this product?

Market Analysis

Who is the target audience for your product?

Explain why you think this is an important product for the machine introduction.

What is the proposed price of your product?

What competition do you perceive for this product? How will you differentiate this product from its competition?

Product Development

What is your expected shipping date for retail distribution? _____

When do you project that you will reach these project milestones?

Software Design Complete	*Date*
Alpha Level Code	*Date*
Beta Level Code	*Date*
Final product available for shipment	*Date*

Do you perceive any other critical milestones in your development schedule?

If any of the above milestones are contingent on external events, please indicate below:

How is this project funded ? (Please answer on a separate sheet).

Microsoft Corporation
16011 NE 36th Way
Box 97017
Redmond, WA 98073-9717

Tel [illegible] 8080
Te
Fax [illegible] 8101

Microsoft

August, 1990

Multimedia Windows Pre-Release Program

This paper will give you important information about Microsoft's plans for the Multimedia Windows Pre-Release Program and information on how to use it most efficiently.

Multimedia Windows Pre-Release Program Objectives

1. Distribute pre-release software and documentation to qualified developers.

2. Relay information and schedules to multimedia developers in a timely, efficient manner.

3. Educate hardware and software developers on the capabilities of Multimedia Windows.

4. Obtain valuable feedback about Multimedia Windows that will continue to enhance and improve it.

The success of Multimedia Windows system software and its applications depend upon effective communication between Microsoft and the hardware and software communities. Microsoft is committed to this mutually beneficial relationship.

Requirements for Participation

To participate in the Multimedia Windows Pre-Release Program, your company must meet all of the following requirements:

1. Sign the enclosed Pre-Release Program Non-Disclosure Agreements

Enclosed you will find a non-disclosure agreement for the Multimedia Windows Pre-Release Program. By signing this agreement, you agree to participate in the program under confidential restraints, meaning that you will not discuss any information that you receive from Microsoft about this Windows product with anyone outside of your company. This requirement will be in place until Multimedia Windows is publicly announced. Enclosed you will also find a master Non-Disclosure Agreement. A completed copy of this Agreement must be on file at Microsoft and covers additional confidential information you may receive as a participant in the Multimedia Windows Pre-Release Program.

2. Submit a program application to participate in future support programs and to include your company in the Multimedia Windows Hardware and Software Directory database.

By submitting the program application, you become eligible to participate in future technical seminars or marketing programs that Microsoft may offer to Multimedia Developers. Furthermore, this application allows our staff to build an accurate database of active developers and vendors involved in this program so that we can better track your interests and your needs. This tracking system will become even more important as the program grows.

MTC-00030631_0500

When Microsoft announces its plans for Multimedia Windows, we may publish a directory of company names and product summaries derived from this database. Until that time, the list will only be available to developers in the Pre-Release program.

3. Include a check or P.O. for $495 to Microsoft

This fee enrolls you in the Pre-release program and covers the cost of technical support until product release. A majority of the support for the Pre-Release program will be conducted via Microsoft OnLine, our electronic technical support service. Microsoft will use this communication service to inform participants of plans, changes, and updates. We may also provide incremental software releases via OnLine, which you can download at your convenience. Any feedback or problems you encounter with the product must be reported through Microsoft OnLine.

This special OnLine account will allow your development staff to ask questions about Windows 3.0, the Windows 3.0 SDK, Multimedia Windows MDK and DDK, and the Microsoft languages and tools that support multimedia software development under Windows 3.0. It will also provide them access to all Microsoft product information in the OnLine Knowledge Base.

4. Sign the signature block at the end of this letter, and return the entire package.

By signing this letter, you indicate that you have read and understand this letter and agree to abide by the Pre-Release Program objectives and intentions.

What you can Expect from the Multimedia Windows Pre-Release Program

If you meet all of the above requirements, you will become an on-going member of the Multimedia Windows Pre-Release Program. After Microsoft receives the signed agreements, and application, your Microsoft OnLine account will be activated or modified and your company and product summary entered in the Multimedia Windows database.

Microsoft Online Account

When you return your signed OnLine Agreement, you will receive a Microsoft OnLine access ID number that can be used to access Multimedia Windows pre-release information. OnLine documentation and software will also be sent to all new subscribers.

If you already have an active OnLine Account, a special Multimedia Windows-specific OnLine account will be set up for you. The Multimedia Windows Pre-Release access number for Microsoft OnLine will be dissolved at the termination of the Pre-Release program. You may continue to use the existing account until your Microsoft OnLine subscription terminates. Renewal of your OnLine account will be at the standard price of $795.00.

If you would like to change the billing name and address for that account please fill out the information below:

_____ Yes, please change billing name/address for Windows Pre-Release OnLine access ID number

_____
Billing contact name

_____
Billing company name

_____
Billing address

_____

_____
City State/Country Postal Code

International Developers:

International developers are not required to obtain a Microsoft OnLine account. Instead, please contact your local Microsoft Subsidiary for information on their support programs.

_____ check here if you will be obtaining support from a Microsoft Subsidiary

2. *Review/Sign/Copy/Return the enclosed Non-Disclosure Agreement*

As stated earlier, these agreements allow us to disclose confidential information about our product development plans without compromising marketing plans that we have. If you have any questions about the agreement, please state them in a letter and send to Multimedia Windows Product Marketing address listed below. Since there is no signature block for Microsoft, your copy of each agreement is all that is needed for your records.

If there is a business reason for you to communicate information to another company, please outline your needs/reason and the contact information for that company and return this letter to the Multimedia Windows Product Marketing address given at the end of this letter. You will be notified of the outcome of your request.

3. *Complete and return the enclosed Development Program Application*

If you are currently working on a Multimedia Windows product but would prefer not to be listed in the distributed directory, your information will be kept confidential until you notify us otherwise. Please mark your preference on the application.

If your company is considered a Corporate Account and are using Multimedia Windows as an end-user product only, it is not necessary to complete this step.

TAB 23

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

2ND STORY of Level 1 printed in FULL format.

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Network World

July 25, 1994

Exh. 23
94-1564
FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

SECTION: TOP NEWS; Pg. 4

LENGTH: 724 words

HEADLINE: Microsoft free at last?;
Ruling still lets firm incorporate apps in its OSes.

BYLINE: Michael Csenger and adam Gaffin

BODY:

Washington, D.C.

The antitrust settlement Microsoft Corp. reached with the Justice Department skirted an issue central to network users, paving the way for the software giant to continue integrating applications with its desktop and network operating systems.

The consent decree, announced July 16, focused almost entirely on the way Microsoft sold operating systems to hardware vendors. But it does not prevent the company from integrating applications into the operating system itself.

Competing software vendors such as Lotus Development Corp. had long alleged that Microsoft's applications division received unfair information from its operating systems division that gave the company a leg up on the competition.

Some analysts and users said the decree, which also poses stricter controls on the royalties Microsoft can collect from personal computer vendors, leaves the path clear for Microsoft to mop up competitors that sell stand-alone applications, resulting in more limited user choice down the road.

SKEPTICISM

But others said Microsoft has yet to prove to the market that it has operating systems and networked applications worth betting a business on.

"A lot of its networking products are either futures or first-generation products," said Jamie Lewis, president of The Burton Group, a Salt Lake City consulting firm. The company faces entrenched and growing user bases for both Novell, Inc.'s NetWare operating systems and Lotus' Notes groupware applications, he said.

Users also expressed skepticism.

"Microsoft promises Chicago and Cairo and a whole lot of networking, but the question is, will it work before they run out of cities to name these things

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Services of Mead Data Central, Inc.

after?" quipped a network manager whose major brokerage house network runs on Unix.

Windows NT is not a truly open environment, he said, "Because if Gates doesn't have it then neither do you, and I'd rather not put myself in his hands. That's why we've standardized on Unix for our trading floor."

Frank Caro, technology transition team leader for Otis Elevator Co. in Farmington, Conn., cited interoperability problems with Microsoft's current Windows implementation of Transmission Control Protocol/Internet Protocol as an example of the company's network shortcomings.

"We've been trying to get into the networking capability of Microsoft's products and find there's one common theme: NETBIOS," Caro said. Microsoft does not yet support native TCP/IP, but uses NETBIOS or NETBEUI encapsulated within TCP/IP, he said.

"We're totally uninterested in any approach like this; it can't handle a network of more than 50 users and is terrible over the wide area," Caro said.

And Windows NT has proved unable to handle the applications that Otis wants to take off its mainframe system, because Windows NT is not a multiuser environment.

But Caro respects Mi-crosoft's ability to change course as necessary and awaits the promised native TCP/IP support in Chicago.

"That one feature alone is going to cause dramatic change in network connectivity," said Nick Lippis, principal at Strategic Networks Consulting, Inc. in Rockland, Mass., referring to Windows' TCP/IP.

Native TCP/IP support for Chicago could help Mi-crosoft cut into Novell's in-stalled NetWare client base by providing an alternative to Novell's Internetwork Packet Exchange (IPX) protocol. If the desktop operating systems supported TCP/IP directly, "why continue with IPX?" Lippis asked.

NOVELL NOT WORRIED

"I laugh when I hear people say it's all over for Novell now, we should pack up and go home," said David Bradford, vice president and general counsel for Novell.

"Microsoft has come against Novell [several] now with their networking products, and we've beat them every time," Bradford said.

Bradford also noted that this consent decree does not close Microsoft's books forever. "They will be monitored, perhaps even more so than before," he said. "The industry and consumers have an ally in the Justice Department."

Frank Dzubeck, president of Communications Network Architects, Inc., in Washington, D.C., agrees that the case may not yet be closed.

"If Microsoft gets very aggressive and starts burying things in their operating systems, then this whole issue will be revisited, he said. But it will

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MTC-00030631_0505

require that another company first go bankrupt."

LANGUAGE: ENGLISH

LOAD-DATE-MDC: July 27, 1994

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MTC-00030631_0506

TAB 24

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

C1

Business Day

MONDAY, JULY 18, 1994

The New York Times

Microsoft's Barely Limited Future

By JOHN MARKOFF

Special to The New York Times

SAN FRANCISCO, June 17 — Rather than reining in the Microsoft Corporation, the consent decree that the Justice Department announced over the weekend with Microsoft, the world's largest software publisher, frees the company to define the computer industry's ground rules through the rest of the decade.

News Analysis

The agreement leaves untouched what many computer industry executives say is Microsoft's principal advantage — that it develops both the basic operating-system software that makes personal computers run, known as MS-DOS, and applications software, like word-processing programs or spreadsheets, that perform specific tasks.

"Microsoft's whole empire is based on the interlocking nature of their operating-system and application software," said William Joy, a founder of Sun Microsystems, and the author of one version of the Unix operating system.

Not a Central Issue

Microsoft officials said Saturday that issues related to the relationship of their operating software and their applications programs had not been a focus of their recent negotiations with Justice Department officials.

MS-DOS and the Windows program, which makes DOS easier to use, are installed in millions of computers worldwide. While the Justice Department has decided that Microsoft does have a monopoly in operating systems, it insists that the licensing changes the consent decree spells out provide a remedy.

Yet many Microsoft competitors see a broader problem, as well: the line between where the operating system ends and the applications programs start is increasingly being blurred by advances in technology.

Smaller competitors with innovative ideas in businesses as diverse as electronic mail, file compression, which creates more storage space on a disk, and screen savers, which prevent damage to monitors, are finding that their business is evaporating because Microsoft keeps adding such programs to its operating system as it periodically brings out an updated version.

A Microsoft's operating system scheduled for release next year, called Chicago, will accelerate the process. The program will merge DOS and Windows and will include electronic mail, remote access, file-searching functions and screen savers.

Since introducing MS-DOS in 1981, Microsoft has continually campaigned to expand the definition of what computing functions belong inside the computer operating system. The early versions of DOS were small programs that did little more than control the storage and retrieval of data and start and stop applications programs. But in the 14 years that followed, Microsoft's operating systems have greatly expanded the services they provide to users and programmers.

The other important issue not specifically addressed in the consent decree is whether Microsoft has been able to leverage its virtual monopoly in operating systems into domination

Continued on Page C5

Microsoft At a Glance

1993 MARKET SHARE IN SOFTWARE

Microsoft

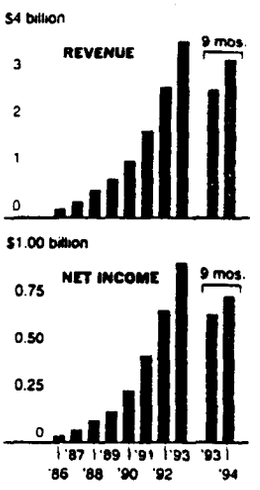
OPERATING SYSTEMS
I.B.M. 17.3%
Apple 2.2%
Novell 14.3%

SPREADSHEET APPLICATIONS
Lotus 37.0%
Other 2.7%
Borland 6.6%

WORD-PROCESSING APPLICATIONS
Wordperfect 35.7%
Lotus 3.7%
I.B.M. 3.1%
Other 9.3%

FINANCIAL PERFORMANCE

Fiscal years ended June 30



Sources: Computer Intelligence Infocorp, company reports

The New York Times

Ahead for Microsoft: Barely Limited Future

Continued From First Business Page

of applications software — a far bigger and more lucrative market.

This matter is of great concern to companies like Lotus Development, Borland International and Novell, and its recently acquired Wordperfect — which specialize in applications software. About half of the 50 million computers that run Windows, for example, use Microsoft's word processor, called Word, and its spreadsheet, Excel.

It was for that reason that lawyers at the Federal Trade Commission toyed two years ago with the idea of breaking Microsoft into two companies. More recently, Justice Department investigators are believed to have studied ways of creating some sort of "Chinese wall" that might limit the information traveling between the two sides of the business.

Anne K. Bingaman, Assistant Attorney General in charge of antitrust matters, refused to comment on the issue. But in response to a question whether the department had considered trying to split Microsoft, she said Saturday that her lawyers had looked at "every possible legal theory."

Linkage Is Soft-Pedaled

In an interview today, Ms. Bingaman acknowledged that the decree was silent about any linkage between Microsoft's power in operating systems and its growth in applications software. But she also said the Justice Department had decided against pursuing a "second range of issues" that had been raised by the F.T.C.'s earlier investigation.

"All I can tell you is we filed the complaint based on what we decided were the problems that needed to be corrected," she said.

What the consent decree announced on Saturday did achieve was this: Microsoft agreed to change the way it deals with the companies that make the hardware for personal computers, freeing them to offer customers a choice of operating systems. Microsoft will also alter its software-licensing policies and the way it gives information to software developers.

The expectation is that personal computer makers like Compaq, Dell and others will now be more receptive to the operating systems made by Novell, International Business Machines and Sun Microsystems.

Software companies will be able to develop versions of their programs for Microsoft's operating systems without making exclusive commitments to Microsoft, leaving them free to create applications for operating systems that other companies have designed.

Yet while the consensus is that Microsoft's influence will continue to increase, computer industry executives are divided over whether its power and influence will be good or bad for consumers.

"Microsoft has become the I.B.M. of the 1990's," said J. Paul Grayson, chairman and chief executive of Micrografx, a software publisher in Richardson, Tex. "There are issues for anyone who wants to participate in this market because of their size and scope. Anything the Government does to slow them down would be welcome."

Believes Bigger Is Better

But others in the industry believe that Microsoft's strategy is benefiting consumers.

"If you really care about improving the personal computer, you want Microsoft to take over all the pieces of the pie," said Stewart Alsop, editor of Infoworld, a weekly computer-industry newspaper.

Competitors like Novell, which were otherwise pleased by the agreement obtained by the Justice Department, said they were disappointed that the Government had not forced Microsoft to disclose information about new versions of its operating systems in ways that would level the playing field for developers who are competing with Microsoft applications.

A software giant's double identity is not addressed in its U.S. accord.

The company's competitors have argued that Microsoft has gained a special advantage for its applications programs by using hidden operating-system features and providing earlier access to technical information for its programmers.

Microsoft officials said the Government had found no evidence that such a special advantage existed. "We don't think this is market power in the traditional antitrust sense," said William H. Neukom, the company's vice president for law and corporate affairs. "Anyone can come in and upset you with better technology. We think it's a ferociously competitive business."

While the agreement may aid some companies like Novell, which makes a Microsoft-compatible operating system, it will not affect Microsoft's power with respect to smaller software developers.

"Microsoft will continue to be very powerful," said Martin Goetz, a co-founder of Applied Data Research, the nation's first software company. "The Justice Department hasn't listened to the cries of the software companies."

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Exh. 24 94-1564 55

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TAB 25

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Michael J. Miller

Exh. 25
94-1564 SS

The World According to Microsoft

FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

If you think Microsoft is too dominant in today's computer industry, a quick look at where the Bill Gates juggernaut is headed may prove disheartening. Already the leading provider of operating systems and office productivity applications, Microsoft wants to carry its success over to other areas, ranging from interactive television to financial services. With its recent announcements, acquisitions, and introductions, Microsoft is making its goal clear: It aims to become a ubiquitous part of tomorrow's information infrastructure.

THE RIGHT TOOLS

While Intel seems to face more competition than ever, Microsoft's position in the operating-system market has gotten stronger. The reason for this continued success is twofold. Confusion and a lack of focus from OS competitors—such as IBM and Apple—certainly helped, but Microsoft also gave itself quite a boost by developing tools like Visual Basic and Visual C++.

Not too long ago, Borland surpassed Microsoft in the quality of its tools. But more and more, the big firms I talk to are moving to Microsoft tools. This kind of support gives Microsoft the ability to decide which technologies to push and which platforms to support, as well as which technologies to license and which to keep for itself. For instance, Microsoft was first on the market with products that really supported OLE 2.0. Now that it wants OLE 2.0 to be widely supported, it has done a very nice job of making OLE support easier by providing Wizards in its Visual C++ package.

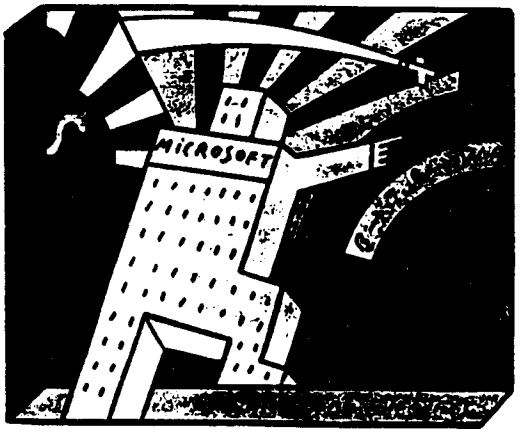
Microsoft wants OLE to be the object standard, and wants to establish it before OpenDoc or Taligent gets off the ground. Microsoft even wants to control object standards on other platforms, hence its introduction of tools that make it easier for developers to take Windows applications and move them to other platforms, such as Macintosh, with built-in support for OLE. Not only does this kind of accommodation push Microsoft's APIs, it also makes it easy for vendors to use Windows as their primary development platform, regardless of what their target system might be. This will, of course, lead to code that is optimized for Windows. (Okay, Microsoft is a bit confused here. This is because part of the company wants to protect the rights of its Word and Excel teams by insisting on special terms for using the cross-platform code for people who write word processors or spreadsheets.)

THE RIGHT NETWORK

The dominance in tools, applications, and operating systems may be just the beginning. Consider Microsoft's recent announcements, such as Microsoft Network, a new on-line service that will be bundled with Windows 95.

Microsoft Network, once code-named Marvel, may well be the first thing users see when they start the new operating system and it may be the best way to get Microsoft support. If users choose to subscribe to Microsoft Network, the company could wind up getting a steady stream of $4 to $5 a month from everyone on its operating system, and that could mean several hundred million dollars a year.

Microsoft isn't the only one with this idea. IBM is doing the same thing with OS/2 Warp by bundling in Internet access through its Advantis service, which then sets up a continuing monthly fee. In fact, you can almost view these two operating systems as loss leaders for their suppliers' on-line services. Since Microsoft is in a position where its operating system is dominant, however, users will be more likely to try its network service first. In order to be successful, Microsoft Network doesn't even have to be the best on-line service; it just



Microsoft plans to be the backbone of tomorrow's information infrastructure.

by Mans Bishofs

MTC-00030631_0510

Michael J. Miller

needs to be good enough and the most convenient. And including Microsoft Network with Windows 95 will certainly help.

Now take Microsoft's recent plans to acquire Intuit with its Quicken personal finance program (which links to a check-paying system), and add that to the likelihood of Microsoft Network's success. Because of its size, Microsoft is in a better position to work out relationships with large banks and other financial players. Imagine how Microsoft could extend electronic banking onto an online service such as Microsoft Network. Microsoft could require just a small service charge on each transaction. Or it could make money on the float—the interest in the few seconds it takes to move money from one place to another. Or both.

Microsoft's success in one area helps it extend its success in other areas. Because Windows is so successful, developers must develop for it. If Microsoft Network becomes successful, more developers and content publishers will support it. The same reasoning will apply to Microsoft's Tiger system for delivering video and other content to set-top boxes, or even to the far-off plan of developing wallet PCs with access to financial information.

UNCHARTED WATERS

All this may sound inevitable, but it isn't. First of all, no one—not even Bill Gates—is successful with every product he introduces. Just think about Microsoft Money. And does anyone out there remember the first Microsoft Access, the abortive Crosstalk competitor? Not too many folks, obviously, or Microsoft couldn't have recycled the name for use on its database.

Microsoft still has a lot of strong competitors who envision a different future. Novell, for instance, is still the clear leader in network operating systems and has recently announced plans with General Instruments, the leader in cable set-top boxes.

To date, Microsoft's track record in communications products is less than stellar. Lotus's cc:Mail and Notes have a larger market share than Microsoft Mail. Notes practically defines groupware and Lotus's plans to make Notes a wide-area product through its relationship with AT&T makes it a strong competitor in the world to come. Micro is getting into areas where it will face competition, in addition to its tradition software competitors, from banks to tele sion and cable companies. In many cas these firms have unique relationships wi customers or content that Microsoft ca easily duplicate.

The more Microsoft focuses on pushi its existing platforms and operating syste the more likely it is that there will be so outside force, some new technology, th Microsoft either won't see or won't comm to quickly enough. This would leave roo for new competitors. Remember, it was too long ago that IBM, Digital Equipme Corp., and Wang were the dominant info mation companies, and look what happene when the technology changed.

Still, if you're worried about Micros oft dominance today, you have good reason. I may foreshadow a future where Microso has a hand in every area of your life—fro communications to entertainment to pay ing your bills. The road to this future won' be easy, but Microsoft is very determined and is certainly in a better position tha almost anyone else to ride out th inevitable storms. □

If the electronic office is here, how come people keep handing you pieces of typed paper, faded faxes, photo-copies and newspaper articles for you to include in your report? Even attempting to type it all in is a mistake. But it's got to be done one way or another.

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TAB 26

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

PCWEEK
THE NATIONAL NEWSPAPER OF CORPORATE COMPUTING • JULY 25, 1994 VOLUME 11, NUMBER 29 $3.95

DOJ accord fosters 'too little, too late' perception

NEWS ANALYSIS 'Chinese wall' sidestepped, but some see new opportunities

BY JANE MORRISSEY

The Justice Department and the European Commission won several concessions from Microsoft Corp., but observers doubt the consent decree they agreed on will have much effect on the company or its competitors.

The government got Microsoft to give up per-processor licensing and other business practices and will monitor its compliance for six and a half years, but left untouched its ability to preferentially share operating-system information with its application developers.

The consent decree will be open for public comment within the next 60 days, after which a federal judge will offer a final ruling. Legal experts expect the court to uphold the decree.

Although the government could take further action and Microsoft could face lawsuits from competitors, most observers said both are unlikely because of the time and expense involved. Microsoft competitors may have to live with the outcome, but many are not satisfied.

"Anyone who said this decision went far enough isn't in touch with the industry," said Ed Zander, president of SunSoft Inc., Sun Microsystems Inc.'s software unit. "Of the three or four issues [the DOJ] could have worked on, they picked the least contentious. The 'Chinese wall' is more substantive."

IS managers take sides; despite the agreement, the government's Anne Bingaman and Microsoft's William Neukom still don't see eye-to-eye; Microsoft financials, meanwhile, are strong. Page 110

But Microsoft officials, citing legal precedents to back them up, said they were able to convince the government that such exclusionary sharing is well with-

SEE JUSTICE, PAGE 110

FILED
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Clerk, U.S. District Court
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SS

MTC-00030631_0513

Justice

from page 1

in their rights. "We encourage our systems people to talk with the apps people about potential new operating-systems features," said Chairman Bill Gates.

Operating-system makers such as IBM, Novell Inc., Taligent Inc., Geoworks, and SunSoft said they were were encouraged that Justice took the actions it did on per-processor licensing practices.

"We're going to jump all over this," said Lee Reiswig, president of IBM's Personal Software Products division, in Austin, Texas. "It means a level playing field for us for the first time. We have the opportunity to hit the OEMs."

"It will help us in the future in not disadvantaging us with a pricing mechanism," said Joseph Guglielmi, chairman and CEO of Taligent, in Santa Clara, Calif.

But some said it is too little, too late. "To the extent [Microsoft's behavior] prevented other operating systems from succeeding, that war is over," said Mitchell Kertzman, chairman of Powersoft Corp., in Concord, Mass. "DOS is it and Windows is it. The decision has close to zero impact."

Novell, one of the instigators of the government inquiry, said the decree is a good first step in addressing its concerns. The Provo, Utah, firm will discuss at an upcoming board meeting whether to submit objections or initiate litigation.

"Sure, I am somewhat disappointed," said Novell General Counsel David Bradford. "Nevertheless, I understand how the Justice Department and the EC got to where they did. . . . They did all in their power, given the political and legal environment."

Bradford expects the decree to help Novell fight the next-generation operating-system battle. "The 32-bit OS market has not been won by anybody," he argued. "This decree will allow for freer competition."

A major disincentive to bringing its own charges against Microsoft is Novell's recent desire to forge a better relationship with Microsoft. Novell CEO Bob Frankenberg met earlier this month with Gates to re-establish ties that had broken off under Novell Chairman Ray Noorda.

"Noorda called us Nazis and, so far, Frankenberg hasn't engaged in that type of thing," Gates said, declining to elaborate on any new accords. "We're not going to conduct this phase in a fishbowl."

Additional reporting by Mary Jo Foley, Norvin Leach, and Sam Whitmore

THE CONSENT DECREE

OEM licensing practices

- no per-processor licensing deals
- no minimum volume commitments required from OEMs
- no contracts longer than one year; no penalty for non-renewal
- no restrictions on OEM's licensing or sale of non-Microsoft operating systems
- no requirement that OEMs license DOS to gain a license for Windows

Non-disclosure agreements

- duration not to exceed the product's release, public disclosure by Microsoft, or one year, whichever comes first
- cannot restrict third parties from developing software that runs on competing operating systems

THE CONSENT DECREE DOES NOT ADDRESS:

- Microsoft benefiting from operating-system knowledge to develop applications, such as Microsoft applications group getting advance notice on operating-system advancements, and the use of undocumented APIs
- Microsoft acquiring technology from third parties under guise of making a deal

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TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

Jesse Berst

Berst Mode

Behind the smoke, Microsoft wins again

I know you've all heard about the settlement between Microsoft and the Justice Department. But I thought I'd tell you some inside information that hasn't made it into the press releases and official statements.

WHY DID MICROSOFT REALLY DECIDE TO SETTLE? Because the Justice Department and the European Commission both said they would sue unless Microsoft agreed by July 14.

WHY DID THE JUSTICE DEPARTMENT REALLY DECIDE TO SETTLE? Because it got to wave the flag and talk in its most grown-up voice about protecting consumers without the risk of lengthy litigation—litigation it probably would have lost.

DOES THE AGREEMENT REALLY CHANGE ANYTHING? No. Microsoft has always let hardware manufacturers make other kinds of deals. But the price for those deals was so much higher that no one could afford to use them. Everybody ended up making per-processor arrangements whereby they ultimately paid Microsoft royalties for every machine shipped. There were always escape clauses. It's just that nobody could afford to take them. Now those escape clauses have been codified into the agreement. Because of the economics, however, few will use them, at least not in the short term. As for non-disclosure agreements, Microsoft was in the middle of creating a new standard agreement anyway.

How pathetic to see Janet Reno prattling on about "lower prices immediately."

WILL CONSUMERS REALLY SEE LOWER PRICES? How pathetic to see Attorney General Janet Reno prattling on about "lower prices immediately." If the decree had come five years ago, when there were viable MS-DOS clones, it might have had some *immediate* impact. Now, in a world where MS-DOS is on the way out and Windows has no real clones, it will have no short-term effect.

WHAT CHANGES WILL REALLY COME ABOUT BECAUSE OF THE SETTLEMENT? Very few. It will be *slightly* easier for computer firms to sell NetWare-ready servers without incurring financial penalties from Microsoft. In the long term, it may be *slightly* easier for a firm to introduce a new operating system.

WHO'S THE REAL WINNER? Microsoft. It gets two governmental bodies off its back. And it does so without admitting that it was wrong, without being forced to divest or break up, and without paying a cent in fines or restitution.

Best of all, it has the opportunity to restore its image just when it needs it most. Microsoft wants to be a dominant player in the enterprise market. To do that, it must convince global corporations that it is a trustworthy long-term partner. That job would have been much harder if governments on two continents were filing lawsuits. The company might as well have changed its slogan to "Microsoft—the most antitrusted name in the business."

HOW DO MICROSOFT'S COMPETITORS REALLY FEEL ABOUT THE SETTLEMENT? They feel like schoolboys who complained about a bully stealing their lunch money and the teacher let the bully keep taking money for four more years while "investigating"—and then let him off with a token promise to be a good boy from now on. And he even got to keep the money he had collected.

Still, I think the announcement will ultimately benefit the rest of the industry. It frees them from their silly fantasy that the government was going to come riding to their rescue. Now they can get back to competing on the basis of better products and features, not better lawyers and lobbyists. ■

JESSE BERST IS DIRECTOR OF THE WINDOWS SOLUTIONS CONFERENCE & EXPOSITION. IF YOU WANT HIM TO CONSENT TO YOUR DECREES, CONTACT HIM VIA E-MAIL (JBERST@ZIFFMAIL.COM) OR FAX (208/883-1452).

94-1564

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

MTC-00030631_0516

TAB 28

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Microsoft's Marvel beta leverages Win 95 desktop

Exh. 28
94-1564
FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

BY EAMONN SULLIVAN AND MATT KRAMER

The Microsoft Network, Microsoft Corp.'s new on-line service, is taking the first steps toward joining the ranks of more established services such as CompuServe and America Online by tying itself into Windows 95's navigational tools.

PC WEEK LABS BETA SIGHT

Also known by the code name Marvel, Microsoft Network will reach beta testers in large numbers as part of the second major beta version of Windows 95, due this week. PC Week Labs took a look at the on-line service on a late-release candidate of the second beta.

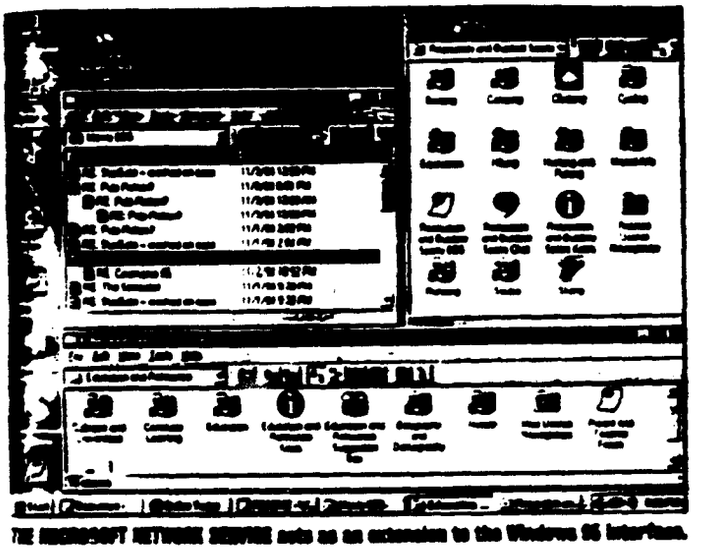
Microsoft Network's on-line services are well-integrated into the Windows 95 user interface. The content is very sparse at this stage, but once populated with information service providers, Microsoft Network may prove to be a valuable information source for Windows 95 users. The information that is available is well-organized into a hierarchy of folders and icons.

Navigating discussion groups and chat areas was similar to navigating local files and folders. Windows front ends to America Online and CompuServe, in contrast, are separate applications.

With Microsoft Network, we were able to create a link (called a Shortcut) to a discussion group and place the link on the Windows 95 desktop, where it appeared like any other folder. When we double-clicked on the discussion group, Windows 95 automatically re-established our connection before opening the icon.

Shortcut icons can be embedded as Object Linking and Embedding 2.0 objects, allowing users to distribute them.

Messaging services are just as well-integrated. We could use the standard Microsoft Exchange E-mail client included with Windows 95 to compose and send messages. ■



THE MICROSOFT NETWORK SERVICE acts as an extension to the Windows 95 interface.

MTC-00030631_0518

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IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

PCWEEK

THE NATIONAL NEWSPAPER OF CORPORATE COMPUTING • NOVEMBER 21, 1994 VOLUME 11, NUMBER 45 $3.95

PC vendors allege undue pressure from Microsoft

BUNDLING IBM, OEMs contend strong-arm tactics

BY MARY JO FOLEY AND LISA DICARLO

LAS VEGAS—IBM and other major hardware OEMs are complaining that Microsoft Corp. is unfairly pressuring PC vendors to refrain from bundling OS/2 and PC-DOS with their PCs.

Also last week, Microsoft disclosed to hardware OEMs at Comdex here the Windows 95 MDA (Market Development Agreement), outlining proposed licensing fees, incentives, and compliance criteria.

Concerning OS/2, the hardware makers claimed that Microsoft officials threatened to delay, if not withhold entirely, delivery of Windows 95 code; reduce market-development funds; and withhold sales and support training for vendors that offer IBM's OS/2 or PC-DOS preloaded on their systems, sources said.

Sources said IBM and the hardware vendors have held periodic discussions with the Department of Justice about the alleged unfair Microsoft practices. IBM, the Justice Department, and the vendors declined official comment.

"The [Justice Department] has turned into a Better Business Bureau for anyone who wants to shoot off a complaint against Microsoft," said David Williams, group manager of Microsoft's Personal Operating Systems Division, in Redmond, Wash. "We've got some salespeople who sometimes can go too far." Williams said he was unaware of any new filings regarding Microsoft with the Justice Department.

"The playing field is not level.

SEE BUNDLING, PAGE 138

NEWS

ning OS/2 Warp, said the source.

"There's about 15 things in there where you get $3, $2, or $1 off if you do things like put the Win 95 logo in national advertising," said another OEM.

"There are strong merchandising incentives [in the MDA]," said Steve Lair, Toshiba vice president of marketing, adding that he didn't see anything in the agreement that overtly demanded exclusivity to Microsoft's products.

In the weeks leading up to Comdex, Microsoft made it clear to OEMs that it could make the transition to Windows 95 a costly and bumpy move, according to one of the sources.

Hardware and operating-system vendors complained privately that despite the proposed Justice Department consent decree—which required Microsoft to alter its OEM licensing and non-disclosure agreement practices—Microsoft has done little to modify its behavior.

With the MDA, "we are not doing per-system incentives for OEMs. That would be in violation of the consent decree," said Microsoft's Williams. "Instead, we're offering incentives for OEMs who go that extra mile in marketing Windows 95," he said, specifying financial, training, and joint promotional incentives. ■

Additional reporting by Neal Boudette, Dan Farber, and John Dodge

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Bundling

from page

and we have a problem with that," said an executive with a hardware maker, who requested anonymity. Other hardware vendors, fearful of reprisals from Microsoft, also requested anonymity.

One Microsoft customer said further complaints to the Justice Department against the company would not affect any business dealings. "We've been through this DOJ stuff with the old IBM," said Pete Bavoso, vice president of information systems with The Darby Group Co., a medical supplier and PC Week Corporate Partner in Westbury, N.Y.

As for the MDA, several hardware makers complained about the high royalties that could hike PC prices as well as the stiff provisions for preloading.

However, they also said the licensing figure is a mere trial balloon floated by Microsoft, with Windows 95 not scheduled to ship until mid-1995.

Also at Comdex, several PC vendors claimed to have been discouraged by Microsoft from demonstrating IBM's OS/2 Warp at the show. Hewlett-Packard Co. and Packard Bell were among the companies that decided at the last minute against showing OS/2 as a result of implied and suggested retaliation from Microsoft, according to several sources close to the companies.

Officials with HP, of Palo Alto, Calif., and with Packard Bell, in Chatsworth, Calif., declined to comment. Dell Computer Corp. and Toshiba America Information Systems Inc. showed OS/2 Warp in their booths.

"Microsoft has been very aggressive about staving off the IBM assault," said another OEM source. "There were indications that the smoothness and flexibility of bundling Windows 95 would have been jeopardized" if the vendor showed systems run-

94-1584

FILED

DEC 14 1995

U.S. District Court
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MTC-00030631_0520

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APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

Microsoft's on-line rivals could end up in 'cyberia'

Jesse Berst
Berst Mode

Microsoft has promised to bundle an on-line service called The Microsoft Network into Windows 95 next summer or fall. If that occurs, I predict that competing on-line services will be sentenced to a long, cold winter of discontent. Microsoft's service will have an unbeatable edge over CompuServe, Prodigy, America Online, and other rivals.

I'm not an expert in antitrust law, so I don't know whether this advantage is illegal. But I do know it feels unfair. It feels like Microsoft is using a monopoly in one area to gain a monopoly in another. Microsoft may change its terms and conditions before the final release. But as I understand it right now, OEMs will be forced to include MSN. What's more, customers will not be informed they have alternatives.

Let's say XYZ Co. makes a deal to bundle a special Prodigy package with each computer. It even goes to the trouble of arranging for a Prodigy sign-on screen to appear the first time the customer boots up.

When XYZ ships its Win 95 PCs, it will have to include The Microsoft Network sign-on. XYZ may not want to promote MSN. It may have given money or other consideration to Prodigy in return for the bundle. Yet, as far as I know, XYZ won't be able to turn off the built-in MSN screen.

In essence, OEMs will be *forced* to distribute MSN if they want to access Windows 95—even if that distribution is to the OEMs' detriment.

I also worry that consumers won't realize they have options. It's as if your local phone company were to automatically sign you up for AT&T's long-distance service without letting you know that you have other choices. And I worry that Microsoft will use the MSN "registration" procedure to read information about customers' computer configurations and send that information to a Microsoft database. At least one other company (Delrina) has used on-line registration to scan and store configuration info.

Now, *that* would be a competitive advantage—if Microsoft knew the names of millions of Windows users and knew exactly what hardware and software they owned.

GULAG IMBROGLIO. I have no evidence that Microsoft intends to secretly capture and store configuration info. But the fact that I worry about it points up how Microsoft creates problems for itself.

These fears are feeding the mounting opposition to Microsoft's Intuit purchase and to The Microsoft Network. The Justice Department is being pressured to open another investigation—pressured by the same competitors that Microsoft cavalierly dismisses as "whiners" (to quote a Microsoft exec). Luckily for Microsoft, it has so much money it can afford to waste millions in legal fees. It looks like it will get a chance to do just that very soon.

RESPONSE OF THE WEEK: From system analyst Jim Gavnor of Columbus, Ohio: "The likelihood of a Big Crash on the Internet decreases daily. Links between one portion of the net and another may temporarily go down, but the Internet's genesis was in a Department of Defense project to create a data network capable of withstanding a nuclear attack. Truly crashing the Internet for an extended period would require a bankrolled effort on the level of the most professional modern terrorism. However, I agree that the tourists will start leaving. While Mosaic may be pretty, interaction requires both action and thought, foreign concepts to the passively entertained masses." ■

JESSE BERST IS THE EDITORIAL DIRECTOR OF WINDOWS WATCHER NEWSLETTER. CONTACT HIM VIA INTERNET (JBERST@SEANET.COM), MCI (JBERST OR 614-8466), COMPUSERVE (71337,2052), OR FAX (206-881-1452).

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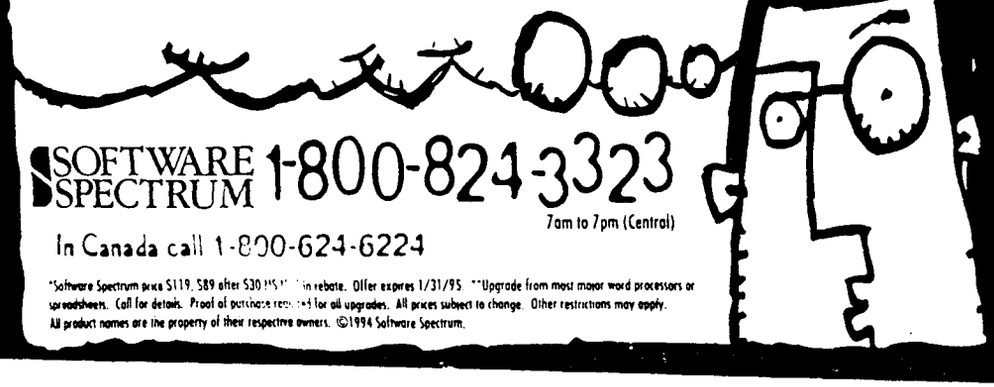

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TAB 31

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
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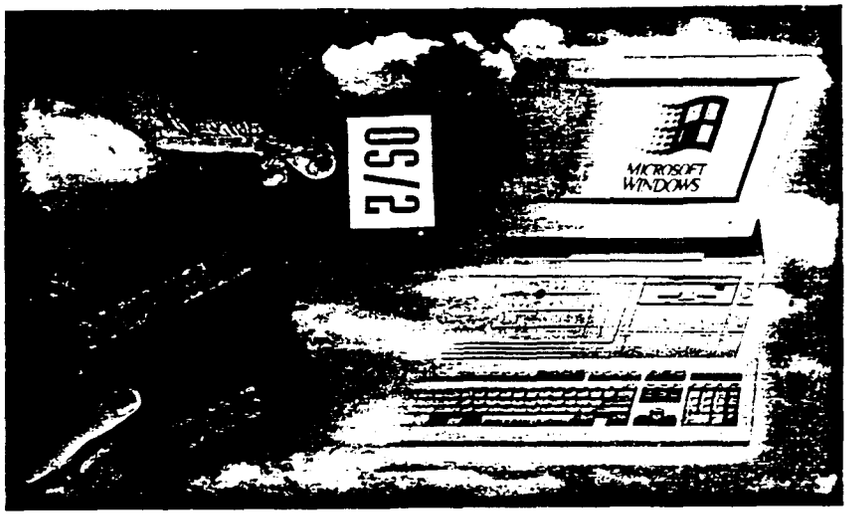
Microsoft Settles: Business as Usual



Now that Microsoft's licensing agreements for MS-DOS and Windows have been deemed "unfair" and "monopolistic" by the Department of Justice, will other operating systems have a fighting chance on the desktop?

According to computer manufacturers, industry analysts, and end users, the outlook is grim for Novell's DOS and IBM's PC-DOS and OS/2. They say there's not much motivation for PC manufacturers to preinstall a competing product, since Windows has millions of users and thousands of software applications. And since Microsoft's upcoming version of Windows (code-named Chicago) won't require DOS, the demand for all flavors of DOS is likely to plummet.

Has the train for Chicago already left the station? "I think the world of OS/2," says Jerry Williams, vice president of data operations for Eglin Federal Credit Union in Fort Walton Beach, Florida. "It's a good operating system. However, I think the momentum has swung in Windows' favor. If you go with OS/2, you're kind of stepping off the ladder."

"DOS is starting to go away, and Windows is taking over everything," says Gary Shurman, president of the New Orleans Personal Computer Club. "Unless somebody comes up with something earth-shattering, I don't think there's a serious challenger to Microsoft."

Despite the skepticism, Microsoft's competitors may have their best chance in years to challenge Bill Gates's desktop domination. After a lengthy investigation by the U.S. Department of Justice and the European Commission (the executive body that governs the European Community), Justice Department officials announced in July that Microsoft had agreed to end its "illegal monopolistic practices" and stop using "unfair contracts that choked off competition and preserved its monopoly" in the PC operating system market.

Terms of the Decree

Under the terms of the consent decree, Microsoft must change its licensing contracts with PC manufacturers (called OEMs). It can no longer make "per processor" agreements that require OEMs to pay a royalty to Microsoft for each PC shipped—regardless of whether the preinstalled operating system is from Microsoft or a competitor. The company also can't require OEMs to purchase a minimum number of Microsoft operating systems or sign a license with terms longer than one year (although the OEM can renew the license for an additional year).

Perhaps most optimistic about the Justice Department ruling is IBM, which has had little success in convincing OEMs to preinstall its OS/2 operating system. "This has really opened the door. We've gone out proactively, contacting hundreds of PC manufacturers already," says John Soyring, a director of IBM's Personal Software Products division in Austin, Texas. While Soyring expects some "major North American manufacturers" to preinstall OS/2, so far Big Blue's victories have been in Europe. Soyring says that German PC makers Vobis and Escom already preinstall OS/2—and Escom expects to ship 440,000 systems with OS/2 over the next 12 months.

Despite the ruling from Justice, Microsoft's influence over PC manufacturers remains immense. Most of the leading OEMs contacted for this article had little or no comment on the Justice Department ruling, other than to say that their relationship with Microsoft would stay the same (in other words, they'd still preinstall Windows). And many industry pundits see the consent decree as a weak slap on Microsoft's wrist. "I think Microsoft is thrilled with the settlement," says Tim Bajarin, president of Creative Strategies in San Jose, California. Of course, if Microsoft is too aggressive, it is likely to find itself in the sights of regulators once again. That's a position even Bill Gates wants to avoid.

—Jeff Bertolucci

New Orleans PC Club president Gary Shurman believes Windows is unstoppable.

RIGHT: DAVID SPIELMAN; ABOVE: JEFF BERLIN

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FEB 14 1995
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San Francisco Chronicle
THE LARGEST DAILY CIRCULATION IN NORTHERN CALIFORNIA
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Exh. 32
94-1564 SS

FILED
FEB 14 1995
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District of Columbia

Microsoft Unscathed By Settlement

Antitrust pact a slap on wrist for software giant

By David Einstein
Chronicle Staff Writer

Although the government claimed victory in its antitrust battle against Microsoft, it appears as if the world's largest software maker suffered little damage and in fact should continue to steamroller the rest of the industry.

NEWS ANALYSIS

By agreeing to halt some supposedly monopolistic practices, Bill Gates' giant company has left the door open ever so slightly for competitors to grab some piece of the market for operating systems that run most of today's personal computers. It is a market Microsoft dominates with its MS-DOS and Windows programs, currently installed on more than 120 million computers worldwide.

But sometime late this year or early next, Microsoft intends to brush away its rivals once again when it introduces Chicago, the next generation of Windows. If PC users flock to Chicago as expected, Gates actually could increase his hold on the industry he helped cre-

MICROSOFT: A13 Col. 3

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MICROSOFT: Playing Field Uneven Despite Settlement

From Page 1

ate in the early 1980s.

There had been speculation that the Justice Department, which took over the investigation from the Federal Trade Commission last year, might have gone so far as to break up Microsoft just as AT&T was split up in 1984.

But as the government closed the case late Friday, however, it was with a mere slap on the wrist. Microsoft admitted no guilt over allegations of monopolistic practices, and faces no fines or financial penalties. Its revenues, now over $4 billion a year, probably will not suffer.

No wonder Microsoft officials were happy with the terms of the settlement. "It preserves our ability to do business in a way that is effective," said Bill Neukom, vice president of law and corporate affairs.

But Attorney General Janet Reno professed satisfaction with the outcome of the first major antitrust case of the Clinton administration, saying the settlement "levels the playing field and opens the door for competition" by curbing Microsoft's "monopolistic practices."

Reno talked tough, adding that "while the company fairly and lawfully climbed to the top of the industry ladder, it used unfair and illegal practices to maintain its dominant position."

But the settlement did not address what many competing companies consider the real antitrust issue. Microsoft, they say, has used its control of DOS and Windows to extend its hold on the software sector.

In fact, during the nearly four years the government investigated Microsoft, the Redmond, Wash.-based behemoth managed to be the major player in the market not only for operating systems, but also for major applications such as word processing and spreadsheet software. And even as the consent decree goes into effect, Microsoft is trying to tighten the screws on its major competitors by asking smaller software developers to adopt a standard that would make their programs dovetail with Microsoft's best-selling "Office" suite of applications.

Licensing

Friday's consent decree, which steers the company and the government clear of the courts, includes an agreement to change the way Microsoft licenses its operating system. That issue the government felt was its best chance to beat Microsoft had the antitrust case gone to court.

Microsoft no longer will offer PC makers steep discounts on volume purchases of DOS and Windows in return for royalties from every PC sold — whether or not the Microsoft system was actually installed on them. That "per-processor" licensing strategy had discouraged manufacturers from buying rival products such as Novell's version of DOS or IBM's OS/2 operating system, since they already were paying for Microsoft's version.

Novell's general counsel, David Bradford, saw the consent decree as a clear victory. "This has been a long effort by many companies for many years," he said, "and this decision will provide consumers with increased choices and more innovative products."

But the euphoria may wear off quickly. Microsoft's Chicago program reportedly will not require an underlying operating system, leading industry experts to predict the irrelevancy or death of DOS once Chicago catches on.

Industry Standard Pacts

Competitors may benefit more from Microsoft's agreement to loosen restrictions on its nondisclosure agreements — industry-standard pacts that software companies must sign to get advance copies of new products such as Chicago. Microsoft in the past has forced companies to agree not to work with other operating systems in return for access to its programs.

That may help large companies like Novell, which is updating its popular WordPerfect and Quattro Pro programs. But smaller companies still may find themselves tilting at windmills in trying to take on Microsoft.

Ernie Simpson, president of The Wizard Co. in Denton, Texas, called the settlement "a waste of time."

"Microsoft will continue to do as they have been doing, only they'll word their contracts a little differently," said Simpson, whose company develops software for some major Windows programs. "Microsoft is the de facto industry standard for operating systems, and they will continue to control the industry to the advantage of Microsoft and the detriment of everyone else."

Microsoft had insisted it would never settle antitrust charges out of court. Gates was positively adamant about it, complaining that the Justice Department was hounding him unreasonably. In the end, however, with antitrust charges looking more and more possible, the company decided to cut a deal. Judging from the first reviews, Gates appears to have done quite well by it.

Chronicle wire services contributed to this report.

MTC-00030631_0527

TAB 33

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

San Francisco Examiner

COMPUTERS & TECHNOLOGY

Microsoft deal: too little, too late

VIEW POINT

By Michael Morris
SPECIAL TO THE EXAMINER

A few days after the Department of Justice announced the settlement of its antitrust investigation of Microsoft, Bill Gates told the Wall Street Journal, "I intend to defy gravity."

Thanks to the nature of that settlement, it is likely that he will.

The Justice Department press release announcing the settlement quoted Attorney General Reno as saying, "Microsoft's unfair contracting policies have denied other U.S. companies a fair chance to compete, deprived consumers of an effective choice among competing PC operating systems, and slowed innovation." True enough.

She went on to state, "Today's settlement levels the playing field and opens the door for competition."

Unfortunately, it is unlikely to do either.

It is telling that in describing the harm caused to competition and innovation by Microsoft's practices, the attorney general used the past tense. The particular practices the settlement addressed were unquestionably key factors in Microsoft's rise to dominance in the 1980s.

Among other things, Microsoft required PC manufacturers to pay a license fee for its MS-DOS and Windows operating system software on every PC shipped with an Intel microprocessor under long-term agreements — whether or not those PCs actually contained that software — and unreasonably restricted independent software companies from working with Microsoft competitors. In so doing, Microsoft managed to insinuate its technology into the heart and soul of 85 percent of the world's PCs.

By 1985, these practices had already had their intended effect: making Microsoft's operating system the de facto PC standard. The present source of Microsoft's domination in the PC world derives from its status as the standard-holder, not the practices the Justice Department condemned and which will now be prohibited under the settlement.

Microsoft understands this perfectly well, which, of course, is why Bill Gates let the settlement happen. Nothing in the proposed settlement is likely to have anything other than the most marginal effect on Microsoft's future.

Inherent in the nature of software technology is the concept of dependence. Operating systems are useless without application programs and vice versa. Neither has discrete, stand-alone value.

But of the two, operating systems software must come first and clearly provides the most potential for leverage. To its credit, Microsoft understood this earlier than everyone else and exploited its insight relentlessly. So technically dependent is the PC industry on Microsoft operating system software, that Microsoft could afford the luxury of a five-year period in which to perfect Windows after its initial introduction in 1985.

When Apple introduced the Macintosh "graphical user interface," which replaced obscure and hard-to-remember keyboard commands with easy-to-learn and easy-to-use screen icons and a mouse, it marked a watershed in the development of consumer-friendly computing. In response, Microsoft introduced Windows, which was supposed to provide Macintosh-like ease-of-use.

[See VIEWPOINT, C-6]

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Exh. 33 94-156455

MTC-00030631_0529

◆ *VIEWPOINT from C-1*

Too little, too late

But the first several versions of Windows were so poorly designed that very few people wanted them, preferring even the archaic DOS with its incredibly difficult keyboard commands. It wasn't until 1990, five years after its introduction, that Microsoft finally produced a version of Windows that was ready for prime time.

Now, one would think that if genuine competition existed in PC operating systems, this five-year gap would have been exploited by one or more competitors of Microsoft. Indeed, it's hard to conceive that any company could have taken as long as Microsoft did to get a basic technology right and still survive.

Yet, Microsoft not only survived during this period, it prospered. The reason is that it was virtually impossible to shake free of MS-DOS, even when clearly better alternatives were available. The consumer investment in application programs that could only run on the Microsoft system was too large and the cost of switching to an alternative technology — even a clearly better one — too great.

While this was obvious to everyone by 1985 or 1986, Bill Gates understood it in 1980.

Almost 10 years later, PC manufacturers, consumers and software developers are even more tightly bound to Microsoft operating system technologies. The ties that bind are not contractual, they are technical, which is why the Justice Department settlement will be ineffective.

And while controlling this standard, Microsoft is free to compete on applications based on the standard. Companies that develop competing spreadsheet, word processing and other such programs have complained for years that Microsoft programmers have the unfair advantage of knowing changes to the operating system specifications well before anyone else.

The fact is Microsoft owns — and closely guards — the de facto standard for desktop computers, a critical part of our information infrastructure. And at least three steps could be taken to ensure fair competition. Microsoft could be required to:

▶ Publicly disclose its operating system interface specifications so that designers of competing operating systems could have assurance that application programs written for MS-DOS or Windows would run efficiently with their operating systems. Microsoft should update its specifications in a periodic and timely manner.

MTC-00030631_0530

TAB 34

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

San Jose Mercury News

Serving Northern California Since 1851

SUNDAY
NOVEMBER 13, 1994

94-1564

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Microsoft, Intel set to define technology

■ **Duopoly:** Apple, IBM, Motorola mounting last-ditch attempt to make PC alternative.

BY RORY J. O'CONNOR
Mercury News Staff Writer

Tomorrow, when Silicon Valley's brain trust arrives in Las Vegas as part of a 200,000-strong crowd at the computer industry's largest trade show, conversation will almost certainly center on one topic: Can anything stop Microsoft and Intel from controlling everything?

Who will control
COMPUTING'S FUTURE?
First in an occasional series.

Some fear that as the digital future of the information superhighway emerges, an unchallenged Microsoft and Intel will wind up in total, undisputed control of the technology upon which the country's citizens and economy will depend. And few believe that a recently announced alliance between Apple and IBM will prove an effective roadblock.

See COMPUTING, Back Page

MTC-00030631_0532

PC giants tighten grip on technology

■ COMPUTING

from Page 1A

Today, Microsoft Corp. makes the world's most popular software for personal computers, operating systems that control 85 percent of the machines in use. Intel Corp.'s microprocessor chips are the brains in 75 percent of all the computers made.

But the personal computer is rapidly becoming a home appliance, and the PC is poised to expand from word processing and spreadsheets to controlling a myriad of other jobs in our everyday work and personal lives. The companies that control personal-computer technology are in a position soon to dominate much, much more.

From video telephones to intelligent fax machines, from office to home, from providing digital information and entertainment to managing credit-card and other financial transactions, Microsoft and Intel are already extending their reach far beyond traditional personal computing.

Both companies have deep pockets to back the technology — and their unofficial partnership is an effective duopoly that could let the companies dictate the price of technology, minimize consumer choices and slow the pace of technical progress.

In short, many believe, little stands between the two companies and technical control of the future.

"Increasingly, I'm believing it's all over, and we're going to be locked into Microsoft and Intel forever," said Dataquest analyst Kimball Brown.

In the 13 years since IBM transformed the PC from hobbyist toy to business tool, control of the industry has shifted from IBM and Apple to their once-tiny competitors. Now, Apple and IBM, despite their combined annual revenues of nearly $75 billion, are the underdogs.

Except for Apple, whose research and development spending remains large despite a $100 million cutback in the past year, few PC companies invest significant sums in new technology research. The bulk of such money is spent by Intel to develop chips and Microsoft to further its lead in software.

Many people in the industry decry this state of affairs, but lack the money, the marketing or the technology to force meaningful competition. Even the federal government has declined to step in, punishing Microsoft with a slap on the wrist after a four-year investigation into what Attorney General Janet Reno called "illegal, monopolistic" practices.

Perhaps the only force large enough to change anything is an infant agreement announced last week by Apple, IBM and Motorola to build a new kind of personal computer, one that would neither use Intel microprocessors nor feature Microsoft operating systems.

The timing of their agreement, one week before the largest annual gathering of technology power brokers in the world, is no accident.

Even though the alliance will not produce a product until 1996, IBM and Apple need every ounce of momentum they can muster for what is probably the last-ditch attempt to topple Intel and Microsoft — or even to hope to play a role in defining the technical future.

But most analysts insist that Apple and IBM are waging the wrong war.

"The desktop operating system war is over," said venture capitalist Ann Winblad, whose Emeryville firm specializes in software companies. "Microsoft has won."

Instead, Apple and IBM should be looking to the information superhighway for opportunities to sell new technology, expand their business and regain the power to force technical competition, said Richard Shaffer, publisher of the Technologic Letter in New York.

That's because there is a potentially more lucrative market in the future, one that uses both the personal computer and its technology.

It goes by the catch-all term of information superhighway, but it encompasses a host of major changes in the role of personal computers at work and at home.

Some of the latest home computers are already touted as being able to replace nearly everything in a small office except the coffee pot.

Phones and fax machines are becoming smarter, thanks to more-powerful computer brains. And when people are away from their home or office in the future, they may well carry portable devices that combine today's cellular phone with ready information access, offering yet another umbilical cord to the PC.

Over the next decade, even television is poised to become interactive, offering far more choices, two-way video and fountains of information on demand — activities that require heavy use of computer chips and sophisticated operating systems and other software. Computers will manage nearly all financial transactions, and will even be a citizen's primary conduit to the government.

Some experts envision a single intelligent box in the home, one that would use the functions of a personal computer to connect the home to information and communications lines through phone-company wires or cable-television hookups.

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There's little doubt that each of these areas will be the site of intense competition. In almost every case, Microsoft and Intel's dominance of the PC business would give them a crucial advantage.

If they succeed in controlling key technology in any or all of these areas, they will be able to determine much of how the devices work, and could even control how people receive information or make purchases. And the closer the digital world moves to merging control into just one or two boxes connected to monolithic networks, the better the chance Intel and Microsoft have to dominate them as they have PCs.

But Apple insists it is not blind to the digital future, despite initial failure in one new market — that for personal digital assistants — and a very slow start for its E•World on-line service.

"Clearly, there's a feeling at Apple that these other technologies are very exciting areas," said Rick LeFaivre, the head of the company's Advanced Technology Group. "But at the same time we're making sure not to take our eye off the PC and say it's dead. . . . The PC side of our business will be by far the dominant side for a long, long time."

At the same time, Apple's partner is struggling to regain power it has lost in nearly every area of its business. Internally, it is replacing top managers, revamping its structure, changing key technology, laying off workers and trying to figure out how it fits into a world it once controlled. Externally, critics say they can't fathom the company's strategy, especially in personal computing, where it is unclear what software and hardware technology IBM considers strategic — and, therefore, safe for customers to buy.

The problem for Apple and IBM, according to analysts, is that they probably have little hope of competing effectively in the digital future unless they can quickly establish their new computer as a viable alternative.

But to become a PC alternative, the companies must overcome a host of difficulties, from wrenching changes in their corporate cultures to damaged balance sheets to the improbability of the partnership they began with Motorola more than three years ago.

"The whole plan in 1991 was daring, kind of like chemotherapy," said Shaffer. "The therapy might kill the patient, but the alternative is certain death."

Few believe that Apple, IBM and Motorola can thrive against the Microsoft-Intel duopoly short of a move even more unlikely than the original IBM-Apple partnership.

"Without the merger of Apple and IBM into one corporate entity, they are executing separate strategies, no matter what they say," Winblad said. "So while some people have called this the David and Goliath story, with Microsoft as Goliath, there is no David — perhaps a Tom, Dick and Harry."

Not everyone believes that a world where two companies control most of the technology is a cause for alarm, however.

"What's wrong with there being just one operating system? It's supposed to be transparent to the user," said analyst Doug Kass of the Viewpoint Group in Aptos. "I don't think that will lead to huge increases in price. It's not competition among vendors, but what the market will bear in terms of price. Consumers look for what works, not the cutting edge. If some new (software) is priced beyond the glass ceiling of what consumers are comfortable paying, it won't sell."

Not surprisingly, Microsoft officials share that view.

"Things are very competitive now," said Brad Chase, general manager of Microsoft's personal operating systems division. "Apple is certainly not an uncompetitive company. IBM is a very aggressive company. And the thing about technology is you can't rest on your laurels. If you don't keep aggressive, your leadership will melt like butter."

Tomorrow in Business Monday: How far can Microsoft go?

MTC-00030631_0534

TAB 35

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

San Jose Mercury News, Wednesday, December 21, 1994

Ex. 55

94-1564 55

MICROSOFT'S DOMINATION

Microsoft's revenues in the world market for personal computer business grew more in 1994 than revenues in the market as a whole, according to preliminary estimates by Dataquest Inc. Total revenues grew by more than $550 million, while Microsoft's related revenue grew by more than $650 million. "Lotus 1-2-3, WordPerfect, dBase, Paradox and Harvard Graphics once dominated their respective categories," said Dataquest analyst Karl Wong. "Today, Microsoft products have replaced each of these one-time product category leaders." (Figures are in millions.)

'94 Rank	Company	1993 Revenue	'93-'94 % chg.	'94 Revenue	'94 market share (%)
1	Microsoft	$2,221	+29.4	$2,873	34.7
2	Lotus	986	-1.8	968	11.7
3	Novell	698	-11.6	617	7.5
4	Adobe	197	+28.1	253	3.1
5	Symantec	207	+15.2	238	2.9
6	Claris	160	+9.3	175	2.1
7	Borland	360	-52.8	170	2.1
8	Intuit	104	+56.9	163	2.0
9	Corel	105	+41.6	148	1.8
10	Delrina	65	+43.1	94	1.1
	Others	2,617	-1.7	2,573	31.0
	Total	7,720	+7.2	8,272	100.0

Source: Dataquest Inc

MERCURY NEWS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

TAB 36

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

Positive Feedbacks in the Economy

A new economic theory elucidates mechanisms whereby small chance events early in the history of an industry or technology can tilt the competitive balance

94-1564
FILED
FEB 14 1995
U.S. District Court
District of Columbia

by W. Brian Arthur

Conventional economic theory is built on the assumption of diminishing returns. Economic actions engender a negative feedback that leads to a predictable equilibrium for prices and market shares. Such feedback tends to stabilize the economy because any major changes will be offset by the very reactions they generate. The high oil prices of the 1970's encouraged energy conservation and increased oil exploration, precipitating a predictable drop in prices by the early 1980's. According to conventional theory, the equilibrium marks the "best" outcome possible under the circumstances: the most efficient use and allocation of resources.

Such an agreeable picture often does violence to reality. In many parts of the economy, stabilizing forces appear not to operate. Instead positive feedback magnifies the effects of small economic shifts; the economic models that describe such effects differ vastly from the conventional ones. Diminishing returns imply a single equilibrium point for the economy, but positive feedback—increasing returns—makes for many possible equilibrium points. There is no guarantee that the particular economic outcome selected from among the many alternatives will be the "best" one. Furthermore, once random economic events select a particular path, the choice may become locked-in regardless of the advantages of the alternatives. If one product or nation in a competitive marketplace gets ahead by "chance," it tends to stay ahead and even increase its lead. Predictable, shared markets are no longer guaranteed.

During the past few years I and other economic theorists at Stanford University, the Santa Fe Institute in New Mexico and elsewhere have been developing a view of the economy based on positive feedback. Increasing-returns economics has roots that go back 70 years or more, but its application to the economy as a whole is largely new. The theory has strong parallels with modern nonlinear physics (instead of the pre-20th-century physical models that underlie conventional economics), it requires new and challenging mathematical techniques and it appears to be the appropriate theory for understanding modern high-technology economies.

The history of the videocassette recorder furnishes a simple example of positive feedback. The VCR market started out with two competing formats selling at about the same price: VHS and Beta. Each format could realize increasing returns as its market share increased: large numbers of VHS recorders would encourage video outlets to stock more prerecorded tapes in VHS format, thereby enhancing the value of owning a VHS recorder and leading more people to buy one. (The same would, of course, be true for Beta-format players.) In this way, a small gain in market share would improve the competitive position of one system and help it further increase its lead.

Such a market is initially unstable. Both systems were introduced at about the same time and so began with roughly equal market shares; those shares fluctuated early on because of external circumstance, "luck" and corporate maneuvering. Increasing returns on early gains eventually tilted the competition toward VHS: it accumulated enough of an advantage to take virtually the entire VCR market. Yet it would have been impossible at the outset of the competition to say which system would win, which of the two possible equilibria would be selected. Furthermore, if the claim that Beta was technically superior is true, then the market's choice did not represent the best economic outcome.

Conventional economic theory offers a different view of competition between two technologies or products performing the same function. An example is the competition between water and coal to generate electricity. As hydroelectric plants take more of the market, engineers must exploit more costly dam sites, thereby increasing the chance that a coal-fired plant will be cheaper. As coal plants take more of the market, they bid up the price of coal (or trigger the imposition of costly pollution controls) and so tip the balance toward hydropower. The two technologies end up sharing the market in a predictable proportion that best exploits the potentials of each, in contrast to what happened to the two video-recorder systems.

The evolution of the VCR market would not have surprised the great Victorian economist Alfred Marshall, one of the founders of today's conventional economics. In his 1890 *Principles of Economics*, he noted that if firms' production costs fall as their market shares increase, a firm that simply by good fortune gained a high

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proportion of the market early on would be able to best its rivals; "whatever firm first gets a good start" would corner the market. Marshall did not follow up this observation, however, and theoretical economics has until recently largely ignored it.

Marshall did not believe that increasing returns applied everywhere; agriculture and mining—the mainstays of the economies of his time—were subject to diminishing returns caused by limited amounts of fertile land or high-quality ore deposits. Manufacturing, on the other hand, enjoyed increasing returns because large plants allowed improved organization. Modern economists do not see economies of scale as a reliable source of increasing returns. Sometimes large plants have proved more economical; often they have not.

I would update Marshall's insight by observing that the parts of the economy that are resource-based (agriculture, bulk-goods production, mining) are still for the most part subject to diminishing returns. Here conventional economics rightly holds sway. The parts of the economy that are knowledge-based, on the other hand, are largely subject to increasing returns. Products such as computers, pharmaceuticals, missiles, aircraft, automobiles, software, telecommunications equipment or fiber optics are complicated to design and to manufacture. They require large initial investments in research, development and tooling, but once sales begin, incremental production is relatively cheap. A new airframe or aircraft engine, for example, typically costs between $2 and $3 billion to design, develop, certify and put into production. Each copy thereafter costs perhaps $50 to $100 million. As more units are built, unit costs continue to fall and profits increase.

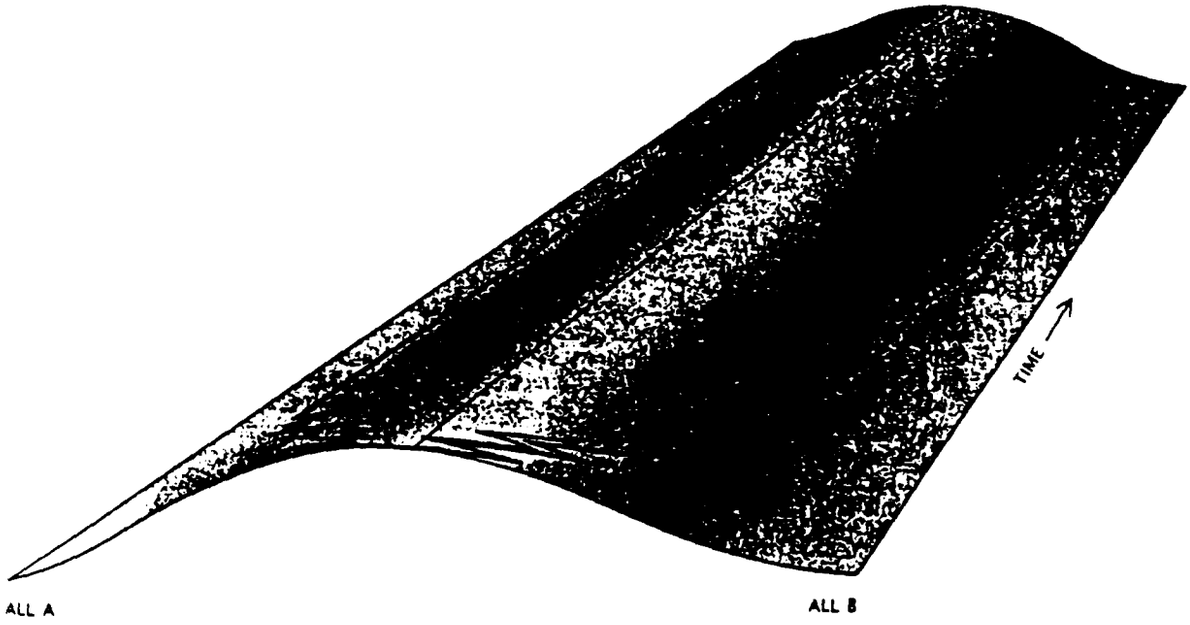
Increased production brings additional benefits: producing more units means gaining more experience in the manufacturing process and achieving greater understanding of how to produce additional units even more cheaply. Moreover, experience gained with one product or technology can make it easier to produce new products incorporating similar or related technologies. Japan, for example, leveraged an initial investment in building precision instruments into a capacity for building consumer electronics products and then the integrated circuits that went into them.

Not only do the costs of producing high-technology products fall as a company makes more of them, but the benefits of using them increase. Many items such as computers or telecommunications equipment work in networks that require compatibility; when one brand gains a significant market share, people have a strong incentive to buy more of the same product so as to be able to exchange information with those using it already.

If increasing returns are important, why were they largely ignored until recently? Some would say that complicated products—high technology—for which increasing returns are so important, are themselves a recent phenomenon. This is true, but is only part of the answer. After all, in the 1940's and 1950's, economists such as Gunnar K. Myrdal and Nicholas Kaldor identified positive-feedback mechanisms that did not involve technology. Orthodox economists avoided increasing returns for deeper reasons.

Some economists found the existence of more than one solution to the same problem distasteful—unscientific. "Multiple equilibria," wrote Joseph A. Schumpeter in 1954, "are not necessarily useless, but from the standpoint of *any* exact science the existence of a uniquely determined equilibrium is, of course, of the utmost importance, even if proof has to be purchased at the price of very restrictive assumptions; without any possibility of proving the existence of [a] uniquely determined equilibrium—or at all events, of a small number of possible equilibria—at however high a level of abstraction, a field of phenomena is really a chaos that is not under analytical control."

Other economists could see that



RANDOM WALK on a convex surface illustrates increasing-returns competition between two technologies. Chance determines early patterns of adoption and so influences how fast each competitor improves. As one technology gains more adherents (corresponding to motion downhill toward either edge of the surface), further adoption is increasingly likely.

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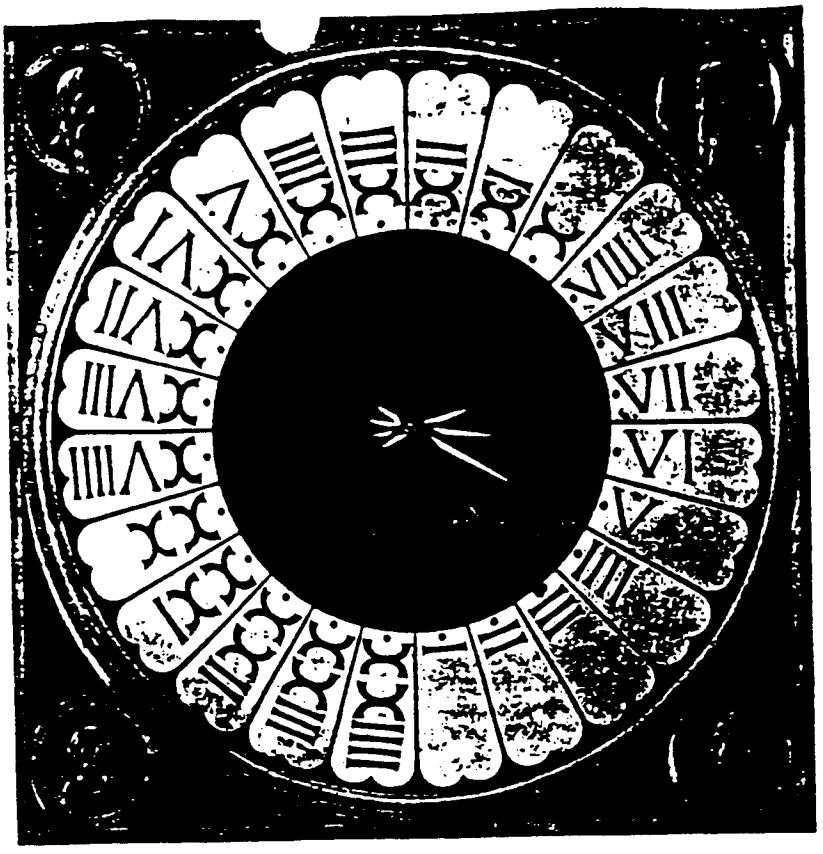

FLORENCE CATHEDRAL CLOCK has hands that move "counterclockwise" around its 24-hour dial. When Paolo Uccello designed the clock in 1443, a convention for clockfaces had not emerged. Competing designs were subject to increasing returns: the more clockfaces of one kind were built, the more people became used to reading them. Hence, it was more likely that future clockfaces would be of the same kind. After 1550, "clockwise" designs displaying only 12 hours had crowded out other designs. The author argues that chance events coupled with positive feedback, rather than technological superiority, will often determine economic developments.

theories incorporating increasing returns would destroy their familiar world of unique, predictable equilibria and the notion that the market's choice was always best. Moreover, if one or a few firms came to dominate a market, the assumption that no firm is large enough to affect market prices on its own (which makes economic problems easy to analyze) would also collapse. When John R. Hicks surveyed these possibilities in 1939 he drew back in alarm. "The threatened wreckage," he wrote, "is that of the greater part of economic theory." Economists restricted themselves to diminishing returns, which presented no anomalies and could be analyzed completely.

Still others were perplexed by the question of how a market could select one among several possible solutions. In Marshall's example, the firm that is the largest at the outset has the lowest production costs and must inevitably win in the market. In that case, why would smaller firms compete at all? On the other hand, if by some chance a market started with several identical firms, their market shares would remain poised in an unstable equilibrium forever.

Studying such problems in 1979, I believed I could see a way out of many of these difficulties. In the real world, if several similar-size firms entered a market at the same time, small fortuitous events—unexpected orders, chance meetings with buyers, managerial whims—would help determine which ones achieved early sales and, over time, which firm dominated. Economic activity is quantized by individual transactions that are too small to observe, and these small "random" events can accumulate and become magnified by positive feedbacks so as to determine the eventual outcome. These facts suggested that situations dominated by increasing returns should be modeled not as static, deterministic problems [illegible] as dynamic processes based on random events and natural positive feedbacks, or nonlinearities.

With this strategy an increasing-returns market could be re-created in a theoretical model and watched as its corresponding process unfolded again and again. Sometimes one solution would emerge, sometimes (under identical conditions) another. It would be impossible to know in advance which of the many solutions would emerge in any given run. Still, it would be possible to record the particular set of random events leading to each solution and to study the probability that a particular solution would emerge under a certain set of initial conditions. The idea was simple, and it may well have occurred to economists in the past. But making it work called for nonlinear random-process theory that did not exist in their day.

Every increasing-returns problem need not be studied in isolation; many turn out to fit a general nonlinear probability schema. It can be pictured by imagining a table to which balls are added one at a time; they can be of several possible colors—white, red, green or blue. The color of the ball to be added next is unknown, but the probability of a given color depends on the current proportions of colors on the table. If an increasing proportion of balls of a given color increases the probability of adding another ball of the same color, the system can demonstrate positive feedback. The question is, Given the function that maps current proportions to probabilities, what will be the proportions of each color on the table after many balls have been added?

In 1931 the mathematician George Polya solved a very particular version of this problem in which the probability of adding a color always equaled its current proportion. Three U.S. probability theorists, Bruce M. Hill of the University of Michigan at Ann Arbor and David A. Lane and William D. Sudderth of the University of Minnesota at Minneapolis, solved a more general, nonlinear version in 1980. In 1983 two Soviet probability theorists, Yuri M. Ermoliev and Yuri M. Kaniovski, both of the Glushkov Institute of Cybernetics in Kiev, and I found the solution to a very general version. As balls continue to be added, we proved, the proportions of each color must settle down to a "fixed point" of the probability function—a set of values where the probability of adding each color is equal to the proportion of that color on the table. Increasing returns allow several such sets of fixed points.

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This means that we can determine the possible patterns or solutions of an increasing-returns problem by solving the much easier challenge of finding the sets of fixed points of its probability function. With such tools economists can now define increasing-returns problems precisely, identify their possible solutions and study the process by which a solution is reached. Increasing returns are no longer "a chaos that is not under analytical control."

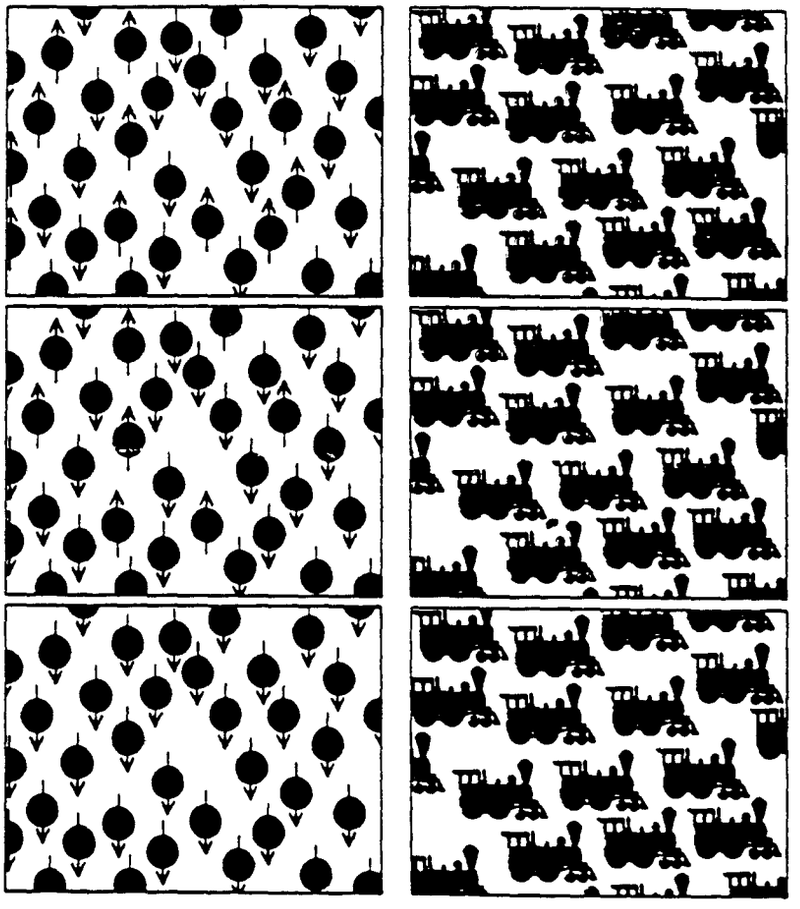
In the real world, the balls might be represented by companies and their colors by the regions where they decide to settle. Suppose that firms enter an industry one by one and choose their locations so as to maximize profit. The geographic preference of each firm (the intrinsic benefits it gains from being in a particular region) varies; chance determines the preference of the next firm to enter the industry. Also suppose, however, that firms' profits increase if they are near other firms (their suppliers or customers). The first firm to enter the industry picks a location based purely on geographic preference. The second firm decides based on preference modified by the benefits gained by locating near the first firm. The third firm is influenced by the positions of the first two firms, and so on. If some location by good fortune attracts more firms than the others in the early stages of this evolution, the probability that it will attract more firms increases. Industrial concentration becomes self-reinforcing.

The random historical sequence of firms entering the industry determines which pattern of regional settlement results, but the theory shows that not all patterns are possible. If the attractiveness exerted by the presence of other firms always rises as more firms are added, some region will always dominate and shut out all others. If the attractiveness levels off, other solutions, in which regions share the industry, become possible. Our new tools tell us which types of solutions can occur under which conditions.

Do some regions in fact amass a large proportion of an industry because of historical chance rather than geographic superiority? Santa Clara County in California (Silicon Valley) is a likely example. In the 1940's and early 1950's certain key people in the U.S. electronics industry—the Varian brothers, William Hewlett and David Packard, William Shockley—set up shop near Stanford University; the local availability of engineers, supplies and components that these early firms helped to create made Santa Clara County extremely attractive to the 900 or so firms that followed. If these early entrepreneurs had preferred other places, the densest concentration of electronics in the country might well be somewhere else.

On a grander scale, if small events in history had been different, would the location of cities themselves be different? I believe the answer is yes. To the degree that certain locations are natural harbors or junction points on rivers or lakes, the pattern of cities today reflects not chance but geography. To the degree that industry and people are attracted to places where such resources are already gathered, small, early chance concentrations may have been the seeds of today's configuration of urban centers. "Chance and necessity," to use Jacques Monod's phrase, interact. Both have played crucial roles in the development of urban centers in the U.S. and elsewhere.

Self-reinforcing mechanisms other than these regional ones work in international high-tech manufacturing and trade. Countries that gain high volume and experience in a high-technology industry can reap advantages of lower cost and higher quality that may make it possible for them to shut out other countries. For example, in the early 1970's, Japanese automobile makers began to sell significant numbers of small cars in the U.S. As Japan gained market volume without much opposition from Detroit, its engineers and production workers gained experience, its costs fell and its products improved. These factors, together with improved sales networks, allowed Japan to increase



FERROMAGNETS AND REGIONAL RAIL GAUGES become ordered in much the same way. As a disordered magnetic material is cooled (*left*), the atomic dipoles inside it exert forces on one another, causing neighboring dipoles to align. Eventually all the dipoles in a sample line up, but the direction they all take (up or down) cannot be predicted beforehand. Similarly, as Douglas Puffert of Swarthmore College has shown, neighboring private railroads (*right*) in the past century adopted the same gauge to extend their range more easily. Eventually all (or most) railroads used the same gauge. Similar equations describe the behavior of these two systems.

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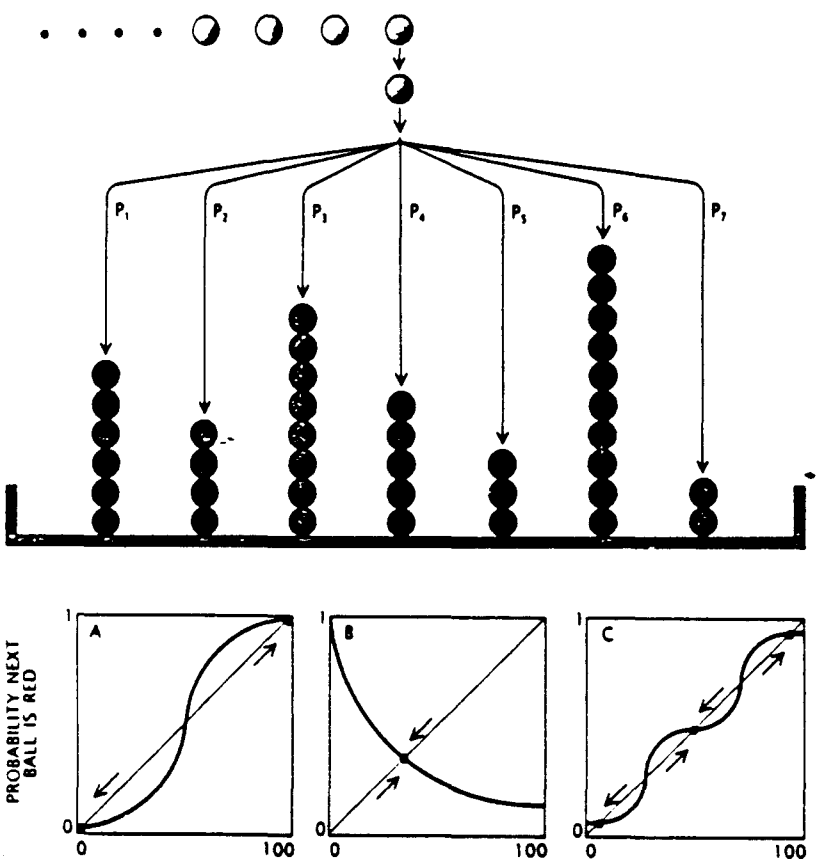
its share of the U.S. r... as a result, workers gained still more experience, costs fell further and quality improved again. Before Detroit responded seriously, this positive-feedback loop had helped Japanese companies to make serious inroads into the U.S. market for small cars. Similar sequences of events have taken place in the markets for television sets, integrated circuits and other products.

How should countries respond to a world economy where such rules apply? Conventional recommendations for trade policy based on constant or diminishing returns tend toward low-profile approaches. They rely on the open market, discourage monopolies and leave issues such as R&D spending to companies. Their underlying assumption is that there is a fixed world price at which producers load goods onto the market, and so interference with local costs and prices means of subsidies or tariffs is unproductive. These policies are appropriate for the diminishing-returns parts of the economy, not for the technology-based parts where increasing returns dominate.

Policies that are appropriate to success in high-tech production and international trade would encourage industries to be aggressive in seeking out product and process improvements. They would strengthen the national research base on which high-tech advantages are built. They would encourage firms in a single industry to pool their resources in joint ventures that share up-front costs, marketing networks, technical knowledge and standards. They might even foster strategic alliances, enabling companies in several countries to enter a complex industry that none could tackle alone. Increasing-returns theory also points to the importance of timing when undertaking research initiatives in new industries. There is little sense in entering a market that is already close to being locked-in or that otherwise offers little chance of success. Such policies are slowly being advocated and adopted in the U.S.

The value of other policies, such as subsidizing and protecting new industries—bioengineering, for example—to capture foreign markets, is debatable. Dubious feedback benefits have sometimes been cited to justify government-sponsored white elephants. Furthermore, as Paul R. Krugman of the Massachusetts Institute of Technology and several other economists have pointed out, if one country pursues such policies, others will retaliate by subsidizing their own high-technology industries. Nobody gains. The question of optimal industrial and trade policy based on increasing returns is currently being studied intensely. The policies countries choose will determine not only the shape of the global economy in the 1990's but also its winners and its losers.



NONLINEAR PROBABILITY THEORY can predict the behavior of systems subject to increasing returns. In this model, balls of different colors are added to a table; the probability that the next ball will have a specific color depends on the current proportions of colors (*top*). Increasing returns occur in *A* (the graph shows the two-color case; arrows indicate likely directions of motion): a red ball is more likely to be added when there is already a high proportion of red balls. This case has two equilibrium points: one at which almost all balls are red; the other at which very few are red. Diminishing returns occur in *B*: a higher proportion of red balls lowers the probability of adding another. There is a single equilibrium point. A combination of increasing and diminishing returns (*C*) yields many equilibrium points.

Increasing-returns mechanisms do not merely tilt competitive balances among nations; they can also cause economies—even such successful ones as those of the U.S. and Japan—to become locked into inferior paths of development. A technology that improves slowly at first but has enormous long-term potential could easily be shut out, locking an economy into a path that is both inferior and difficult to escape.

Technologies typically improve as more people adopt them and firms gain experience that guides further development. This link is a positive-feedback loop: the more people adopt a technology, the more it improves and the more attractive it is for further adoption. When two or more technologies (like two or more products) compete, positive feedbacks make the market for them unstable. If one pulls ahead in the market, perhaps by chance, its development may accelerate enough for it to corner the market. A technology that improves more rapidly as more people adopt it stands a better chance of surviving—it has a "selectional advantage." Early superiority, however, is no guarantee of long-term fitness.

In 1956, for example, when the U.S. embarked on its nuclear-power program, a number of designs were proposed: reactors cooled by gas, light water, heavy water, even liquid sodi-

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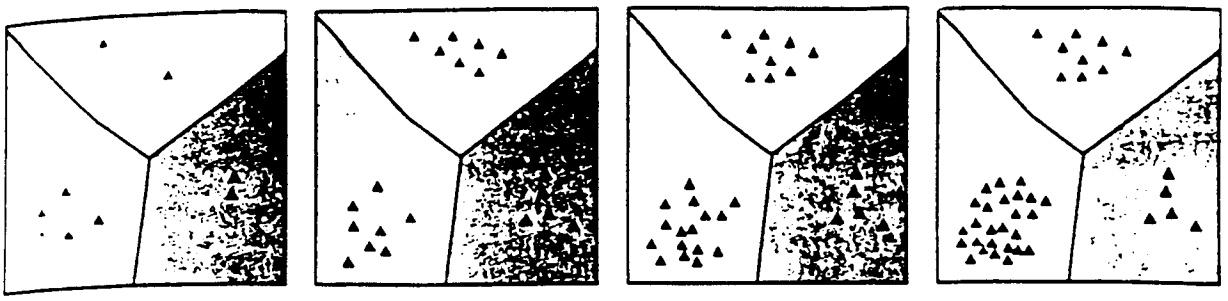

COMPANIES CHOOSE LOCATIONS to maximize profits, which are determined by intrinsic geographic preference (shown by color) and by the presence of other companies. In this computer-generated example, most of the first few companies settle in the green region, and so all new companies eventually settle there. Such clustering might appear to imply that the green region is somehow superior. In other runs of the program, however, the red and blue regions dominate instead.

um. Robin Cowan of New York University has shown that a series of trivial circumstances locked virtually the entire U.S. nuclear industry into light water. Light-water reactors were originally adapted from highly compact units designed to propel nuclear submarines. The role of the U.S. Navy in early reactor-construction contracts, efforts by the National Security Council to get a reactor—any reactor—working on land in the wake of the 1957 *Sputnik* launch as well as the predilections of some key officials all acted to favor the early development of light-water reactors. Construction experience led to improved light-water designs and, by the mid-1960's, fixed the industry's path. Whether other designs would, in fact, have been superior in the long run is open to question, but much of the engineering literature suggests that high-temperature, gas-cooled reactors would have been better.

Technological conventions or standards, as well as particular technologies, tend to become locked-in by positive feedback, as my colleague Paul A. David of Stanford has documented in several historical instances. Although a standard itself may not improve with time, widespread adoption makes it advantageous for newcomers to a field—who must exchange information or products with those already working there—to fall in with the standard, be it the English language, a high-definition television system, a screw thread or a typewriter keyboard. Standards that are established early (such as the 1950's-vintage computer language FORTRAN) can be hard for later ones to dislodge, no matter how superior would-be successors may be.

Until recently conventional economics texts have tended to portray the economy as something akin to a large Newtonian system, with a unique equilibrium solution preordained by patterns of mineral resources, geography, population, consumer tastes and technological possibilities. In this view, perturbations or temporary shifts—such as the oil shock of 1973 or the stock-market crash of 1987—are quickly negated by the opposing forces they elicit. Given future technological possibilities, one should in theory be able to forecast accurately the path of the economy as a smoothly shifting solution to the analytical equations governing prices and quantities of goods. History, in this view, is not terribly important; it merely delivers the economy to its inevitable equilibrium.

Positive-feedback economics, on the other hand, finds its parallels in modern nonlinear physics. Ferromagnetic materials, spin glasses, solid-state lasers and other physical systems that consist of mutually reinforcing elements show the same properties as the economic examples I have given. They "phase lock" into one of many possible configurations; small perturbations at critical times influence which outcome is selected, and the chosen outcome may have higher energy (that is, be less favorable) than other possible end states.

This kind of economics also finds parallels in the evolutionary theory of punctuated equilibrium. Small events (the mutations of history) are often averaged away, but once in a while they become all-important in tilting parts of the economy into new structures and patterns that are then preserved and built on in a fresh layer of development.

In this new view, initially identical economies with significant increasing-returns sectors do not necessarily select the same paths. Instead they eventually diverge. To the extent that small events determining the overall path always remain beneath the resolution of the economist's lens, accurate forecasting of an economy's future may be theoretically, not just practically, impossible. Steering an economy with positive feedbacks into the best of its many possible equilibrium states requires good fortune and good timing—a feel for the moments when beneficial change from one pattern to another is most possible. Theory can help identify these states and times, and it can guide policymakers in applying the right amount of effort (not too little but not too much) to dislodge locked-in structures.

The English philosopher of science Jacob Bronowski once remarked that economics has long suffered from a fatally simple structure imposed on it in the 18th century. I find it exciting that this is now changing. With the acceptance of positive feedbacks, economists' theories are beginning to portray the economy not as simple but as complex, not as deterministic, predictable and mechanistic but as process-dependent, organic and always evolving.

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TAB 37

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

4TH STORY of Level 1 printed in FULL format.

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September 20, 1994

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94-1564 PS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

SECTION: TEC; Pg. 1

LENGTH: 1774 words

HEADLINE: Novell to introduce SuperNOS strategy

BYLINE: From LARRY CAMPBELL in Atlanta

BODY:

NETWORK computing industry leader Novell is bailing out of a number of its existing markets and terminating several product lines - including Novell DOS 7 - to concentrate on new ''technology initiatives'' and usher in an era of ''pervasive computing''.

Novell is initially pulling out of the personal computer operating system business by stopping production of Novell DOS 7, a product it acquired as part of its take-over of Digital Research.

''The battle for the office desktop is over and MS-DOS and Windows have won,'' Novell chairman and chief executive Robert Frankenberg said at last week's Networld+Interop '94 conference in Atlanta, Georgia, in the United States.

''We will support Novell DOS, but we will not enhance it.''

''Novell has as much DOS marketshare as Microsoft has network marketshare,'' said Novell executive vice-president John Edwards.

''We are focusing on strong areas.''

Novell used Networld+Interop '94 to introduce these strong areas, which are part of its vision of the future of computing.

Novell sees networking as it is today evolving to encompass a much wider, global concept. It envisages everyone now owning a computer will use networking technology - through the global information superhighway, among other things.

It also expects a growing number of people using computers for the first time in future will also need to connect to information hubs to share and exchange information.

''Our goal is to take people one step at a time,'' Mr Edwards said.

''The future is pervasive computing: connecting people to allow them to work anytime they want - any way.''

The term ''Pervasive computing'' is one Novell has chosen to define its

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vision for the future. To usher it in, the company is turning its attention to a range of new products - encompassing operating systems and user interfaces - and services.

Top of the list is SuperNOS, a planned killer operating system that will see the best of Novell's existing NetWare network operating system being combined with the best of UnixWare - its UNIX counterpart.

There are an estimated 40 million NetWare users on four million local area networks (LANs) worldwide - more than double the number of users of all other network operating systems combined.

In addition, there are about 30 million users of UNIX applications around the world.

It is this formidable market that Novell aims to capture with SuperNOS, according to Mr Frankenberg.

''The time has come for NetWare NOS to provide all the services of an operating system,'' he said.

''This is why we are evolving a SuperNOS with NetWare and UNIXWare on a common Novell microkernel.

''We have left the world of the mainframe. Organisations have many servers. By ensuring that NetWare and UNIXWare work perfectly together, we allow our customers to chose which technology they need on which servers.''

Novell planned to make both products run on a single set of hardware, or ''as a single system image on multiple hardware sets'' on a network.

''You get the best of both and a progressive, evolutionary path from today's specialised, robust backend,'' he said.

''All applications, trained programmers, tools, interoperability, support, and network services continue on without change. Perhaps best of all, we build on success, adding functionality rather than simply re-writing the old.''

SuperNOS is still a ''concept'', according to Mr Edwards.

''(It is a) codename for a technology initiative to bring the best of UNIX and NetWare together in a common system''.

When complete, the system would be open to licensing and would be provided on a wide range of platforms, he said.

In addition to its focus on the network operating system market, Novell is also looking at the client side of the business.

Last week Mr Frankenberg unveiled plans for an ''advanced Novell client interface that will make it compelling to be connected networks''.

Featuring a graphical three-dimensional user interface with a ''world metaphor'', the system would make network navigation simple for the first time, he said.

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However, it would not be a new operating system in its own right, Mr Edwards said.

Instead, it would be built on existing systems such as Windows 95.

''We will see over four to six months of demonstrating and customer testing of this system (before it is brought to market),'' he said.

''It will browse the Internet, NetWare and NCS networks and live in MS Windows, Chicago, UNIXWare and other desktop operating systems,'' Mr Frankenberg said.

''It will bring not only these end user services, but also compelling consistent NAPIs (network application programmer interfaces) for Windows, UNIX and other developers to unlock the power of the network from client applications.''

These new areas of focus do not just see Novell pulling out of the desktop operating system market - which was itself a move the market ''welcomed'', Mr Frankenberg said.

In addition, Novell is pulling out of the database business, up to a point. Having sold off Btrieve, its database product, the company is now only working with partners in the database area.

It will steer clear of creating vertical applications and, while working with information service providers as part of its networking technology initiative, it will not become an information service provider itself, or attempt to provide communications infrastructure.

''This frees up a considerable number of people who are now making the network fulfil our vision,'' Mr Frankenberg said.

Hardware would also be an area that Novell would abstain from dabbling in, he said.

''(Former Novell chairman and chief executive) Ray Noorda got us off hardware in the '80s. I will keep us on the wagon in the '90s,'' he said.

LANGUAGE: ENGLISH

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TAB 38

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

SUMMIT STRATEGIES

How Microsoft's Server Strategy Will Change the Industry—*Part I: Microsoft's Operating System and Application Strategy for Servers*

94-1564

FILED

FEB 14 1995

District Court
Columbia

Fine-Tuning Microsoft's Server Strategy

Microsoft competitors have taken great pleasure in the slow acceptance of the much hyped NT. Some of this gloating is certainly well deserved. After a long period of anticipatory eulogies for competitive operating systems, NT barely shipped 400,000 units in its first full year of availability. This is one-sixth the number of OS/2 shipments and only marginally higher than Solaris' 1993 shipments (see Figure 1). Moreover, the majority of NT shipments are either free copies or are being used for development or evaluation.

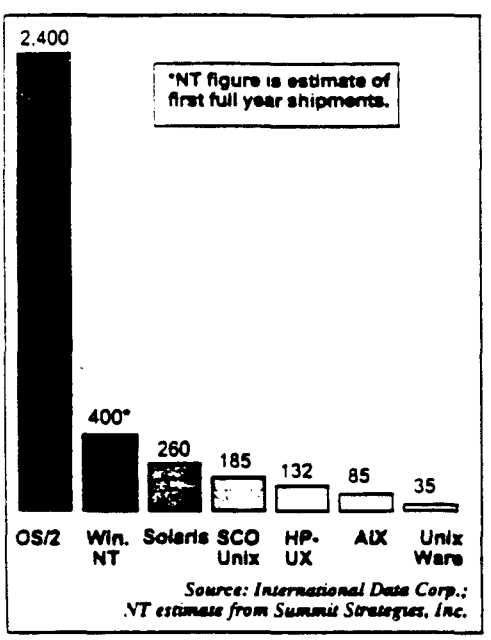

Figure 1: Licenses of 32-Bit Operating Systems Shipped in 1993 (thousands of units)

Are competitive OS vendors beginning their celebrations too soon? After all, consider how much solace Apple took in the slow acceptance of Windows.

Just as importantly, many NT cynics are finding their evidence in the wrong places. They are looking at the small number of total NT units, the minimal acceptance on the desktop and the technical deficiencies of the operating system. Many of those competitors who view NT as a server operating system are focusing on comparisons with and difficulties in displacing NetWare.

Those who want to objectively assess the prospects for NT should instead examine the positioning, capabilities and increasingly high-profile endorsements of NT as an application server operating system. While NT's acceptance as a desktop and file server OS has been slow, a growing number of large, leading-edge corporate customers see tremendous potential for NT as an application server in department-sized environments.

More importantly, Microsoft has optimized NT's server capabilities by segmenting its development focus between desktop and server versions and by introducing a broad range of complementary server offerings. Meanwhile, most of the leading server application vendors—including those introducing client/server versions of applications that had been available only

on minicomputers and mainframes—have selected NT as one of their first server operating systems, and the one offering the largest market potential.

What are NT's real prospects as a server operating system? How can one capitalize on its potential without making their company's future too dependent on Microsoft and NT?

Windows NT: The Rumors of its Death Are Premature

Make no mistake. *Windows NT and its successors are Microsoft's strategic operating system.* As Microsoft Executive Vice President Mike Maples states, "by the end of the 1990s there will be one Microsoft operating system—NT—but there will be three of them: NT Advanced Server, NT Advanced Workstation and Windows NT" (see Figure 2) Microsoft views the slow initial acceptance of NT as only a relatively minor delay in its quest for global software domination.

As discussed in Summit Strategies' report, *Profiting from the Transition from Personal Desktops to Enterprise Desktops*, initial NT **desktop** acceptance will be limited primarily to engineering, publishing, software development, trader workstation and a few other specialized applications with particular performance, security and reliability requirements. This will begin to change as developers write applications to Win32. Most of these applications will be optimized for Chicago, but they also will provide native performance on NT Workstation and, then, on Cairo.

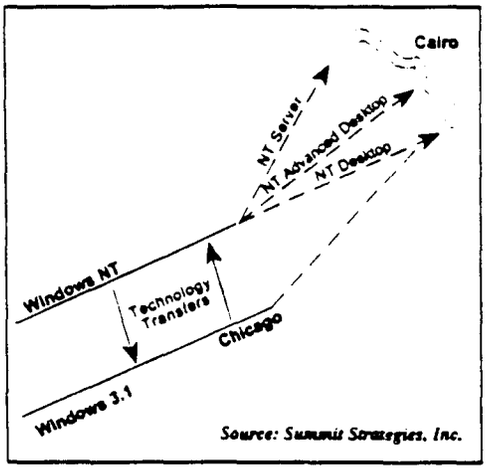

Figure 2: Future of the Windows Architecture

The story is very different for **NT Server**. NT Server is Microsoft's future. It is **THE FOUNDATION** of all of Microsoft's target growth markets—workgroup, department, enterprise, advanced consumer and information highway. Microsoft, however, has little or no experience or credibility in those markets. It must develop them essentially from scratch.

Microsoft recognizes these limitations and is dedicating extensive commitment and resources to its efforts to establish NT as a standard server operating system. It has carefully studied the factors that made other enterprise and server operating systems successful and has developed a strategy that combines some of the most important of these factors with Microsoft's own unique twists.

NT Server as the Foundation for Microsoft's Solution Platform

Microsoft's most obvious work on NT is in the form of Daytona, which will be more formally known as Windows NT 3.5. Daytona will deliver higher performance with smaller memory and will provide better reliability, robustness, SMP support and connectivity than version 3.1.

It will be divided into two optimized

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versions—one for advanced desktop users (NT Workstation) and one for servers (NT Server). This division will mark the beginning of separate, but still binary compatible code bases that are targeted at separate markets. Daytona also will provide a migration path to Cairo (NT version 4.0), the scaleable, object-oriented OS that Microsoft plans to release by the end of 1995.

However, as important as all of these operating system enhancements may be, they are only the foundation of a much broader Microsoft server strategy. This strategy is based on a broad range of server applications that Microsoft is developing to run on top of NT Server and which will tailor the OS for use in specific functions.

Microsoft plans to ship five server applications that will run on top of NT Server, some of which are already shipping: SQL Server, SNA Server, Systems Management Server, Exchange Server, and "Tiger" Video Server.

These server applications will likely be joined by others, including a search and navigation engine, server versions of many of its client-based Microsoft Office applications and, possibly, some "diagonal" server-based business applications, such as accounting, human resources management and sales automation. Microsoft is also developing an online service (code-named Marvel) that will generally compete with Prodigy and America Online.

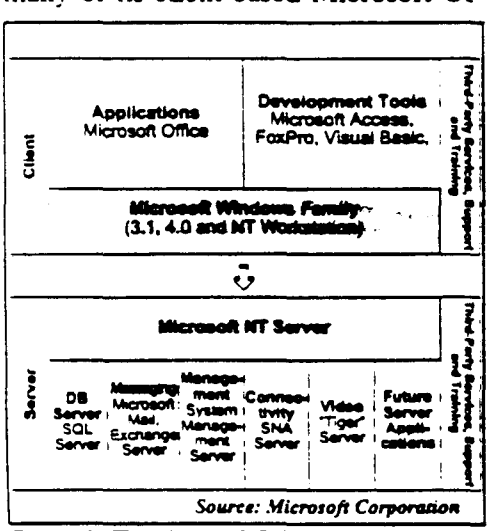

Figure 3: The Microsoft Solutions Platform

Although these server applications are very different from each other, all share at least two important factors: They are designed as general, extensible frameworks on which partners are encouraged to write their own specialized applications; and each is available on and optimized for use with NT Server and is designed to work seamlessly with all other Solution Platform tools and applications.

The combination of these factors will make NT Server a unique, very formidable server operating environment.

Creating a Consistent, Universal Server Environment

Each Microsoft server applications competes with some third-party offerings. SQL Server, for example, competes with Oracle7 and Sybase System 10. Exchange competes with Lotus Notes and Novell GroupWise.

Microsoft, however, is positioning each of these applications as generalized, extensible platforms on top of which smaller, more specialized and vertically-focused applications can be written.

Like Oracle and Sybase, Microsoft is attracting third-party developers to write specialized applications on top of its own generalized platforms. Unlike Oracle and Sybase, however, Microsoft will not develop these applications itself. It will leave this add-on market exclusively to

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third-party partners and has developed a number of large, well-funded cooperative technical, marketing, distribution and consulting programs to help these partners enter and expand their markets.

Microsoft has already attracted more than 600 partners to write applications on top of SQL Server, more than 25 to write for Systems Management Server, and 70 partners to write for Exchange Server. SQL Server applications, for example, range from diagonal accounting and document management through vertical applications for insurance and health care.

This base of third-party applications will help make the generalized Microsoft Server Platform a viable foundation for a broad range of highly specialized applications. In and of itself, however, this is not different from what is provided by competitive OSs (i.e., NetWare and Unix), databases (such as Oracle7) and groupware environments (such as Notes).

Microsoft, though, takes a giant step beyond these competitive environments by:

- Optimizing its applications for, and integrating them closely into its OS to provide fast performance, permit the application to take full advantage of all operating system capabilities (without duplicating them) and provide the basis for integrating important application capabilities directly into future versions of the OS.
- Providing a common set of development tools and integration protocols that allow third-party applications to be easily integrated into and take full advantage of the operating system and all Microsoft server applications and to integrate closely with Microsoft desktop OSs and applications.

This integration is critical to Microsoft's entire server strategy. It provides developers with a single set of APIs and communications protocols with which they can develop to all Microsoft desktop and server OSs and integrate with all compliant Microsoft and third-party applications. It provides customers with a modular, comprehensive, "easy-to-own" server environment.

Microsoft also is laying out a road map under to make this integration closer and deeper. As a result, data semantics and query technology will be common across both desktop and server components and communications will be facilitated between them.

More importantly, the OLE object model—already supported by all Microsoft and a small, but growing number of third-party applications—will form the foundation of Microsoft's next-generation Cairo operating system. In addition, many new Microsoft products are based on a technology that will be used in Cairo. This will simplify the upgrade path to Cairo and will allow the new OS to take over many of the capabilities of previously distinct applications.

Since Cairo will be a pure object-based OS, it will be highly modular. Components will be easily added, deleted or replaced, making it relatively easy for resellers or customers to customize the operating system and incorporate traditionally distinct functions into it. In fact, since all Microsoft server applications will fit into a single, integrated Cairo model, it will be almost impossible to distinguish between the operating system and the applications.

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Redefining Server Industry Rules to Match Microsoft Strengths

Microsoft's approach promises to make NT Server a much more comprehensive, integrated server environment than is available from any other client/server operating system, relational database or messaging backbone vendor. In fact, NT Server will approach the level of integration that previously had been available only in proprietary mainframe and minicomputer environments.

In and of itself, this integration will be attractive to large numbers of customers, application developers, OEMs and resellers, but Microsoft plans to go even further. It will offer these capabilities in a new way that no other competitor can directly match. It will combine capabilities that had traditionally been available only as high-priced, custom-developed solutions on expensive platforms with price levels and distribution channels that were available only for basic PC-level solutions.

In other words, *Microsoft plans to redefine the rules of competition in the server operating system and applications market.* It will rewrite these rules in a way that builds on its existing business model and makes it difficult, if not impossible, for other vendors to follow.

Summit Strategies believes that Microsoft will execute this strategy gradually and in a way that permits the incremental extension of its traditional low-overhead, product-oriented, virtual company business model. It will establish this presence in a niche in which there is very little entrenched competition—department-level, decision support application servers (see Figure 4). It will position the NT server environment as a more functional, scalable application platform than NetWare and a less expensive, easier-to-own alternative to Unix. While Microsoft plans to ultimately replace NetWare and Unix, initially it will coexist with them by emphasizing connectivity with Unix and its use as an application server within existing NetWare file server environments.

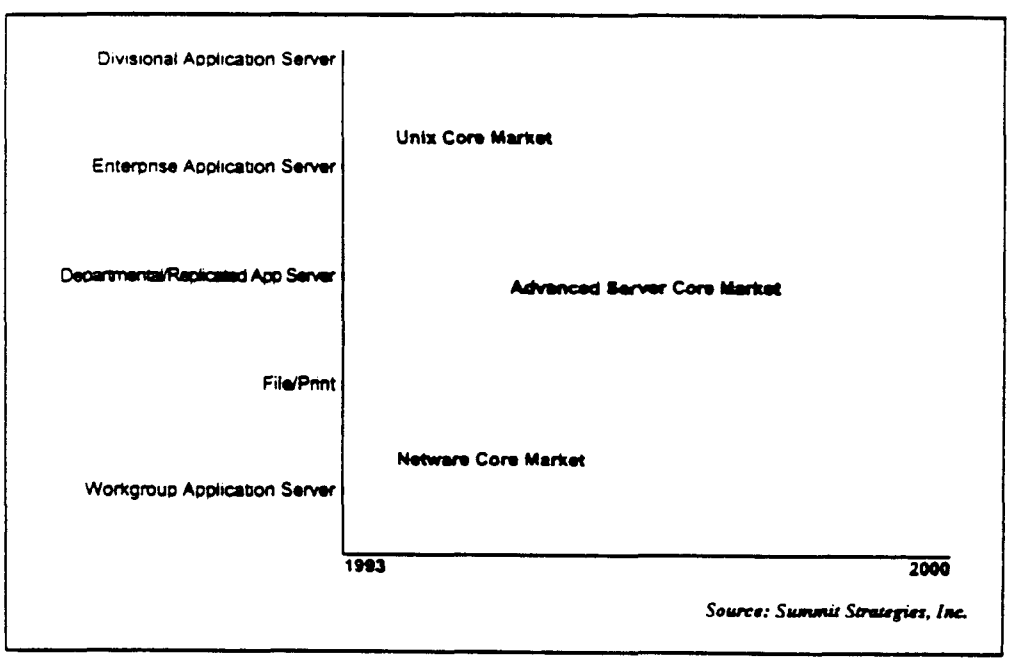

Figure 4 :Microsoft's Trojan Horse Strategy

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Microsoft will use this market as a beachhead from which to expand gradually into complementary segments, such as department-level and branch transaction servers, workgroup application servers, file and print servers and eventually, into some division-level environments. Summit Strategies expects this strategy to allow Microsoft to grow NT's position in the network server operating system market from about 2.5 percent in 1993, to almost 15 percent by 1997. It will play much larger roles in the application server market and, especially, in the low-end to midrange of that market.

Obstacles to Microsoft's Dominating the Application Server—Part I

Microsoft is certainly well-positioned to establish a strong position in the application server market. Its success, however, is far from assured. The company still faces a number of strong competitors and must overcome a number of self-imposed obstacles. These obstacles fall into two primary categories: some are product-based while the others are a result of the company's business model. Microsoft's product-based obstacles are:

The perceived unreliability of Microsoft server solutions

Everybody recognizes the limitations inherent in the Windows desktop environment. Most customers are willing to put up with these limitations in return for the benefits of low cost, application availability and standardization. Customers, however, are much less willing to accept such limitations in application server environments, particularly when they are using the servers to run business-critical applications that had previously been entrusted only to mainframes and minicomputers.

On one hand, NT is relatively robust for a Version 1.0 operating system. However, it is still immature, unproven and lacks many of the complementary tools that will be required for acceptance in business-critical environments. Microsoft does promise more robust upgrades to its operating system, RDBMS and communications software, new versions of needed system management and messaging software, and improved fault tolerance and recoverability. However, its continual missed shipment deadlines do not instill great confidence.

The limited openness and scalability of the Microsoft solution

Although Microsoft operating systems may be standards, they are not open. This creates a risk, since customers who adopt them will have a difficult time migrating to another operating systems, should the need arise. This problem will be particularly acute for customers who buy into Microsoft's server applications, since these applications will be available exclusively on NT Server and will be integrally linked to it.

This lock-in could be particularly dangerous for customers who require that their applications be highly scaleable, up through enterprise environments. Microsoft solutions currently support symmetric multiprocessing and will support clustering and be portable to all major processors. However, NT Server is currently tuned for single and dual processing. Its next implementation is only likely to scale to four processors, which is far below the 16- to 30-CPU tuning of a number of versions of Unix.

There are, however, mitigating factors for

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each of these concerns. Consider robustness. While Microsoft has missed deadlines in shipping virtually all of its key products, once they do ship, they are reasonably stable and deliver on most of the company's promises. When push comes to shove, most customers would prefer to receive a stable product late, than a buggy product on time. But, regardless of when Microsoft ships, computing environments with overwhelming needs for proven, reliable server environments are unlikely to select Microsoft products, at least for the next several years.

As for openness and portability, it is largely a question of target markets and tradeoffs. Generally speaking, large corporate MIS departments are most likely to demand that their server environments be open, flexible and scalable. Most of these MIS groups have the capabilities or the resources required to configure, develop for and administer these solutions. In contrast, many small businesses and department-level customers will be willing to trade off such benefits in return for solutions that are easier and less expensive to buy, configure and manage, and for which off-the-shelf applications are generally available.

The percentage of the market that will fall into each camp is certainly debatable. While everyone says that they want open, scalable and robust solutions, when it comes time to make a final decision, Summit Strategies believes that many more customers will choose easy, cheap and standard.

Obstacles to Microsoft's Dominating the Application Server—Part II

The other, and more difficult obstacles to Microsoft's success in the server market are more dependent on the company's business model and style of operation, than on its technology. Summit Strategies sees three primary obstacles in this category.

Microsoft's penchant for making enemies

Microsoft has always had a way of making enemies due to such factors as its sheer market power, position as industry upstart, cockiness, and the ruthless way in which it often deals with competitors and partners alike. On one hand, vendors have no choice but to cooperate with a company that is dominant in the market in which they wish to participate (as Microsoft is on the desktop). On the other hand, vendors can avoid, or actively help to defeat those companies which do not yet have market dominance.

Microsoft's lack of an enterprise marketing and support organization

Microsoft developed its business model around a product-focused, low-overhead, indirect sales and support model. This model was well-suited to the company's initial goal of selling high volumes of low-cost, non-mission-critical products into low levels of business organizations. However, Microsoft is now targeting with its server products towards the business solutions market, which developed around a totally different business model. Its customers, therefore, have very different requirements.

Microsoft does not have or plan to develop the type of direct sales,

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implementation consulting or 7/24, heterogeneous, on-site support capabilities that many business customers expect from their key system software vendors. While Microsoft is enhancing its direct marketing, consulting and support capabilities, it will rely on third-party partners to provide most of these capabilities. There is no evidence to suggest that its new target market is ready for this type of "virtual company" model.

Microsoft's confusing market messages

Microsoft doesn't seem to know what it wants to be when it grows up. On one hand, it insists that it is preparing to become an enterprise solutions vendor. It claims that NT Server and its accompanying applications will provide the robustness, scaleability, reliability, capabilities and features of traditional enterprise solutions. On the other hand, its product releases, actions and distribution and support programs suggest that Microsoft is really targeting department-level markets. These mixed messages are extremely confusing to customers and partners, and damages Microsoft's credibility as a business systems provider.

Summit Strategies believes that Microsoft will ultimately recognize that its most natural and responsive customer base, its partner franchise, and its largest potential, most strategic market lies in department-level and branch environments. It will focus its product development, its marketing resources and its partnership programs at this segment. Once it captures a dominant and sustainable position in this core market, it will expand in both directions—downward into file server and workgroup markets and upward into enterprise-level markets. Microsoft, however, must address a number of other issues before it can hope to effectively address even these department-level and branch application server markets. It must build the type of in-house infrastructure required to establish credibility in these markets and attract the type of application, distribution, integration and support partners that can address these customers' real needs.

As fully discussed in the next report in this series, *Microsoft's Market, Channel and Partner Development Strategy for Servers*, Microsoft recognizes many of these requirements and is making more progress in addressing them than is generally recognized.

In summary, Microsoft will certainly be a force to be reckoned with in the application server market. Anyone who hopes to play in this market must understand where Microsoft is going and how the company will change the rules of competition to its own advantage. Only by understanding these critical factors can a company decide whether they will partner or compete with Microsoft and what they must do to survive this competition or partnership.

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SUMMIT STRATEGIES

How Microsoft's Server Strategy Will Change the Industry—*Part II: Microsoft's Market, Channel and Partner Development Strategy for Servers*

Microsoft's goal is to establish NT Server as the AS/400 of the client/server world. It is developing a seamless, optimized, easy-to-use and administer environment that will provide access to a broad range of packaged, business-critical applications. The server platform will be sold to the same types of customers who have bought IBM's AS/400-based business solutions—a combination of small and midsized businesses and departments of larger corporations.

Similar to the AS/400 which comes standard with its own specially tuned and optimized operating system, database and management tools, Microsoft is developing a complete suite of base-level server applications that are available exclusively on and optimized for NT Server. Microsoft, however, cannot provide the type of bundled solution that IBM is offering. NT Server must run on multiple off-the-shelf servers and must accommodate databases, communications, management and other tools from a large number of competitive vendors.

Novell is another network operating system vendor who has successfully sold into small and midsized business and departments of larger corporations. As with Microsoft, Novell relied on partners and third-party partners for distribution and support and had to integrate NetWare into heterogeneous environments. However, Microsoft will face more difficult challenges than Novell did since NetWare is primarily a file server operating system. In general, file server LANs are easier to configure and manage and do not require the level of integration, tuning or solutions-oriented sales capabilities that client/server networks do.

Although Microsoft must provide the value of supporting a broad range of platforms and accessory software, it recognizes that too many options lead to the same type of confusion that has restrained the growth of Unix. Microsoft, therefore, is taking something of a middle path by providing customers with the choice to purchase its server operating system and applications either as:

- Separate, standalone products that can be integrated with any other vendors' NT Server products or as
- A single, integrated bundle (called Back Office), which includes the server operating system and Microsoft server applications as a preconfigured, integrated set of tools designed to work together. Pricing for this package is 40 percent less than if all packages were bought separately.

As discussed in the first report of this series, *Microsoft's Operating System and Application Strategy for Servers*, all Microsoft server products share a number of important factors. Each is:

- Available exclusively on, and optimized for use with NT Server;
- Designed for use with a common set of Microsoft development tools and integration protocols;
- Designed to work seamlessly with all other Solution Platform tools and applications;

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- Positioned as a generalized, extensible framework on which partners are encouraged to write their own specialized applications.

This commonality and integration is critical to Microsoft's server strategy. The goal is to attract large numbers of developers, resellers and administrators to the broad Microsoft environment, facilitate the availability of hundreds of specialized, packaged server applications and to provide customers with a modular, comprehensive, easy-to-own server environment. Microsoft plans to offer capabilities that have traditionally been available only as high-priced, custom-developed solutions on expensive platforms, at price points and through channels that were previously associated with PCs. The company also will provide migration paths from PCs.

Thus, Microsoft will *redefine the rules of competition* in the server operating system and applications market. If it succeeds, many of Microsoft's competitors will find it difficult—if not impossible—to compete.

Building a Business-Critical Solutions Infrastructure

Microsoft faces a number of challenges in its bid to enter these new markets. Its corporate infrastructure was well-suited to the marketing and support needs and the economic mandates of the PC industry. It had a small direct marketing organization to promote desktop productivity products to storefront computer dealers and a small telephone-based support staff to answer questions. It did not have, however, a large customer direct sales force, a consulting or integration group, or comprehensive support capabilities to which MIS managers and CIOs are accustomed. It could not hope to compete with vendors such as IBM, Hewlett-Packard and Oracle in selling bet-your-business server products to large corporations.

Microsoft, therefore, has begun to build new marketing, integration and support infrastructures that are intended to improve its credibility and more effectively address the needs of new customers. The company built a:

- 3,000-person direct marketing organization, 40 percent of whom are dedicated to addressing the needs of large corporate customers;
- 500-person consulting and systems integration group to help large corporate customers plan, design and implement sophisticated client/server business solutions around Microsoft products;
- 3,000-person, around-the-clock support group, 400 of whom are trained specifically on the complexities of server operating systems and heterogeneous networking. Premier customers get access to higher-level support people, an accelerated escalation procedure, a dedicated manager who will help them with proactive planning and, in some instances, access to on-site support capabilities.

Microsoft also formed a new marketing group, the Organization Customer Unit, that is responsible for developing and managing ongoing relationships with business organizations. This unit is divided into two primary groups: one to manage large corporate customers, the other to build sales into small and midsized companies. The Organizations Unit is responsible for:

- Managing the company's Select volume licensing program, which is intended to make it easier for large corporations to buy from Microsoft and to build ongoing relationships with them;
- Recruiting and managing relationships with client/server application developers and systems integrators who will be most important to Microsoft's efforts to sell client/server solutions into large corporate accounts;

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- Responsibility for the Microsoft's value-added Solution Providers programs. It recruits and manages resellers who will be capable of selling Microsoft server products and client/server solutions and other partners who are specially qualified to train customers on and support these new implementations.

The Organization Customer Unit also owns Microsoft's Industry Marketing group which targets vertical markets that can potentially generate large sales of Microsoft-based client/server solutions.

Defining a New Client/Server Business Model

Microsoft's direct work with corporate accounts, through its newly enlarged direct sales force, consulting services and support arm, is somewhat similar to that provided by traditional enterprise system and software vendors. But there are two major differences between Microsoft's approach and those of enterprise vendors. Under the Microsoft program:

- Third parties handle all product delivery and much of the implementation and actual support requirements. All Microsoft product sales, even those under the Select program, are fulfilled by third parties. Microsoft's consulting and support groups will typically refer customers to third-party partners or bring these partners into a project themselves, with the goal of having the partner handle the implementation and most of the follow-up work.
- The primary goal in working directly with customers is to transfer Microsoft's knowledge to its customers, not to actually do the work themselves. For example, the company generally confines consulting work to fast-in/fast-out projects where it defines architectural requirements, plans transitions and trains or supervises customer employees and third parties to provide the actual implementation work and to fully handle future projects themselves.

Virtually all aspects of these services have the ultimate goal of helping third-party partners address the needs of corporate customers without direct involvement by Microsoft. While all product fulfillment is handled exclusively through third parties, Microsoft is trying to involve appropriate partners directly in the demand creation process.

Microsoft's consulting and support organizations have even more formal structures for training and for bringing partners into accounts. MCS consultants, for example, dedicate approximately ten percent of their total billable hours to helping Microsoft Solution Providers (SP) and count on partners for providing more than half of all their billable hours in some of its practices.

This cooperation with SP partners also carries through Microsoft's support and training organizations. For example, Microsoft Education Services no longer deliver training directly to end users. The company has two new channels, Authorized Training Centers and Technical Education Centers, that it established specifically to deliver courses on Microsoft products and to certify partners who have completed specialized training.

The company's support group, meanwhile, provides only very limited support for Microsoft products' connections into heterogeneous environments. One class of partners, Authorized Service Centers, have been authorized to provide such capabilities. Furthermore, the company provides very little on-site work and will not even go on-site without a Solution Provider. If the customer does not have an SP, Microsoft will help it select one and then bring the Solutions Provider up-to-speed on the customer's environment.

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Developing Partnerships to Enable Microsoft's Virtual Company Model: Phase One

Every vendor, irrespective of the degree of its horizontal integration, relies on partners to help sell its products. Microsoft's virtual company model will require much closer partnerships with many more types of partners than most other companies' models.

Various partners will play different roles in the Microsoft server business model, but these roles will change significantly as the market for client/server solutions matures. During the earliest stages of the market, Microsoft must work most closely with solutions-oriented systems vendors, systems integrators and software developers. After all:

- Systems vendor partners such AT&T GIS and Digital Equipment and systems integrators such as Andersen and Business Systems Group work directly with large corporate customers to help define the need for, develop, implement and support custom solutions;
- Infrastructure software developers will provide the capabilities required for more demanding and sophisticated applications such as enterprise transaction processing;
- Application vendors develop the solutions that will be required to attract customers who cannot or do not want to develop their own applications. Microsoft has already gained commitments from vendors of leading client/server accounting, MRP, groupware, document management, and customer management applications;
- Relational database vendors will play particularly important roles in the early stages of this market. RDBMSs are critical client/server infrastructure technologies and most of the vendors have their own solution-based sales, consulting, application development and support capabilities. Moreover, once an RDBMS is ported to an operating system, it is relatively easy for all of the applications written to these RDBMSs to be ported.

Microsoft will always want to play a role in the type of large, corporate, custom implementations that are handled by large system vendors SI, RDBMS and application partners. Therefore, it will have a continuing need to work with these first-generation client/server partners. However, Microsoft will be ready to shift its primary emphasis to a new group of partners once client/server computing (especially Microsoft's approach to it) becomes more widely understood and accepted and a critical mass of applications become available for NT Server.

Developing Partnerships to Enable Microsoft's Virtual Company Model: Phase Two

Microsoft's primary strength is in selling large quantities of standard products to smaller companies and individual customers through large numbers of third-party channels. It will attempt to apply this same business model to its server business. A number of Microsoft partners are already established in and committed to this type of business.

Microsoft is encouraging current server vendor partners (everyone from AST through Tricord) to bundle NT Server and the Back Office application suite with some of their servers. Some partners such as Compaq and Informix will play critical roles as "bridge vendor" partners, helping to "repackage" the capabilities developed and lessons learned from direct sales of client/server solutions into third-party channel programs. (Summit Strategies' report, *The New Age of Client/Server Applications*, contains a full examination

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of the roles of bridge vendors.)

Microsoft already has signed up almost 6,000 third-party Solution Provider resellers, and plans to grow this number to about 15,000 resellers by mid-1995. The company is focusing SP recruiting efforts primarily at established, successful resellers of products including the AS/400, Novell NetWare, Sun workstations, Unix RDBMSs and vertical and diagonal applications. It is targeting resellers who are best situated to address Microsoft's targeted verticals in geographies that lack adequate coverage. Microsoft also is devoting extensive efforts to training and generating business for these partners. For example, it is:

- Establishing large, formal programs (e.g., DevCast, BusCast, TechNet and Microsoft Partner Network) to educate and train these channels;
- Passing large numbers of leads to these channels, and is developing vehicles (e.g., trade shows, road shows and seminars) to generate demand;
- Using Microsoft consultants and support engineers to train partners to perform functions currently provided by Microsoft personnel, and to actively bring these partners into accounts;
- Actively helping high-end, traditionally direct sales system vendors (e.g., AT&T GIS and Digital), database vendors (e.g., Oracle and Sybase) and application vendors (e.g., SAP and D&B Software) to develop and offer their own products through third-party channels;
- Encouraging distributors and aggregators to provide built-to-order, custom-configured server bundles (that combine Back Office back-end, Vertical Office front-end, and specialized third-party applications) to their resellers.

Microsoft plans to use its market position, vendor partnerships and aggressive channel development programs to build a broad, third-party, client/server distribution and support channel well before its competitors. It will then try to lock these channels into Microsoft solutions by ensuring that they are familiar and comfortable with Microsoft products. Microsoft will do this by providing the best technical and marketing support, by using its marketing muscle to generate more sales than competitors (with less effort and resources from SPs), and by promising never to directly compete with its partners (as proprietary and Unix vendors often do).

Microsoft's Prospects for Success in the Client/Server Server Market

Unix vendors will most likely offer client/server server solutions that are more open, robust, flexible and scalable than those offered by Microsoft. IBM will most likely offer AS/400 solutions that are more turnkey and easier to manage. Novell will most likely offer solutions that are lower priced. Microsoft, however, will combine some of the best of all of these capabilities with a number of its own unique advantages. For example, it will offer:

- The largest base of binary compatible servers and off-the-shelf applications of any server environment;
- Access through the broadest range of distribution channels in the industry;
- Probably, the lowest cost, best price/performance application servers in the industry (due to a combination of Microsoft's aggressive software pricing, availability on all hardware platforms and broad distribution);
- A turnkey solution (based on Back Office and Vertical Office) in which all of the components will integrate seamlessly with each other and support the same APIs (e.g., OLE, ODBC and MAPI);

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- A strong development platform to which custom and packaged application developers can write using a broad range of Microsoft and third-party tools;
- Strong scalability ranging from uniprocessor 486-based PC servers to 30 CPU Sequent servers and a broad range of uni- and multiprocessor RISC servers; and
- Systems and software that provide reliability, availability, manageability, security and robustness that will be suitable for all but the most demanding applications and environments.

Given the strategic importance of the server market to Microsoft's future, the company can be expected to compete ferociously, and offer the largest, best-funded partner recruitment, training, advertising and marketing programs in the industry. However, as discussed in the first report of this series on Microsoft's NT Server strategy, *Microsoft's Operating System and Application Strategy for Servers*, the company will still be hampered by factors such as:

- Novell's strong established position in the channel and in the file server and low-end database server markets;
- Unix's perceived (and in many instances, real) advantages in areas such as reliability, scalability and openness;
- Microsoft's reputation for ruthlessness and for competing with its software partners in a segment of the market in which partnerships are critical; and
- Whether the market or channel is prepared for the virtual company model on which Microsoft is staking its future.

Summit Strategies views this last issue as the *single most important, most open question* in assessing Microsoft's prospects for success in this new market. Will customers who are accustomed to a single vendor solution really accept such a diffuse, nontraditional chain of responsibility for support of mission-critical, line-of-business solutions? Will Microsoft's partners be able to address the demands that this model will place on them?

As discussed in a number of our previous reports, Summit Strategies believes that this model *will* work and that Microsoft is building the type of infrastructure that is required to support it. But even *if* the virtual company model works, there is still a question as to *when* it will work.

While the virtual company model will almost certainly succeed when client/server technologies and markets become more mature, how suitable is it during the early stages of the market? After all, few people currently understand how to design, develop or maintain client/server solutions, the tools are immature and most configurations are still custom developed.

Microsoft's initial reliance on the virtual company model has the potential of effectively locking the company out of the market before its business model has a chance to prove itself. This, however, is not likely to occur. After all, Phase One partners such as AT&T GIS, Digital Equipment, Sequent, Andersen, EDS and SAP typically assume full responsibility for their solutions.

Ultimately, customers and partners must rely on Microsoft rather than on system vendors for the stability of the operating system and the foundation server applications. However, this should not be much of a problem since no systems integrator or vendor (including IBM) assumes full responsibility for every component of a solution. Although it may cause some consternation, everybody uses some type of third-party products. While the risk may still be greater for a Microsoft-based solution than for a vendor-specific Unix system, the level of risk will decline as Microsoft's server products mature (as with NT Server 3.5) and as implementations of leading reference accounts become proven.

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Overall, Summit Strategies is quite optimistic about the prospects for NT Server. As fully discussed in the first report of this series, we expect NT Server to account for a rapidly growing share of the network operating system market, growing from about 2.4 percent in 1993 to 14 percent in 1997.

More important than the raw numbers, are the segments in which NT Server will experience its greatest acceptance. Penetration will be relatively low in file server and enterprise application server markets, yet NT Server is likely to dominate the large, highly strategic midrange (large workgroups, departments and branch office) application server markets. As shown in Figure 1, this entry will provide a perfect vehicle by which Microsoft will be able to extend its penetration downward into the file server and workgroup application server markets, and gradually upward into the division and enterprise application server markets.

Opportunities and Threats for Microsoft Partners and Competitors

Microsoft's likely success in the application server market presents some significant opportunities for partners. Each phase of the market will offer significant revenue and profit opportunities, but the opportunities will vary greatly by type of partner and over time.

During Phase One, turnkey solutions partners who can define, develop, implement and support custom applications will have a great advantage. In Phase Two, as NT Server and applications become more established in the market, and as client/server solutions become poised to enter broader markets and channels, Microsoft will shift its attentions to "bridge vendors" who can help translate the capabilities and lessons of Phase One-implementations into the type of "cookbook" approaches and solutions that will spur broad market, third-party sales. When the market enters Phase Three, the lowest cost producers with access to the broadest, most effective distribution channels will be best situated.

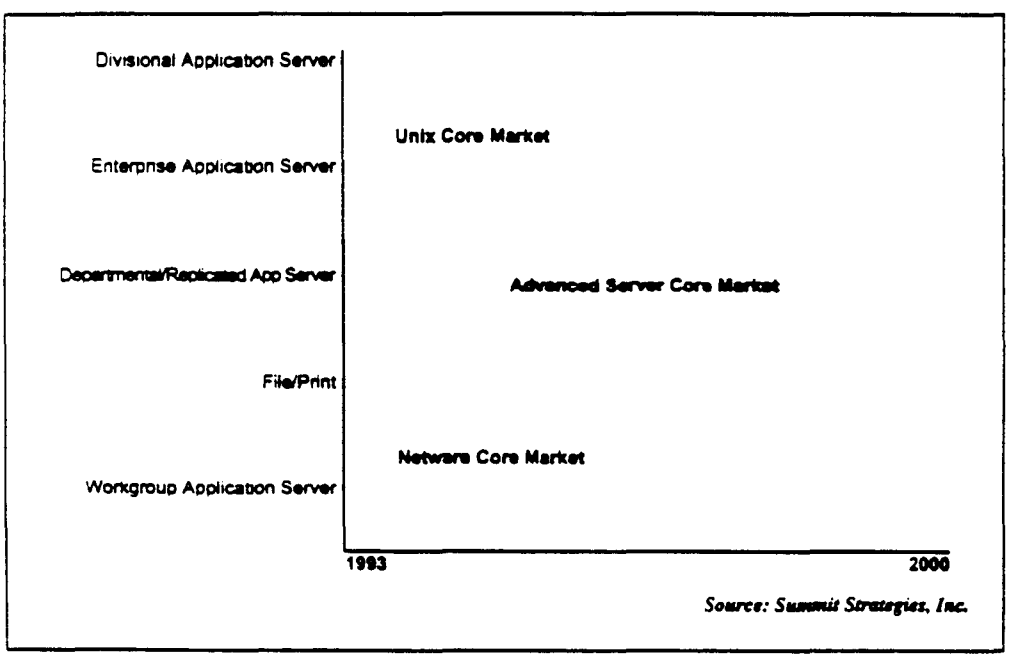

Figure 1: Microsoft's Server Market and Expansion Strategy

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By this time, Phase One partners will have to either:

- Evolve their business models to play by Phase Three rules;
- Adapt their value-add to ever more specialized, demanding, and narrower segments of the market such as distributed, object-based transaction processing environments;
- Find another market such as global, enterprise Unix solutions; or
- Go out of business.

All types of partners—hardware vendors, software vendors and resellers—will be susceptible to this type of shake-out.

Microsoft is using its unique product line and market position to change the rules of competition in these markets. It is optimizing its applications for its NT Server operating system, providing the type of bundling incentives and using the type of pricing approaches that few, if any, competitors will be able to follow.

Even though Microsoft currently is competing only with vendors of the broadest server foundation applications, all partners need to beware. As the client/server market grows, previously specialized applications will become increasingly mainstream. As discussed in previous reports such as *Developing and Leveraging Client/Server into Broad Markets and Channels*, Summit Strategies believes that diagonal applications such as accounting and sales automation will become just as broad and strategic in the client/server age as database and presentation graphics were in the personal computer age. If Microsoft decides to enter these markets, some server application vendors may face the same types of options in competing with Microsoft that server operating system vendors will face over the next several years.

If Microsoft does succeed in changing the rules of competition, few will be able to go head-to-head with Microsoft products. They will be faced with a choice of one of two primary strategies: either focus their product and market development efforts on segments of the market in which they have a clear advantage and can establish a reasonably defensible position; or introduce highly focused products that are optimized for a market niche that is too narrow to attract the direct (or at least focused) attention of Microsoft.

In summary, partnering with Microsoft may be as dangerous as competing with it. Partners can protect themselves by continually adapting their value-add to provide capabilities that Microsoft will require during different stages of its server products' life cycle.

Vendors still have about a three-year window of opportunity before Microsoft establishes the level of market power that will make it difficult or impossible to compete head-to-head in its core market. Even after Microsoft attains this level of power, competitors will have many opportunities to "hit Microsoft where it isn't" by targeting segments where Microsoft and its solutions are weak or by focusing on niches that are too small or specialized to draw Microsoft's focus (future Summit Strategies' reports will address this and related issues in greater detail).

Although partners and competitors will always have plenty of opportunities, every vendor and reseller in the server market will have to learn to play by new rules. These rules will be generally defined by Microsoft, around the vendor's own capabilities, channel strengths and business model. For better or worse, the rules of the application server market will come to look increasingly like those that currently shape the personal computer market.

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TAB 39

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

NEWS RELEASE

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94-1564

FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

MICROSOFT AND VISA TO PROVIDE SECURE TRANSACTION TECHNOLOGY FOR ELECTRONIC COMMERCE

Secure Transactions Across Networks Mean Lower Costs, Expanded Markets

PARIS, France, November 8, 1994 -- Microsoft Corporation and Visa International today announced that they have signed a letter of intent to jointly provide a standard, convenient and secure method for executing electronic bankcard transactions across global public and private networks. Their secure solution will help expand the market for electronic commerce by providing new opportunities for consumers, merchants and Visa member financial institutions.

The secure transaction technology will consist of software that supports both the cardholder and merchant sides of a transaction and works with the VisaNet payment system to authenticate buyers and sellers and to secure transactions for clearing and settlement. Microsoft and Visa will publish specifications that make secure transaction technology available to other software vendors and card systems to implement themselves or license from Microsoft.

The technology will be developed initially for the Microsoft® Windows ™ operating system family and is scheduled to be available in 1995. It will include extensive encryption capabilities based on technology from RSA® Data Security, Inc.

- more -

"The technological leadership of Microsoft, along with the global financial reach of Visa, allows the consumer to make payments over networks worldwide as easily and safely as payments made in person," said William L. Chenevich, group vice president, Visa International. "Our relationship with Microsoft will help to accelerate the growth of commerce over electronic networks and will open up new opportunities for our member institutions, merchants and cardholders worldwide. As the information highway becomes defined, we must look at a variety of alliances and a variety of ways to protect the financial relationships of our members and their cardholders." Chenevich also indicated that the two companies welcomed the interest and support of other parties.

"Right now, we're all street people on the information highway; we can't protect our privacy and information; we can't prove who we are; we can't buy anything," said Nathan Myrhvold, senior vice president of Advanced Technology at Microsoft. "The Microsoft-Visa technology solves these problems by using public-key technology to assure safety and privacy, and easy-to-use client software which allows consumers to use their existing bankcards to pay for goods and services across multiple applications and merchants."

Will F. Nicholson, Jr., chairman of the board of directors of Visa U.S.A. and president and CEO of Colorado National Bankshares, Inc., added that U.S. financial institutions were facing new challenges in a changing payments environment to provide their customers with service and support. "With Microsoft, we have an opportunity to bring together technology and banking, as consumers explore alternative methods of purchasing at new points of transactions," he said.

Founded in 1975, Microsoft is the worldwide leader in software for personal computers. The company offers a wide range of products and services for business and personal use, each designed with the mission of making it easier and more enjoyable for people to take advantage of the full power of

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personal computing every day. Microsoft is headquartered in Redmond, Washington, U.S.A.

Visa, the world's largest consumer payment system, has more than 11 million acceptance locations. Visa member financial institutions have issued more than 357 million cards worldwide including more than 185 million in the U.S. Visa also has the leading global ATM network. Visa, headquarters in the U.S., has offices in London (Europe region), Tokyo (Asia Pacific region), Toronto, (Canada region) and Miami (Latin America region).

# # #

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RSA is a registered trademark of RSA Data Security, Inc.

TAB 40

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

Trade Group's Board Cancels Hearing On Microsoft's Plan to Acquire Intuit

By Viveca Novak
And Don Clark
Staff Reporters of The Wall Street Journal

WASHINGTON—An unusual trade-group hearing on **Microsoft** Corp.'s pending acquisition of **Intuit** Inc., scheduled to take place today, was canceled after Microsoft successfully pressed for an eleventh-hour meeting of the group's board.

Mike Maples, a Microsoft executive vice president, said the Information Technology Association of America board voted overwhelmingly Friday to cancel the hearing, after he invoked his right as a director to call a board meeting. "It wasn't a Microsoft-driven decision," he said.

But he complained in an interview that scheduled speakers at the hearing were all opponents of the Intuit deal who are believed to be talking to the Justice Department's antitrust division. That division is reviewing the transaction.

News of the cancellation reverberated. "It's pretty apparent that Microsoft squelched it," said Dan Schley, former head of a tax software firm who was scheduled to give his views at the session. "The industry is clearly up in arms about this." ITAA's 325 members include such giants as **International Business Machines** Corp. and General Motors Corp.'s **Electronic Data Systems** Corp., as well as Microsoft.

"I'm very disappointed," said Bernard Goldstein, a former chairman of ITAA. "It was very obvious Microsoft was unhappy with this process, but this really is, for the industry, a very large issue. It's worthy of venting . . ."

ITAA chairman Jim Mann, who formed the committee last month, said he believed the group's diverse membership would make for a range of opinions.

Instead of holding today's hearing, the committee will broaden its inquiry to evaluate Microsoft's overall impact on the information technology industry.

Rick Crandall, an ITAA board member and chairman of **Comshare**, a software company in Ann Arbor, Mich., said a larger look is needed. "The question is, where does the industry stand with regard to Microsoft, what are its competitive tactics, and are they illegal or unhealthy for the industry?"

The latest developments add to the intensity surrounding the review. Justice Department staff are being inundated with the views—mostly negative—of companies and individuals about the impact of the deal beyond the financial software market that it most directly affects.

Stephen Case, chief executive of America Online, was to speak at the ITAA event today. Two on-line service providers – Compuserve Inc., a unit of **H & R Block** Co.; and Prodigy Services Co., a joint venture of International Business Machines Corp. and Sears, **Roebuck & Co.** – **have talked** to the antitrust division about the Microsoft deal.

Mr. Schley has been a key source of information about the personal financial software industry for antitrust division staff. He said that in a conference call with seven lawyers and eight economists from the division a couple of weeks ago, he told the staff that he didn't believe that Microsoft's plan to sell its personal finance package, Money, to rival **Novell** Inc., will lead to real competition for Intuit's much more popular Quicken program. Microsoft hopes the divestiture will allay government concerns about any anticompetitive effects of its Intuit acquisition.

Exh. 40
94-1564 SS
FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

TAB 41

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Exh. 41

94-1534SS

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

Microsoft's New Marketing Tactics Draw Complaints

Hard Push to Get Commitments to Windows 95 May Hurt IBM's OS/2

By DON CLARK
And LAURIE HAYS
Staff Reporters of THE WALL STREET JOURNAL

Five months after a controversial settlement with the Justice Department, Microsoft Corp. is using aggressive new marketing tactics that have angered some key customers.

The software powerhouse is seeking more money and more marketing support from personal-computer companies for Windows 95, a fundamental rewrite of the operating system used on more than 100 million personal computers. Microsoft's proposed licensing terms have caused a chorus of complaints from PC makers, who are under severe pressure to lower their own prices.

Microsoft's terms include an extensive list of marketing incentives to get PC makers to quickly commit to the new program, which could bring more than $1 billion in sales in its first 12 months. Windows 95 also could help Microsoft further undermine International Business Machines Corp.'s OS/2 program, which has about 5% of the market compared with Microsoft's 80%.

Some computer makers contend the new terms raise an unfair barrier to their offering OS/2 and may violate the spirit of Microsoft's consent decree with the Justice Department. Vobis Microcomputer AG, Germany's biggest personal-computer maker, also has publicly complained about Microsoft's proposed licensing terms for its previous operating systems and announced plans to start loading machines with OS/2.

Microsoft insists it is operating strictly within the guidelines of the settlement. Several large computer makers, including Compaq Computer Corp. and Packard Bell Electronics Inc., also said they see no unfair anticompetitive bias in the marketing incentives.

Still, the harsh response to its biggest-ever selling job suggests that even mighty Microsoft has to tread carefully in prodding the industry toward a major modernization effort. A serious misstep could wind up boosting OS/2, which IBM is promoting heavily to take advantage of delays in shipping Windows 95. There are signs that Microsoft already has begun backing away from a major price increase for the product.

"Now is not a sane time to be unreasonable," said Steven Ballmer, Microsoft's executive vice president of sales and support. "IBM has never been thumping the drum harder for OS/2 than they are now. . . . I don't think they're going to be successful, but you don't gamble the company on it."

Microsoft doesn't disclose its terms for PC makers. Several PC makers said Microsoft representatives mentioned possible prices from $55 to $75 before discounts for Windows 95, an increase that could be more than 100% over the estimated $35 average for the combination of its existing DOS and Windows programs.

But Michael Culver, senior director of product management at Acer Inc.'s PC unit in San Jose, Calif., said Microsoft more recently dropped the proposed price sharply and reduced the size and number of marketing discounts offered.

"The ultimate goal is to have a similar price as what we are paying for DOS and Windows now," Mr. Culver said. "In the end, whether they've been forced to be more accommodating, or it's just negotiating strategy, I think in the end, it's going to work."

After the haggling, some analysts believe Microsoft will wind up settling for a price increase of 15% to 20% over earlier operating systems. Rick Sherlund, an analyst at Goldman, Sachs & Co., estimated that computer makers would wind up paying about $43 a machine for Windows 95.

> 'Microsoft can kill us,' the chairman of one PC maker said. 'I worry more about my dealings with Microsoft than I do about my competitors.'

The flap is just the latest reverberation from the advent of Windows 95, which replaces both DOS and Windows and is scheduled to be shipped in the second quarter of next year.

The stakes are equally high for IBM, which is battling to build acceptance for its latest version of OS/2, called Warp. IBM's operating system is based on DOS and Windows, and runs application programs written for them. But Warp won't run programs tailored for Windows 95 unless IBM makes some major changes to the program, a process that Microsoft expects could take years. The new software gap could remove a prop keeping IBM's software on the market, Microsoft believes.

Mr. Ballmer asserted that IBM is offering computer makers OS/2 for free and may be even paying some to take it. An IBM spokeswoman denied both contentions; she wouldn't disclose exact pricing, but conceded that IBM is "going for market share." IBM said it has sold 500,000 copies of Warp in five weeks, and the spokeswoman added that the company viewed the recent friction between Microsoft and computer makers as "an opportunity."

Complaints about Microsoft's latest tactics come as the Justice Department prepares for a final appearance before a federal judge on the consent decree this week. Robert Litan, deputy assistant attorney general in the department's antitrust division, declined to comment on specific allegations against the company but said he has continued to talk to rivals about Microsoft's actions.

The consent decree, signed in July, ended Microsoft's practice of "per-processor" licenses, which Justice contended excluded competitors by forcing computer makers to pay for every PC they shipped that contained particular microprocessor chips. It also prohibited "minimum commitments," under which computer makers were compelled to pay for a set number of copies of Microsoft's programs, regardless of whether they sold the estimated number of computers or not.

Mr. Ballmer said Microsoft's new marketing incentives for Windows 95 were designed to take the place of minimum commitments while accelerating the move to the new product. According to a draft of one of the "market development agreements," PC makers can choose among a series of "milestone" steps that can reduce their royalty payments as much as $20 a machine.

For example, PC makers can get a $3 discount a system if they agree to install Windows 95 on at least 50% of their desktop systems within 30 days of the time it appears on the market. They can earn another $2 if they sign a license agreement by March 1, another $3 by completing a certification program to earn a Windows 95 logo by next April 1, plus $2 more for putting that logo on PC cases and keyboards.

But some PC makers contend they have little choice but to sign the agreements. Executives at these companies, who requested anonymity because of potential retaliation from Microsoft, said they could face prices for Windows 95 that will put them at a disadvantage against competitors if they don't sign up.

"Microsoft can kill us," the chairman of one company added. "I worry more about my dealings with Microsoft than I do about my competitors."

Some exectives said promoting Windows 95 and designing systems to win certification for its logo program reduces the money they have to spend promoting other operating systems. An executive at one PC maker said it already has cut back on his OS/2 Warp support after agreeing to the Microsoft marketing steps. He said his understanding with Microsoft prohibits him from exhibiting Warp at a trade show booth alongside Windows, although that restriction isn't explicitly stated in the contract.

"We have to sit there and swallow it. What else do we do?" said the computer executive. He added in a reference to activities permitted under the consent decree, "Microsoft has just found a new way to skin the cat."

Microsoft's Mr. Ballmer rejected such assertions, stating that the incentives are entirely voluntary and don't discriminate against other operating systems. "The amount of work isn't a strenuous set of activities," he said. "If there isn't a payback, you just don't do them."

Vobis, the German PC maker, claims that Microsoft insisted on computing discounts for its existing operating systems based on Vobis's total PC shipments. In August, just after the consent decree was signed, Microsoft proposed a contract to Vobis that estimated its annual shipments of 88 models at around 475,000 and quoted a Windows price of $28 a copy based on that total.

Theo Lieven, chairman of Vobis, said he wanted a discount based on lower estimated sales, so that he could accommodate customers that may ask for OS/2. But Microsoft wouldn't quote him a price based on a smaller number of computer shipments, he said. Instead, in oral negotiations, Microsoft said Vobis would have to pay $63 for each machine under a so-called per-copy license, a more costly licensing scheme that doesn't use estimated sales.

The consent decree permits volume discounts and says they may be based on estimates of future sales. Microsoft's Mr. Ballmer said Mr. Lieven wasn't being required to put Windows on every machine he shipped in order to receive the $28 price. Vobis would pay that price only on copies it used; if the number wound up to be less than 475,000, the royalty rate would be renegotiated next year, he said.

But Mr. Lieven insisted that once he agreed to a price based on total shipments, he would be forced to use Windows on that many machines, regardless of what customers ended up wanting. Microsoft "is doing exactly the same as before" the consent decree, Mr. Lieven charged.

"I have everyday negotiations with Microsoft, but it's difficult for them to understand that this decade of monopolism has ended. We want a choice of operating systems," he said.

MTC-00030631_0573

TAB 42

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

4TH STORY of Focus printed in FULL format.

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The Washington Post

July 18, 1994, Monday, Final Edition

SECTION: FIRST SECTION; PAGE A1

LENGTH: 1472 words

94-1564

FILED

FEB 14 1995

U.S. District Court
District of Columbia

HEADLINE: Microsoft Deal Came Down to a Phone Call;
With Bill Gates on the Line, Justice Dept. Ends a Lengthy Probe

SERIES: Occasional

BYLINE: Elizabeth Corcoran, Washington Post Staff Writer

BODY:

By last Friday afternoon, the dozen lawyers gathered in a conference room at the Justice Department were exhausted. They had spent the past day and a half wrangling over the terms of a settlement that -- if signed -- would close the most extensive antitrust investigation of a software company in history.

"Get Bill Gates on the phone," demanded Anne K. Bingaman, the department's assistant attorney general for antitrust.

After almost five years of investigation, the Justice Department was on the verge of settling its charges of monopolistic practices with software giant Microsoft Corp. But not near enough to sign an agreement. Two previous negotiating sessions had broken off each time in a stalemate.

Bingaman believed she had to talk to the man at the top, Gates, the 38-year-old co-founder and chairman of Microsoft. Over the course of 19 years Gates had turned a simple software program into a company with $ 4.5 billion in annual sales. For much of the industry, he didn't just run the company, he was the company.

Soon Gates came on the line. Bingaman recalled that after an hour's back-and-forth over details of Microsoft's licensing practices, Gates said the words she wanted to hear: "I can live with this."

Meeting with reporters on Saturday, Bingaman said the settlement would end a virtual monopoly by Microsoft with its MS-DOS and Windows "operating system" software, which controls the basic functions of personal computers. It would mean lower prices and greater choice for consumers, she said.

Microsoft, at its own press conference here an hour later, offered a different assessment: "I'm going to invite your attention back to the facts and cut the rhetoric," Microsoft general counsel William Neukom said. The company had settled a costly, bothersome suit; Microsoft's business would not be affected by the changes.

The following reconstruction was based on interviews with Bingaman, Gates and

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others involved in the negotiations.

After a long winter of studying evidence, Bingaman was convinced that Microsoft's licensing practices for its operating system were unfair. In mid-June, she informed her boss, Attorney General Janet Reno, that she thought there was enough evidence to sue. As as a matter of course, Bingaman's office then contacted the company.

Bingaman asked Microsoft if it was interested in settling. Neukom said the company was willing to listen.

Microsoft was fed up with the investigation, which had begun in 1989 with an inconclusive Federal Trade Commission inquiry. The Justice Department picked up the case last August.

Although Microsoft had provided what Gates described as "millions of documents and every piece of e-mail," or electronic mail, for more than four years, it never knew precisely what the government was trying to prove, he said. News reports floated ideas such as breaking up the company.

"In some ways, a lawsuit would have been a more just environment," Gates said yesterday, because Microsoft could have publicaly aired its side of the case. "Things were just so random."

Gates had once been proud about having virtually nothing to do with Washington politics. But in the past year he had become a more frequent visitor to the nation's capital, hiring a local public relations firm and calling on journalists and administration officials to discuss the software industry, the information highway, foreign trade -- and the investigation.

When Bingaman and Neukom finally met in late June, the assistant attorney general laid out a narrower case than many of the press reports had suggested.

The Justice Department wanted Microsoft to change licensing practices that the department contended unfairly discouraged computer makers from buying operating systems from Microsoft's competitors. She broached terms for a possible settlement.

A day or so later Neukom responded. Microsoft was willing to negotiate. He requested, however, that the European Commission, which was investigating similar charges against Microsoft in Europe, be part of the negotiations. According to Neukom, Microsoft did not want to finish one battle in the United States, only to face another overseas.

Bingaman and the European Commission agreed to negotiate jointly with Microsoft in Brussels.

Bingaman had a vacation coming up, the week of July 4, which she traditionally spent in Silver City, N.M, the hometown of her husband, Sen. Jeff Bingaman (D-N.M). But this year, she would miss it. She told only a handful of key staff members she and a team were heading across the Atlantic.

For a week, nine people -- three each from the Justice Department, Microsoft and the commission -- spent hours at a time discussing licensing minutia in

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conference rooms at the commission's headquarters in Brussels. "I'd say the discussions were very civilized," said Neukom, who headed the Microsoft team. "There was a lot of information to be exchanged."

For a week the negotiators met several times a day, often picking up again late in the evening so they could cover new information or terms that had been faxed from Microsoft headquarters in Redmond, Wash., which was nine hours behind Brussels. By Friday, they had reached an impasse -- the Americans flew home. In interviews, neither side would say what had caused the breakdown.

They had agreed to a telephone conference on July 11, but Bingaman was not betting on a happy ending. "I had to play out the hand," she said. "I figured, if it works, great; and if not, we gave it our best try."

In the conference call, the parties agreed to return to the bargaining table. This time the date was set by the Europeans, who could not arrive in the United States until late the next day. They agreed to convene again last Thursday morning. Although the European delegation was down to two, a few more Justice Department lawyers had joined the talks.

Bingaman had not officially threatened a suit, she said, but she was ready to file. On Thursday a Justice Department attorney had flown to a district where Bingaman wanted to file, a place, she later said, "where the dockets are thin ..." If the negotiations fell irreparably apart, all Bingaman needed was a final okay from her boss, Reno.

Neukom was uncertain if Bingaman would take Microsoft to court. "People negotiate in lots of different ways," he said. "But we were confident of our position and felt the courts would agree with us."

By about 4 a.m. Friday the talks had stalled. Bingaman suggested that a call to Gates to try to resolve some of the disputed terms. The conversation was brief -- and futile. The lawyers quit the offices, convinced that their differences were widespread.

Yet one more phone call from the Justice Department to the Microsoft people drew the negotiators back to the table later on Friday. By early afternoon, with only a few points unresolved, Bingaman again asked to speak to Gates. "He's the ultimate decision maker," she said. "I just wanted to get this settled with him."

For the next hour or so, Gates talked via speakerphone with Bingaman and a small team of Justice lawyers, along with representatives from the European Community and Microsoft. They gathered near the speakerphone in Bingaman's office, occasionally leaving in small groups to debate a point in private.

"I sat on the phone for a long time," Gates recalled. "People seemed to be coming in and out of the room" where Bingaman was talking.

Then came the breakthrough, according to Bingaman. "Bill finally said, 'I can live with this,' and I said the same thing." The representative from the European Commission also agreed.

"She asked me if Neukom had the authority to sign for me and I said, 'Yeah,'

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" Gates added.

The lawyers scrambled to turn dog-eared pages with scribbles in the margins into a single document. They finished the set for the European Commission first, so the representatives could make the last flight back to Brussels, which left at just before 8 p.m. Friday.

By 9:30 p.m. the signed settlement was filed in the U.S. District Court in the District of Columbia, which must now decide whether it will be implemented.

"I just went home," Bingaman said. "It was a weird feeling. Even after 4 o'clock [and the discussion with Gates] I wasn't clear it was going to happen."

Gates said: "It's over. I like to work on products. This could have been a distraction. We've settled it in a way that doesn't affect our business."

Gates pointed out that the company has seven divisions that work on a variety of products. "None of the people who run those divisions are going to change what they do or think or forecast. Nothing. There's one guy in charge of [hardware company] licenses. He'll read the agreement."

And when Microsoft signs future licensing agreements with hardware makers, Bingaman promised, "we'll be watching."

GRAPHIC: PHOTO, BILL GATES

LANGUAGE: ENGLISH

LOAD-DATE-MDC: July 18, 1994

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TAB 43

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE
IN OPPOSITION TO PROPOSED FINAL JUDGMENT
IN CIVIL ACTION NO. 94-1564 (SS)
SIGNED BY GARY REBACK

2ND STORY of Level 1 printed in FULL format.

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The Washington Post

November 8, 1994, Tuesday, Final Edition

SECTION: FINANCIAL; PAGE C1

LENGTH: 663 words

Exh. 43

94-15645

FILED

FEB 14 1995

Clerk, U.S. District Court
District of Columbia

HEADLINE: Microsoft's Plan To Buy Intuit Raises Concern; Trade Group Calls 2 Hearings To Get Industry Opinion on Deal

SERIES: Occasional

BYLINE: Elizabeth Corcoran, Washington Post Staff Writer

BODY:

The reach of software giant Microsoft Corp. has so vexed some in the computer industry that a major trade association is convening two meetings to talk about it.

Yesterday, the Arlington-based Information Technology Association of America (ITAA) said it was asking companies throughout the industry to voice their opinions on Microsoft's latest proposed conquest -- Intuit Inc., the leading maker of personal finance software. Microsoft announced on Oct. 13 that it planned to buy Intuit for stock worth $ 1.5 billion.

"This is a dramatic acquisition by a very elite and powerful company," said Bernard Goldstein, who will chair a special ITAA committee to solicit industry comments on the deal. "We want to understand why many firms in the information technology industry are agitated by this proposed transaction."

The ITAA, which represents 325 software and hardware companies, plans to turn over relevant comments to the Justice Department, which is reviewing whether the proposed deal might squash competition. The agency must give approval before the deal can be consummated.

To gather comments, the ITAA plans to host two industry hearings, one in Washington and another in San Francisco, in early December. The ITAA also will accept written comments submitted by Dec. 2.

In hopes of skirting criticism that the deal might inhibit competition, Microsoft plans to transfer its own personal finance software package, called Microsoft Money, to Novell Inc. of Provo, Utah. As payment, Novell would give Microsoft royalties on every copy of Money it sells for a fixed period.

Microsoft is clearly trading up. Intuit's software, called Quicken, is estimated to have 6 million customers while Microsoft Money has only about 700,000. Among other points, observers suggest that the Justice Department will weigh the market strength that Money would have in Novell's hands and whether it would continue to offer real competition to Quicken.

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Sources said that about 10 days ago, Justice Department representatives met with Microsoft to request additional details on the proposed deal. Once the department receives that information, law requires that it spend only a few weeks finishing its analysis.

In the course of its review, the Justice Department would be likely to interview industry representatives. But some industry players have suggested that few are willing to criticize the software giant publicly because so many must work with Microsoft to ensure that their software applications will run smoothly on top of Microsoft's DOS or Windows operating systems, software that is used in most personal computers.

By offering to accept written comments and promising to keep some names confidential, the ITAA hopes to loosen a few tongues. "I guess we'll find out how inhibiting a factor that [concern] is," said Jim Mann, who chairs the ITAA. If no one offers criticism of the Microsoft-Intuit deal, he suggested, "it would be responsible to conclude that would be due to business relationships with Microsoft. We know there's concern."

Other software associations have chosen not to get involved in the issue. But the ITAA has not shirked such issues in the past. The association offered comments during the government's investigation of the business practices of International Business Machines Corp. during the 1970s. Within the past year, the association also voiced concerns about whether IBM was still honoring the conditions of a consent decree it had signed with the government. Both IBM -- and Microsoft -- belong to the ITAA.

In July Microsoft tentatively settled another Justice Department inquiry by agreeing to end certain licensing practices that the Justice Department alleged were anti-competitive. Last week, the department released the public comments it had received on the proposed settlement, along with its response. The department received only five letters, including one arguing that the government should leave the company alone.

LANGUAGE: ENGLISH

LOAD-DATE-MDC: November 8, 1994

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TAB 44

TO

APPENDIX TO MEMORANDUM OF AMICI CURIAE IN OPPOSITION TO PROPOSED FINAL JUDGMENT IN CIVIL ACTION NO. 94-1564 (SS) SIGNED BY GARY REBACK

Virginia Routs Maryland, 46-21; Penn St. Holds On, 35-31—D1

Weather
Today: Mostly sunny, mild. High 66. Low 49. Wind southwest 5-10 mph.
Monday: Partly sunny, breezy, warm. High 70. Low 51. Wind 8-16 mph.
Yesterday: Temp. range 35-56.
Wind chill 25. Details on Page B2

The Washington Post

Sections
A National News, World News; B Metro, Obituaries; C Outlook, Editorials; D Sports; D24 Classified; E Travel; F Sunday Style; G Sunday Arts; H Business; K Employment
Insider: Book World, TV Week, Washington Post Magazine, Comics
Today's Contents: Page A2

117TH YEAR · No 343 · SUNDAY, NOVEMBER 13, 1994 · Prices May Vary in Areas Outside Metropolitan Washington (See Box on A11) · $1.50

Microsoft Heads Home

Software Giant Targets Huge Consumer Market With a Host of High-Tech Innovations

By Elizabeth Corcoran
Washington Post Staff Writer

REDMOND, Wash.

Behind tall, wooden doors, in a modest building on the grounds of software giant Microsoft Corp., visitors can take a peek at the company's vision of the future.

The doors swing open to a suite of subtly elegant rooms—a model home-of-the-future—dubbed "the Taj" by those at Microsoft. The Taj is filled with familiar icons of modern, upper-middle-class life: plush chairs in the living room, crayon drawings on the refrigerator, grungy sneakers kicked under a table.

Yet technology has seeped into every corner. In the living room, just to the left of the hearth, is a huge video screen. Another screen is above the kitchen counter. A children's corner has its own computer. The screen in the dining room glows with what could be modern art. The home office is ready for a video conference. Lights, temperature and music are controlled by an electronic central nervous system.

Microsoft—whose software runs in millions of offices—wants to come home. Not just to the homes of a few crazed tekkies, but to as many of the nation's 104 million homes as possible. It wants to offer us a rich choice of images and information that will fly across screens in every room. And it wants to build the invisible software web that will make such systems work.

See MICROSOFT, H6, Col. 1

MTC-00030631_0583

Microsoft Seeks to Pump Streams of Information Into Homes

MICROSOFT, From H1

Tomorrow in Las Vegas, at the industry's annual trade show known as Comdex, Microsoft will offer a glimpse of one part of this new consumer strategy—a future on-line service code-named "Marvel." As with existing on-line services such as America Online or CompuServe, Marvel customers will use their computers and modems to tap into a range of discussion groups, as well as products and services from Microsoft and others. But Microsoft promises its service will be a showstopper. To woo customers, Microsoft plans to include access to Marvel in every copy of its next operating system, Windows 95.

Gates's Vision

The new world according to Microsoft will be sketched tomorrow morning, when the company's chairman, Bill Gates, delivers a state-of-cyberspace keynote address at Comdex. He will describe life in a world where people work in "virtual offices," collaborating with colleagues around the world via portable computing and communications devices. They will use on-line services to get medical advice anywhere at anytime, tour the world's art galleries without leaving their sofas, and pay for goods and services with "electronic currency."

Yet when Gates describes the future, his images do not have the sci-fi fuzziness that eventually grounded that other high-flying visionary, former Apple Computer Inc. chairman John Sculley. The difference is that Gates's audience knows—sometimes from bitter experience—that he can turn it into a winning business plan.

"I'm taking a 10-year horizon, but everything will be within use [in] five years," Gates said in a telephone interview on Friday. "We want to be one of the companies that's going to make that happen."

Gates's hard-nosed pragmatism scares his competitors. They snipe that even though Microsoft now employs some of the country's brightest software engineers, its work lacks the originality and whimsy of Apple. Such comments irritate Gates. But he can take comfort in the belief that runs through the core of Microsoft: Business isn't about fomenting cultural revolutions. It's about selling products.

With the thoroughness of an engineering corps, Gates and his team of executives have mapped out a strategy that they hope will make Microsoft products as familiar to consumers as Ivory soap.

This is no tentative effort. Gates has said he is willing to invest more than a billion dollars over 10 years to develop consumer products. He has committed $100 million to an advertising campaign to bolster Microsoft's brand name so that consumers will remember its products. And Gates has just hired a chief operating officer—Richard J. Herbold, a former Procter & Gamble Co. senior vice president, who is credited with revising P&G's pricing strategy to keep it competitive.

Tapping the Market

For Microsoft, the consumer market is tantalizingly large. Microsoft is already the biggest computer software company in the world, with revenue of $4.6 billion in fiscal 1994. But that looks puny measured against such consumer products giants as Procter & Gamble, which had more than $30 billion in sales last year, or even video game maker Nintendo Co., whose estimated worldwide revenue will total about $9 billion this year.

To get into the consumer market, Microsoft is applying the lessons it learned in the computer software business. Gates got his start by honing the layer of software called the "operating system," which controls the basic functions of the machine and also shapes the look of the "applications," or programs such as spreadsheets and word processors, that run on top of it.

When International Business Machines Corp. decided to use Gates's disk operating system, or DOS, on its personal computers, his software became essential to millions of consumers. Over time, Microsoft tightened its hold on the market with the "Windows" operating system, which gave DOS a face that was easier to use.

Microsoft has used this base to vault into the lucrative business of building applications, such as Microsoft Word for word processing and Excel for spreadsheets. These and other applications now generate a big share of the company's revenue.

Microsoft's market lead bothers others. "It's like a greyhound race, and the CEOs are all greyhounds," said Scott McNealy, chairman of Sun Microsystems Inc., in Mountain View, Calif. "This guy [Gates] caught the bunny. He's driving the damn bunny cart. . . . No one's supposed to be driving that cart."

Microsoft executives shrug off such criticisms. "There are competitors of ours who don't like us, who are envious of our success, said Nathan Myrhvold, a senior vice president. "And they've gone to great lengths trying to claim that our success is not due to something fair."

But, he said, "In every forum that's been raised, it's been formally decided that no, that isn't the case."

He pointed to the Justice Department's decision in July to close its investigation of Microsoft's business

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Microsoft Seeks to Pump Streams of Information Into Homes

activities after the company agreed to change a few specific practices.

No Slowing Down

Even the tussle with the Justice Department hasn't slowed Microsoft's plans for growth. "We said, a computer on every desk and in every home," Gates said. And indeed, the company seems poised to make that slogan a reality.

Michael Maples, executive vice president for products, reels off a strategy for the company's future. Continue the current businesses and grow two other divisions, namely, the "consumer" division (which is now churning out about one new CD-ROM title per week) and the "business systems division," which is building software for corporate computers. When those businesses are maturing four or five years from now, Maples predicted, Microsoft's investments in future consumer products will begin to "hit their stride."

The company's forthcoming on-line service, Marvel, will be a key part of the strategy. What will be different about Marvel? "We think you have to create an economic model where it's worth creating content," Gates said.

To do so, Microsoft plans to offer content providers, such as newspapers, the tools to build attractive displays for their on-line products and then, effectively price their wares as they please. Subscribing to Marvel

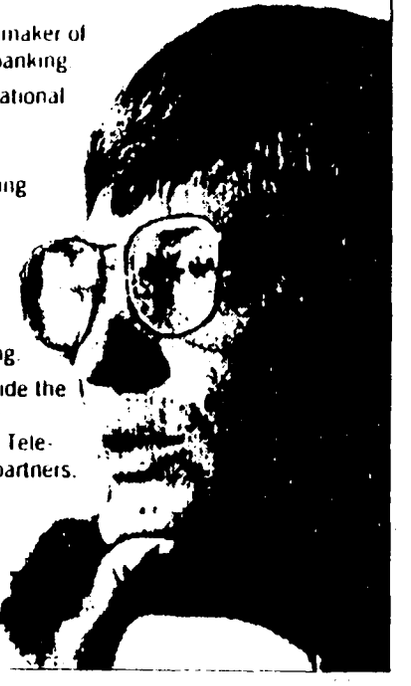
MICROSOFT'S WORLD

The software giant is developing a wide range of consumer products and services with many partners. Among the initiatives:

- **ON-LINE SERVICE:** Code-named "Marvel," details of Microsoft's plan to take on Prodigy, CompuServe and America Online are to be announced tomorrow. Four telecommunications companies are expected to be partners, along with "content providers" such as newspaper publishers.
- **FINANCIAL SERVICES:** Proposed acquisition of Intuit Inc., maker of Quicken personal finance software, would enable on-line banking
- **CREDIT CARD SERVICES:** Deal announced with Visa International seeks to refine the technology for ensuring the privacy of financial information transmitted over networks.
- **BOOKS ON-LINE:** Microsoft's consumer division is generating about one new CD-ROM book per week. Half of these are done with partners. Many are aimed at children, such as "Fine Artist" and "Creative Writer." Plans are in the works to put some of these on-line.
- **BROADBAND SERVICES:** To create the technologies for "broadband" interactive television and computer networking.

Microsoft would write the software. Partners would provide the computer hardware for sending the information, consumer devices for receiving it and skills to make it work together. Tele-Communications Inc. and General Instruments are major partners.

- **UTILITY SERVICES:** Plans to develop technologies, with partners such as Pacific Gas & Electric, that would respond automatically to consumers' energy and other needs.



Microsoft Chairman Bill Gates

FILED
FEB 14 1995
Clerk, U.S. District Court
District of Columbia

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Microsoft Seeks to Pump Streams of Information Into Homes

may cost as little as $5 a month. Phone charges may also be low, as four telecommunications companies are expected to say on Monday that they are working with Microsoft to make dialing into Marvel a local call for many subscribers.

When subscribers peruse on-line magazines, they will be charged by those journals. Like the owner of a mall, Microsoft will exact a percentage from what content providers earn via the network. Microsoft is not yet saying who those content providers might be.

The company also has a potent plan for spreading Marvel. "We'll give you access to it with Windows 95," Gates said. "If [the software] notices you have a modem, it will ask you if you want to register electronically."

Rick Sherlund, an analyst at Goldman Sachs & Co. in New York, estimates that as many as 14 million people may upgrade their software to Windows 95 in the first year it ships them. In contrast, America Online Inc. was boasting last month that it had 1.25 million subscribers. Even if Microsoft includes other on-line services in Windows 95, the Microsoft brand name could lure customers to Marvel.

A Wary Word

Steve Case, president of America Online in Vienna, is wary of Gates's plans. Computer operating systems are becoming the "dial tone of the computer age," he said. Just as the government regulates telecommunications, he suggested, the country may need new policies to ensure that consumers can easily reach any company's products or services through the dominant operating system.

"Ultimately, customers will prefer broad range of content, with an engaging presentation and offered at an affordable price," Case said. "There's not yet evidence that Microsoft will offer consumers something that they'll want," he added.

Meanwhile, Microsoft is fitting other elements of its on-line strategy into place. Last week, Microsoft and Visa International said they were working on ways to protect on-line information, such as credit card numbers. That security will prove handy as people begin to use Marvel to buy products on-line.

Microsoft has other plans for helping people check their bank accounts or pay bills remotely. In mid-October, Microsoft made a bid to buy Intuit Inc., the biggest maker of personal finance software, for $1.5 billion in stock. Microsoft's homegrown package, called Microsoft Money, has only won about 700,000 users since it went on sale three years ago. About 6 million people use Intuit's Quicken.

" 'Money' is really quite a good product," Maples said. But he explained that Quicken's broader customer base would accelerate Microsoft's entry into electronic commerce. One hurdle Microsoft must clear, though, is a Justice Department investigation into the possible anticompetitive effects of the merger.

Microsoft has other products it would like to see go live as well. Its 600-person consumer division, for example, hopes to deliver CD-ROMs via communications networks at some point. But to pump information-rich video into consumers' homes will take faster and more powerful networks than those Marvel will use.

Getting Organized

Microsoft is working to develop these superhighway-size, broad-band networks, through its Advanced Consumer Technology group, headed by Vice President Craig Mundie. By next June, the group will employ more than 500 people, working on the technologies that will turn Gates's Comdex address into reality: everything from interactive television and utilities that "know" when a house is too hot or cold, to personal gadgets such as a "wallet PC," which could automatically update a bank account, or show a video of the kids.

For two days in late October, Mundie's group convened about 65 companies from around the world for an information "summit." In effect, this was a meeting of construction crews. Behind closed doors, Microsoft executives laid out their plans for pumping streams of information into consumers' homes by way of their personal computers, in late 1996 or early 1997, and eventually through their television sets.

More than a dozen companies have pledged to work with Microsoft to develop—and commercialize—the technology. They include Alcatel Alsthom SA, Andersen Consulting, Deutsche Bundespost Telekom, General Instruments Corp., Hewlett-Packard Co., Nippon Telegraph & Telephone Corp. and US West Inc.

According to Mundie, the "rollout" of advanced networks will begin in the Seattle area late next year. By the end of 1996 or early 1997, Mundie hopes the technology will be ready to be "cloned" throughout the country. Ultimately, if consumers like what they see, every room in a home could have a connection to the information highway, much like Microsoft's Taj, he believes.

"Our view is that in the long run this is a very risky but potentially very rewarding business activity," Myrhvold said. He recalls that it took about five years before Microsoft's current operating system, Windows, became a hit.

"I assert it was a good idea to have done Windows," he said. "Today, that is a no-brainer."

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EXHIBIT 5
TO THE COMMENTS
OF RELPROMAX ANTITRUST INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA Plaintiff, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1232 (CKK)
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Pre-hearing Conference

DECLARATION OF BRIAN DAUTCH

1. My name is Brian Dautch. I am a law clerk for Peter Peckarsky, Esq. I have personal knowledge of the facts testified to below and if called as a witness could testify to those facts. I am over the age of twenty-one (21) years old.

2. On January 25, 2002, I placed a telephone call to 800-915-3355 to contact the Dell Computer Corporation ("Dell"). I spoke with Ray at extension 61468. Ray refused to state his last name. I asked what the price was for a Dell Dimension Model 8200 desktop personal computer. Ray said the price was $1,577. I asked what operating system was on the machine

at that price. Ray said the operating systems was a Microsoft Windows XP operating system and advised that I could have the Home or Professional versions of the operating system. I asked whether I could buy the same desktop computer from Dell with any other operating system. Ray said that Dell would sell its desktop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional). Ray said that Dell would not sell a desktop personal computer without an operating system. If Dell were willing to sell me a desktop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the Dell desktop personal computer.

3. On January 27, 2002, I placed a telephone call to 800-915-3355 to contact Dell again. I spoke with Jack at extension 58680. Jack refused to state his last name. I asked what the price was for a Dell Inspiron Model 8100 laptop personal computer. Jack said the price was $1,379. I asked what operating system was on the machine at that price. Jack said the operating system would be my choice of either a Microsoft Windows XP operating system (Home or Professional version) or a Microsoft Windows 2000 operating system . I asked whether I could buy the same laptop computer hardware from Dell with any other operating systems. Jack said that Dell would sell its laptop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional) or Windows 2000. Jack said that Dell would not sell a laptop personal computer without an operating system. If Dell were willing to sell me a laptop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the Dell laptop personal computer.

4. On January 25, 2002, I placed a telephone call to 800-888-0220 to contact the

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Compaq Computer Corporation ("Compaq"). I spoke with Bob at extension 21679. Bob refused to state his last name. I asked what the price was for a Compaq Presario Model 8000 desktop personal computer. Bob said the price was $1,510. I asked what operating system was on the machine at that price. Bob said the operating systems was a Microsoft Windows XP operating system and advised that I could have the Home or Professional versions of the operating system. I asked whether I could buy the same desktop computer from Compaq with any other operating system. Bob said that Compaq would sell its desktop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional). Bob said that Compaq would not sell a desktop personal computer without an operating system. If Compaq were willing to sell me a desktop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the Compaq desktop personal computer.

5. On January 27, 2002, I placed a telephone call to 800-888-0220 to contact Compaq again. I spoke with Tim at extension 5249. Tim refused to state his last name. I asked what the price was for a Compaq Presario Model 2700 laptop personal computer. Tim said the price was $1,299. I asked what operating system was on the machine at that price. Tim said the operating system would be my choice of either a Microsoft Windows XP operating system (Home or Professional version) or a Microsoft Windows 2000 operating system . I asked whether I could buy the same laptop computer hardware from Compaq with any other operating systems. Tim said that Compaq would sell its laptop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional) or Windows 2000. Tim said that Compaq would not sell a laptop personal computer without

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an operating system. If Compaq were willing to sell me a laptop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the Compaq laptop personal computer.

6. On January 25, 2002, I placed a telephone call to 888-999-4747 to contact the Hewlett-Packard Company ("HP"). I spoke with Ann at extension 3721. Ann refused to state her last name. I asked what the price was for an HP Pavilion Model 7966 desktop personal computer. Ann said the price was $1,999.99. I asked what operating system was on the machine at that price. Ann said the operating systems was a Microsoft Windows XP operating system and advised that I could have the Home or Professional versions of the operating system. I asked whether I could buy the same computer hardware from HP with any other operating system. Ann said that HP would sell its desktop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional). Ann said that Dell would not sell a desktop personal computer without an operating system. If HP were willing to sell me a desktop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the HP desktop personal computer.

7. On January 27, 2002, I placed a telephone call to 888-999-4747 to contact HP again. I spoke with Jackie at extension 3707. Jackie refused to state her last name. I asked what the price was for an HP Pavilion Notebook Model N5310 laptop personal computer. Jackie said the price was $1,349. I asked what operating system was on the machine at that price. Jackie said the operating systems was a Microsoft Windows XP operating system (either Home or Professional version or Microsoft Windows Millenium or Microsoft Windows 2000 or Microsoft Windows 98. I asked whether I could buy the same computer hardware from HP

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with any other operating system. Jackie said that HP would sell its desktop personal computers only with a version of the Microsoft Windows XP o r Microsoft Windows Millenium or Microsoft Windows 2000 or Microsoft Windows 98 operating system s. Jackie said that HP would not sell a laptop personal computer without an operating system. If HP were willing to sell me a laptop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the HP laptop personal computer.

8. On January 25, 2002, I placed a telephone call to 888-746-7426 to contact International Business Machine ("IBM"). I spoke with Andy at extension 37229. Andy refused to state his last name. I asked what the price was for an IBM Model M67922EU desktop personal computer. Andy said the price was $1,289. I asked what operating system was on the machine at that price. Andy said the operating systems was a Microsoft Windows XP operating system and advised that I could have the Home or Professional versions of the operating system. I asked whether I could buy the same computer hardware from IBM with any other operating system. Andy said that IBM would sell its desktop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional). Andy said that IBM would not sell a desktop personal computer without an operating system. If IBM were willing to sell me a desktop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the IBM desktop personal computer.

9. On January 27, 2002, I placed a telephone call to 888-746-7426 to contact International Business Machine ("IBM"). I spoke with Jim at extension 37289. Jim refused to state his last name. I asked what the price was for an IBM Thinkpad Model 265620U

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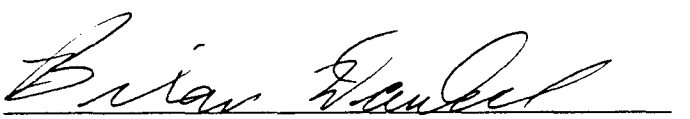
laptop personal computer. Jim said the price was $1,099. I asked what operating system was on the machine at that price. Jim said the operating system was a Microsoft Windows XP operating system (Home or Professional versions) or Windows 2000. I asked whether I could buy the same laptop computer from IBM with any other operating system. Jim said that IBM would sell its laptop personal computers only with a version of the Microsoft Windows XP operating system (Home or Professional) or Windows 2000 operating system. Jim said that IBM would not sell a laptop personal computer without an operating system. If IBM were willing to sell me a laptop personal computer without an operating system I would be able to endeavor to arrange to use an operating system made by a software vendor other than Microsoft on the IBM laptop personal computer.

I declare under penalty of perjury that the foregoing is true and correct, executed in Washington, D.C., on January 27, 2002.



Brian Dautch

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EXHIBIT 6

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (TPJ)
STATE OF NEW YORK, ex rel. Attorney General ELIOT SPITZER, et al., Plaintiffs and Counterclaim-Defendants, v. MICROSOFT CORPORATION, Defendant and Counterclaim-Plaintiff.	

Declaration of Paul M. Romer

I, Paul Michael Romer, declare as follows:

I. Qualifications and Scope of Testimony

1. I am the STANCO 25 Professor of Economics at the Graduate School of Business, the Dean Witter Senior Research Fellow at the Hoover Institution, and the Ralph Landau Fellow in the Stanford Institute for Economic Policy Research, all at Stanford University. I have also held the position of Assistant Professor in the Economics Department at the University of Rochester and Professor in the Economics Departments of the University of Chicago and the University of California at Berkeley. I received my B.S. degree in Physics in 1977 and my Ph.D. degree in Economics in 1983, both from the University of Chicago. I am a Fellow of the Econometric Society, a Research Associate at the National Bureau of Economic Research and a former member of the Executive Committee of the American Economics Association.

2. My 1983 Ph.D. thesis and my subsequent papers revitalized the study of economic growth and were the foundation for a body of work known as "new growth theory." My contribution was to formalize a theory in which the rate of technological change is determined by incentives created in the marketplace. This kind of theory lets one trace the effects that social institutions in general, and legal institutions in particular, have on incentives, and thereby on the rate of technological change. Over time, small changes in this rate cumulate into large differences in standards of living. As a result, decisions about the law, and especially about antitrust law as it applies to high technology industries, can be among the most important economic policy decisions that a society makes.

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3. The Court's decision in this case will profoundly affect the information industry, the most technologically dynamic sector in our economy. Because technological change has been the central concern in my work, the Department of Justice has asked me to evaluate the economic effects of its proposed remedy.

II. Summary of the Analysis

4. In its Findings of Fact, the Court found that Microsoft has a monopoly in the market for PC operating systems that is protected by the applications barrier to entry. By exposing to applications developers APIs which were independent of the Windows operating system and thereby eroding the applications barrier to entry, Netscape's browser and Sun's implementation of Java posed a direct threat to this monopoly. In response to this threat, Microsoft engaged in a series of anticompetitive acts designed to stifle the technological progress and market success of Netscape and Sun. These acts directly harmed consumers by, among other things, denying them the choice of a browserless operating system, foreclosing opportunities by OEMs to make PCs more user friendly, making it more difficult for consumers to obtain competing browsers, and by preventing some software innovations (Intel's platform-level NSP software) from reaching the market. FOF 410.

5. Most importantly, these acts have interfered with the process of innovation in three distinct ways. First, consumers did not get the innovative products that the technology being developed by Netscape and Sun might have delivered. Second, Microsoft's predatory acts had a chilling effect on innovative efforts by all people who might have developed other software technologies that Microsoft found threatening.

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Third, Microsoft harmed the innovative process because it limited competition, and competitive markets are, on balance, the best mechanism for guiding technology down a path that benefits consumers.

6. The government's proposed remedy will prevent these harms from recurring. The most important element of the remedy is a reorganization that creates independent applications and operating systems companies. It will deprive the operating systems company of some of the tools that Microsoft used to limit competition. It will also create an applications company with the incentive and the ability to lower the applications barrier to entry in the operating system market. The applications company can do this by porting its key applications to competing operating systems and by providing new middleware that other applications developers can use. This could further increase the number of applications available on the competing operating systems and thereby lower the applications barrier to entry. By lowering the barriers to entry, the creation of a separate applications company increases the likelihood of entry in the PC operating system market. Even if actual competition in the market for PC operating systems does not emerge, the increased potential for entry will limit the strategic options available to the operating system monopolist. Furthermore, the presence of this powerful applications company will lead to larger expected payoffs for other innovators in the software industry by providing two independent distribution channels. The presence of these two independent distribution channels will also increase the likelihood that users can choose among alternative technologies on the merits. For all these reasons, a reorganization that introduces a significant competitor will dramatically reduce the likelihood that the harmful acts identified in this case will recur.

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7. This reorganization returns the software industry part way toward the competitive environment that prevailed before Microsoft took its illegal actions. There is no way to revive the threat posed by the specific technologies that Netscape and Sun were developing, nor to recover the innovative efforts that were deterred by Microsoft over the last five years. The market has moved on. Consumers and applications developers have made investment decisions that are irreversible. This remedy does, however, return us to a point where an important software firm outside of the control of the operating system monopolist has an incentive to lower the applications barrier to entry and to develop new middleware technologies with cross-platform capabilities. This was the state of the software industry in the mid 1990s with the entry and early successes of Netscape.

8. In support of the basic strategy of creating independent companies, the remedy prohibits specific acts that could frustrate the creation of the separate companies or undermine their independence. It also prohibits acts that Microsoft has used and that the new operating systems company could use to exclude potential competitors. Until the reorganization is completed and the applications company has had a chance to change the structure of the operating systems market, the operating systems monopoly will persist. The company that controls this monopoly could limit the access to final users by the new applications company or any other software developer. These prohibitions apply only for a limited period of time. Ultimately, the remedy relies on the market forces created by the reorganization to curb anticompetitive behavior.

9. When I evaluate the potential costs and benefits of this remedy, my overriding concern is the effect that it will have on the rate of innovation. Information processing is a pervasive activity in our economy. Even small changes in the rate of innovation in this

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area can, over time, lead to large productivity gains and big improvements in the standard of living. Because of the rapid progress in microprocessors, memory chips, data storage systems, and communications networks, the hardware infrastructure for information processing is vastly more powerful than it was just ten years ago. It takes innovative software products like the browser to harness this power and put it to use throughout the economy. By creating conditions that encourage increased competition in the operating system market, this remedy will increase the rate of innovation in the software industry and thereby increase the rate of growth for the economy as a whole. The lasting stream of benefits that can be expected to follow from this remedy will substantially outweigh any temporary costs that it might involve.

10. My detailed analysis of the remedy is divided into four sections. The next section, Section III, expands on the harm to innovation caused by Microsoft's actions. Section IV looks in detail at the effects that the reorganization will have on the incentives and behavior of the successor companies and on competing firms. Section V shows how the conduct provisions of this remedy support the independence of the two successor companies and prevent specific anticompetitive acts identified in this case from recurring. Section VI examines the benefits and costs of the remedy both for society as a whole and for Microsoft's shareholders. Section VII presents my conclusion.

III. How Microsoft Has Undermined Innovation

11. The Court identified a reduction in the rate of innovation as the most serious harm that flowed from Microsoft's illegal acts. FOF 411-412. This reduction can take several forms. The first type of harm arises because consumers were deprived of new types of

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software or received them only with a lag. Innovative efforts at Netscape and Sun were directly impeded by Microsoft's actions. As a result, applications developers who could have written programs that were complements with the Netscape browser or Java also faced substantially reduced incentives to do so. It is impossible to know with certainty the types of applications that might have developed had innovation continued with full force on both fronts. We do know, however, that some types of applications forecast by the advocates of the browser and the Java virtual machine are finally emerging. For example, companies are only now bringing to market server-based applications accessed via a browser that substitute for traditional desktop productivity applications. In the absence of Microsoft's actions, it is likely that this class of applications would be farther down its development path.

12. The second type of harm springs from the message Microsoft sent to developers of potentially competitive software. In the browser wars, Microsoft showed that it had the power to reduce the return Netscape and Sun earned on their investments in innovative technologies and that it was willing to use this power. This reduces the expected profits that outside innovators can expect to earn from developing technologies that threaten to create additional competition for Microsoft's operating system monopoly.

13. Historically, people working outside of the dominant firms in the software industry have been responsible for the development and commercialization of many of its most important innovations. Notable examples include email, the electronic spreadsheet, the word processor, the window based-graphical user interface, the web browser, user friendly handwriting recognition on a handheld device, and instant messaging. This pattern is not unique to software. In many industries, new entrants are a critical source for

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the innovations that take technology in fundamentally new directions. Although they may not innovate themselves, dominant firms sometimes learn how to exploit the new innovations that do arise.[1] Because outsiders are such an important source of innovative energy, Microsoft's threatening message reduced the rate of innovation in the software industry as a whole.

14. The third and final type of harm is the most familiar and fundamental. Microsoft has harmed the innovative process because it has limited competition, and competitive markets are, on balance, the best mechanism for guiding technology down a path that benefits consumers. No system of comprehensive central planning, neither one controlled by a government, nor one controlled by the managers of a single firm, can hope to be as robust and reliable a mechanism as competition among many actual and potential firms for purchases by final users. Before the breakup of AT&T, engineers described the advantages of having a single firm that produced all the telephone desksets that connected to the telephone network. Since the breakup, consumers have benefited from the wider range of choice and more rapid innovation in the handsets that competition made possible.

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[1] According to one Microsoft insider, this has been the pattern at the company: "and let's face facts. innovation has never been microsoft's strong suite. we're much better at ripping off our competitors. For example, we did not invent either ASP [active server pages] or IE, we bought them!" RX8

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IV. Analysis of the Reorganization

A. General Characteristics of the Proposed Reorganization

15. The proposed remedy creates two companies that sell different types of software (operating systems and applications) with minimal overlap in the product lines that each company would offer immediately after the reorganization takes effect. Over time, however, each company would be free to develop any new type of software product, including the types of software products supplied by the other company.

16. The internet browser is the most important product in the initial overlap in the product lines. To handle this case, the government's proposal gives the applications company the intellectual property associated with Internet Explorer and the developers who worked on it. However, because Microsoft has placed code that supports browsing in operating system files that contain code that supports non-browsing features of the operating system, the operating system company will receive a license to use and distribute the parts of the code for Internet Explorer that are shipped with the Windows operating system product. FOF 164.

17. The reorganization creates two powerful software companies with roughly similar strategic assets. They will each have annual revenue of more than $8 billion and annual profits of more than $3 billion.[2] This is much larger than the revenues and profits for

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[2] To be specific, according to Microsoft's 1999 10K filing, the Windows Platforms division, which corresponds roughly to the proposed operating systems company, had revenue of $8.5 billion. The Productivity Applications and Developer division and the Consumer, Commerce and Other division together had revenue of $11.2 billion. Total profit for the entire company was $7.8 billion. Microsoft does not publish profit figures by division, but as a very rough guide, we can assume that profits are proportional to revenue. This would imply profits of $3.4 billion for the Windows Platforms division and $4.4 billion for the remaining units.

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other companies that specialize in selling software for the PC. For comparison, Novell, Adobe, Intuit, Symantec, Rational Software, Corel, and Macromedia together had total revenue of $3.8 billion and total profit of $0.9 billion in the most recent year. As the Court has found, the Windows operating system has a market share that has been increasing over time and that has reached the level of 95% in recent years. FOF 35. They also have a comparable presence among users. According to one market analyst, Microsoft's Office suite captures 95% of the revenue in the office productivity suite business. RX37. Microsoft's CEO Steve Ballmer recently claimed that about 80% of all the electronic information in most companies is stored in Microsoft Office documents. RX14.

18. After the reorganization is fully implemented, the operating systems company will control the Windows user interface. The applications company would control the user interfaces presented by the Office applications. Hence, each company has a powerful means of presenting final users with choices about new software products. For example, if they were promoting alternative browsers, the operating system company could put an icon that starts its browser on the desktop. The applications company could put a choice on its View menu that lets a user view a document using its browser.

19. Each company will have products that present applications programming interfaces that can be used by ISVs. The operating systems company can continue to offer all of the APIs presented by its desktop and server operating systems. On the desktop, the applications company will control the APIs supported by Internet Explorer and by Office. These APIs are already widely used. Declaration of E. Felten, ¶ 36. For example, Microsoft claims that there are 2.5 million developers who use Office as a

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platform for building applications. RX38. On the server, the programs controlled by the applications company expose APIs and communications interfaces that let them be linked together as building blocks in large server side applications. For example, a corporate developer building an e-commerce application can have the application company's web server application, IIS, capture data from a customer and then transfer it to its database application, SQL Server.

B. The Emergence of Competition in the Operating System Market

20. By freeing the applications company, this remedy will reduce the barrier to entry faced by a new operating system company. As separate entities, the applications and operating systems companies will each have an incentive to compete with the other, or at least to encourage other firms to do so. The applications company will perceive both the opportunity to take revenue away from the operating system company and the threat that the operating system company will take revenue away from it. This opportunity and threat will create incentives for the applications company to write versions of its applications that run on other operating systems. By itself, this will lower the applications barrier to entry protecting the Windows operating system. The opportunity and the threat will also create incentives for the applications company to develop its products into full-featured, cross-platform middleware products that other applications developers can use to develop programs that run on multiple operating systems. This will further reduce the barrier to entry.

21. This reorganization places the operating system monopolist in a competitive situation comparable to that which prevailed in the mid 1990s. At that time, Netscape had

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access to a large fraction of desktops and had an incentive to develop its browser into a critical piece of middleware on the PC. The reorganization recreates this situation with the applications company in the role played by Netscape.

22. To see why incentives drive these two companies toward this outcome, even though they start from positions where they are not direct competitors, it is useful to look in more detail at the threats and opportunities that each company will perceive when they are separate.

23. The best outcome for the operating systems company would be one in which it maintains a dominant position in the operating systems market and also captures some (or all) of the profits from the sales of applications. If the operating systems company cannot achieve this goal, the next best outcome would be to retain its dominance of the operating systems market and to induce enough competition in the Windows applications business to increase innovation in applications. This will increase demand for the operating system because, as the Court found, applications are critical complements to the operating system. FOF 37. To complete this three-way classification, the worst possible outcome for the operating systems company would be one in which it faces direct competition from companies offering alternative operating systems and in which the applications company maintains a dominant position as an applications vendor for the various operating system platforms.

24. The ranking of outcomes for the applications company is exactly the reverse. It understands that the operating system company has an interest in driving down prices for Windows applications and trying to capture some of the revenue from the applications

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business. The applications company will therefore recognize that it would be a risky strategy for it to continue to write applications only for the Windows operating system.

25. One of the key advantages protecting the application company's $10 or $11 billion stream of revenue are the switching costs that users would face if they tried to adopt a competing set of applications. These users would have to learn the new interfaces presented by any new applications. They would also have to convert the large amounts of data that are stored on desktops and on servers in Microsoft Office file formats. See Declaration of E. von Simson, ¶ 4a. Right now, any user who wanted to switch operating systems would have to incur the large costs of switching applications. If, however, the new operating system runs the applications that the user currently uses, the costs of switching to the new operating system will be relatively low compared to the costs of switching applications. Hence, the applications company will have an incentive to write versions of its applications that run on an alternative operating system. It will also want the providers of complementary applications to support the alternative operating system. To reduce the porting costs for ISVs, the applications company will have an incentive to develop its applications into middleware that ISVs can use and to sell tools that programmers can use to write cross-platform software.

26. The applications company's defensive strategy of porting its applications and developing them into full-featured middleware products can be converted into an offensive strategy that takes revenue from the Windows operating system company. Just as the operating systems company can gain by encouraging innovation in applications, the applications company can gain by encouraging innovation in a critical complement

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that it does not own, the operating system. It can do this by offering its own operating system or by supporting an open source operating system such as Linux.

27. Among all existing or potential applications vendors, the newly created applications company would be uniquely positioned to implement the kind of strategy outlined above. From a defensive point of view, it has a much stronger incentive to take acts that protect its current revenue stream. In principle, the newly created applications company should be willing to spend up to the present discounted value of this stream, a sum that could be worth anywhere from $40 to $100 billion dollars, if doing so would successfully protect this income stream from attack. In addition, the existing applications already possess much of the functionality that would be required for these applications to serve as middleware that offers a complete set of APIs to developers. No other applications vendor has such a powerful combination of assets – an incentive to protect its existing revenue stream, wide availability on user desktops, and existing middleware functionality – for bringing competition to PC software.

C. Advantages of a Second Company Even in the Absence of Operating System Competition

28. Even if the inherent rivalry between the operating systems company and the applications company does not lead to actual competition in the operating system market, the threat that each company poses to the other will profoundly change the dynamics in the software industry. To illustrate this point, it is useful to consider how events might have turned out if the separation into an operating system company and an applications company had taken place just before Netscape commercialized the web browser. Imagine

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that neither company had yet taken any steps to threaten the other. In particular, the applications company had not yet written versions of its products for other operating systems; the applications barrier to entry into the operating system market had not been reduced; no competition in this market had materialized.

29. Imagine that in this hypothetical scenario, Netscape is initially able to distribute its browser freely and achieves wide market penetration. Then, both the operating system and the applications company perceive the threat presented by the Internet and the browser. The key difference in this scenario is that this new threat is superimposed on top of the underlying threats and opportunities that the applications and the operating system companies present to each other.

30. In this situation, it is likely that one company would work with the new entrant in an attempt to gain an advantage over the other. Either company could consider forming an alliance with Netscape, giving it an important distribution channel that reaches many final users. This strategy might be well worth adopting if it increased the likelihood that one incumbent would be able to displace the other. The applications company could use the Netscape browser as part of its strategy for developing full-featured cross platform middleware.[3] The operating system company could use the Netscape browser as a way to

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[3] There is evidence that Office developers were required to support IE preferentially over competing browsers. In a January 1997 email, Bill Gates made clear his priorities: "In one piece of email people were suggesting that Office had to work equally well with all browsers and that we shouldn't force Office users to use our browser. This is wrong and I wanted to correct this." GX351 Later, in July 1997, Paul Maritz noted in an email to Gates and other executives that the Office group (consistent with Gates' comment in January 1997) was going to target certain features of Office for IE, but "this was hard decision for them (based on IE's current market share)." GX514.

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move quickly to a position where it is the dominant vendor of a new type of applications suite that relies on more server-side computing or a user interface based on the browser.

31. Looking ahead from today, rivalry between the two companies will be particularly important when transforming new technologies like the browser arise. In coming years, portable devices, wireless communications and voice recognition may obsolete many deeply embedded assumptions about when, where, and how users access digital information. At the same time, improvements in the bandwidth of fiber optic data communications networks and the extension of these networks ever closer to the desktop may narrow the gap between the capacity of the pipe that connects two different computers and the pipe that connects components located inside the case of a single computer. Either one of these developments, and especially the two of them together, could lay the foundation for new software innovations as powerful as the browser and the Web.

32. Take for example, the Palm operating system, the first operating system that could recognize handwriting and run for an acceptable period of time on a small battery powered handheld device that fit comfortably in a shirt pocket. This new product, which was not developed by any of the leading players in the computer industry, has already brought very significant benefits to consumers. As it evolves wireless links with the Internet and tighter links with mobile phones, an entirely new window of opportunity opens up. As voice recognition software becomes more powerful, the window opens up into an entirely new world of unexplored possibilities.

33. As an integrated company that controls both the Windows operating system and the Office productivity suite, Microsoft has a powerful set of tools that it is using to

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influence the path of competition in this new space. It is developing a substitute operating system, Windows CE, that competes with the Palm operating system. It has further indicated a willingness to change the details of its Office applications to favor devices that run Windows operating systems, even if doing so disadvantages its customers who now rely on the Palm Pilot. "

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" RX1 (Bill Gates to senior Microsoft executives, July 11, 1999).

34. If the companies were separate, the applications company would try to meet consumer demand rather than support the strategic goals of the operating system company. It might form an alliance with providers of handheld computing devices rather than aid the operating systems company in its effort to handicap and defeat them. For example, it could develop a client application that runs on the Palm Pilot and that communicates efficiently with Exchange, the server program that stores email, calendaring, and task scheduling information. Because of the popularity of the Palm handheld, these features would further solidify the position of Office and Exchange. Doing so would also offer larger potential rewards to the developers of the Palm platform, and would thereby encourage other new entrants to strive to develop equally innovative new products.

35. The separation might also change the dynamics of the competition that is taking place in the server market. Right now, Microsoft is using security protocols that discourage the use of non-Microsoft servers in enterprises that install Windows 2000 on

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the desktop. See Declaration of R. Henderson, ¶ 49, 119-120; Declaration of E. Felten, ¶ 78-79. If the applications company is successful in creating a viable alternative on the desktop – a competing operating system, a version of Office that runs on it, and a complementary set of applications – these enterprises will have the choice of switching away from the Windows desktop operating system instead of switching to the Windows server operating system.

36. In fact, the discriminatory security features would increase the chances that the competing operating system succeeds. When the operating systems company makes Windows 2000 less attractive to enterprises with non-Microsoft server operating systems, it increases the demand for an alternative desktop operating system. The applications company would therefore see a larger payoff from porting its applications to the alternative. Other applications developers might then try to get an early seat on the new bandwagon. The resulting increase in available applications would further encourage the adoption of the new operating system.

37. Working back, we see that if a separate applications company existed, the operating system company might refrain from introducing these discriminatory security features in the first place. In a world where there is no separate applications company, the discrimination features increase sales of Windows server operating systems without decreasing sales of desktop operating systems. In a world with a separate applications company, this strategy could lead to significantly decreased sales of desktop systems.

38. This counterfactual scenario about the development of the browser and the forward looking hypothetical scenarios about handheld computing and security protocols between the desktop and the server suggest several general points. First, the separation of

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the applications and operating systems developers into different organizations could increase the rate of innovation that emerges from just these developers alone. The threat that the incumbents pose to the other could induce technological races that spur the rate of innovation achieved on both sides, just as the race with Netscape spurred innovation within Microsoft. FOF 135.

39. Second, the separation would also increase the expected returns to outside innovators. It would create two distinct paths or channels that a technologically successful new entrant could use to reach and maintain contact with final users. Competition between these two organizations would give a new entrant like Netscape or Palm much more bargaining power than it has when it faces a single, monolithic organization. By playing one of the incumbents against the other, the new entrant could therefore expect to extract a much higher return from its innovative effort and early market successes.

40. Finally, even an increased possibility of competition in the market for operating systems could deter an existing monopolist from engaging in some anticompetitive tactics. This benefit arises from the mere creation of the independent applications company. To the extent that the competition becomes real competition instead of potential competition, the monopolist will face even stronger incentives not to engage in socially harmful anticompetitive practices.

V. Effects of the Conduct Provisions

41. In addition to the reorganization, the proposed remedy puts in place a number of prohibitions directed at specific types of conduct. These prohibitions can be separated

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into two categories – provisions that support the reorganization and provisions that keep the company that controls the operating systems monopoly from engaging once again in the specific types of illegal behavior that Microsoft used before, and that the successor company might use again, to limit entry, restrict competition, depress the rate of innovation, and distort the operation of the market.

A. Provisions Designed to Make the Separation Effective

42. The proposed remedy includes several specific provisions that are designed either to maintain the feasibility of a separation or to ensure that this separation is a true separation into organizations with independent economic interests.

43. Because its most important assets are software and people, Microsoft could take steps that would frustrate the ability of the Court to implement a division of these assets. Microsoft has already demonstrated to the Court its willingness to impose technical linkages on its software code without technical justification in order to achieve certain strategic goals (e.g. binding the browser to the operating system). FOF 175-77. Between now and the time when the reorganization is implemented, Microsoft could use these kinds of tactics to present the court with a *fait accompli* that makes it technically impossible to separate existing applications from the operating system. Thus, Provision 1d of the proposed remedy requires Microsoft to maintain the separation between the operating system business and the applications business that exists on the date of entry of the Final Judgment. It further provides that Microsoft should take no action that makes the separation more difficult.

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44. Once the companies exist as legally separate entities, it is important that their managers operate them as economically independent entities. Trivially, this requires that one company be prohibited from buying the other (Provision 2b). The covered shareholder provision has the same intent. It ensures that a dominant shareholder cannot force the managers of one company to support the financial interests of the other (Provision 2a). For the two companies to be economically independent, they must not be able to enter into any legal agreement that would require or facilitate collusion between them. The proposed remedy therefore requires that the operating systems company and the applications company file any agreements between them with the Department of Justice (Provision 2c). It also specifically prohibits the two companies from entering into special agreements concerning distribution, discriminatory disclosure of technical information, or discriminatory terms for one to license the other's products (Provision 2b). The Court has found that Microsoft has used these specific acts to limit competition by other firms or to induce other firms to participate in its schemes to limit competition by other firms. FOF 79, 83-89, 95-103.

B. Provisions Designed to Prevent Continued Exploitation of Monopoly Power in the Market for Operating Systems

45. The reorganization that is proposed here will create conditions that make it possible for operating system competition to emerge, but it does not guarantee that this will happen. For some period of time that extends beyond the implementation of the reorganization, the operating systems company will continue to be a monopolist in the market for Intel-based desktop operating systems. The proposed remedy therefore

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includes specific provisions designed to prevent the operating systems company from engaging in the same anticompetitive acts that it used against Netscape's browser and the Java technology to undermine their competitive potential.

1. Provisions relating to OEMs

46. The Court found that Microsoft used its monopoly control of the operating system market to induce OEMs to participate in its attempts at limiting competition. Among the specific illegal measures taken by Microsoft were:

- making access to technical support or information about new programs contingent on an OEM's support in Microsoft's attempts at limiting competition (FOF 128-129);
- offering reductions in the royalty price for Windows 95 in exchange for this kind of support. (FOF 64, 139, 230-241);
- threatening withdrawal of its Windows license to OEMs if it failed to offer this kind of support. (FOF 203-208);
- refusing to allow OEMs to reconfigure the start-up sequence or the PC in ways that give competitors access to final users. (FOF 209-227);
- binding Internet Explorer to the operating system in order to make it impossible for an OEM that wanted to support a single browser to select a product other than IE. (FOF 175-77, 191, 192).

47. Because OEMs will be a critical distribution channel for the separate applications company in the early years of its existence, the operating systems company will be tempted to use the same kinds of tactics to limit potential competitors, the most important

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of which will be the newly formed applications company. If the operating systems company could succeed in these efforts, it would undermine the reorganization that is at the heart of this remedy.

48. For this reason, the remedy prohibits, for a limited period of time, specific types of conduct by Microsoft and the successor operating system company. All of these provisions are designed to protect the freedom of an OEM to choose the applications and middleware that it ships with a Windows operating system in response to consumer demand. The first provisions prohibit financial threats and inducements. Provision 3aii (Uniform Terms for Windows Operating System Products Licensed to Covered OEMs) keeps the operating systems company from using changes in the price for an operating system license as a means of punishing an OEM that distributes a product supplied by another firm or from rewarding the OEM for refraining from distributing such a product. Provision 3ai (Ban on Adverse Actions for Supporting Competing Products) keeps the operating systems company from using marketing programs or technical support to achieve the same end.

49. The next set of provisions frees OEMs to configure the PCs that they sell. Provision 3f (Ban on Contractual Tying) prevents the operating systems company from writing licenses for the operating system that require OEMs to distribute any other software products. Provision 3aiii (OEM Flexibility in Product Configuration) lets the OEMs undo choices about such things as the boot sequence, location of icons, and menu choices that the operating system company might use to force the OEM to feature, and therefore to support, applications or middleware supplied by the operating systems company. Provision 3g (Restriction on Binding Middleware Products to Operating

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Systems) requires that OEMs and end users have the ability to remove end user access to any middleware that the operating system company has included with its operating system software. Provision 3i (Continued Licensing of Predecessor Version) gives the OEMs an alternative way to configure its PCs. It lets them license older versions of the Windows operating system and add new features by adopting software from independent vendors.

2. Provision regarding other distribution partners

50. Microsoft also used its monopoly power to interfere with distribution channels other than OEMs. Among the actions taken by Microsoft were:

- giving valuable consideration (e.g. placement on the Windows desktop, free licenses to software for customizing IE) at no charge to Internet Access Providers (IAPs) who agreed to distribute and promote IE and restrict distribution and promotion of competing browsers (FOF 242-310);
- giving Windows promotion to Internet Content Providers (ICPs) such as Intuit who agreed to restrict distribution of Navigator and payments to Netscape (FOF 311-335);
- threatening to withhold MacOffice from Apple unless Apple distributed IE as the default browser on Macintosh PCs (FOF 341-356).

51. Provision 3e (Ban on Exclusive Dealing), which applies to any contracts with third parties, is intended to prohibit these and similar acts. In particular, it prohibits any agreement that limits the distribution of competing middleware or operating system products.

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3. Provisions regarding developers and competitors

52. The Court also found that Microsoft used its monopoly power to undermine competing middleware products such as Sun's Java technology and Intel's platform level NSP software. Actions taken against Java include efforts to create incompatibility between its implementation of the Java virtual machine and the Sun implementation (FOF 387-394), inducements to ISVs to refrain from using use or distributing non-Microsoft Java technologies (FOF 395-402), and impeding expansion of Java class libraries (FOF 404-406). Microsoft also threatened to withhold support for Intel's next generation of microprocessors unless Intel agreed to stop developing platform-level interfaces like NSP that might draw support away from interfaces exposed by Windows. FOF 94-103.

53. The Court's findings demonstrate how varied Microsoft's anticompetitive behavior has been in the past. Since the trial, new and unexpected acts such as the discriminatory security protocol built into Windows 2000 (described earlier in paragraph 35) have already come to light. This reaffirms how many possible anticompetitive tactics are available and how difficult it will be to anticipate the precise form of future tactics. Therefore, the proposed remedy includes two provisions that prohibit anticompetitive behavior in general terms. Provision 3f (Ban on Contractual Tying) lays down a blanket prohibition against contracts that are designed to limit competition. Provision 3c (Knowing Interference with Performance) prohibits actions that are designed to degrade the performance of competing middleware on the Windows platform.

54. The remedy also contains a provision that makes it possible for ISVs, OEMs, and independent hardware vendors (IHVs), to uncover and ameliorate a wide range of illegal

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acts. Provision 3(b) (Disclosure of APIs, Interfaces and Technical Information) requires that Microsoft disclose to these third parties all interfaces they need to make their products interoperate effectively with the Windows operating system.

55. Finally, if the operating system company could use these kinds of agreements with third parties to discriminate against hardware and software vendors who support the middleware strategy of the new applications company or any other middleware vendor, it could impede the development of operating system competition. Provision 3d (Developer Relations) prohibits them from doing so.

4. General comments

56. Under the proposed remedy, all of these conduct provisions apply only for a limited period of time. Specifically, they are in force until three years after the reorganization becomes effective, roughly the time it would take for one of the successor companies to complete one product cycle. This limitation is appropriate because the most reliable and most effective mechanism for preventing anticompetitive acts is market competition that erodes, or at least threatens to erode, the monopoly power that lies at the heart of the problems identified in this case. The conduct provisions support the reorganization in its vulnerable early years of life. They raise the probability that the reorganization will introduce competition into the market for operating systems. This means that the conduct provisions will have a social value that is much higher if they are used in combination with the reorganization than if they are used alone.

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VI. Costs and Benefits of the Proposed Remedy

A. Benefits of the Remedy

1. More innovation

57. As the discussion has already suggested, the most important benefit for society that will be created by this remedy will come from faster innovation. Some of the benefit will arise because constraints will be lifted from the creative developers working in the applications group. They will no longer be under the control of an operating system monopolist whose highest priority is to maintain this monopoly. See above footnote 3. The reorganization will free them to respond to consumers and adopt new technologies even if they encourage competition for the desktop operating system.

58. Some of the additional innovation will arise because of the race that threatens to breakout between the applications and operating systems companies. Much of this innovation may be of an incremental form, but it can still be very valuable to consumers. This kind of race will spur the developers in both the successor companies, just as the threat from Netscape spurred innovation at Microsoft as a whole. FOF 135.

59. Finally, this remedy will significantly increase the returns that outside innovators, the potential new entrants, can hope to earn if they develop and commercialize a powerful new technology like the browser. Because outsiders have been a critical source of innovative energy for the software industry, this change in expected returns has the potential to generate large benefits for society. One of the key lessons from the economics of technological change is the recognition that even in an undistorted market, innovators earn a private return on their efforts that is lower than the social return. As a result, too little innovation takes place. This problem becomes much worse when a

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powerful player like Microsoft further depresses the return to outside innovators through the tactics that it uses to maintain its monopoly.

2. Price changes

60. If competition emerges in the market for operating systems, this should have the usual effect of reducing the price for the operating system. Symmetrically, more competition for office productivity applications, which could emerge, should also lead to reductions in prices for these products.

61. These price changes will reduce the extent to which consumers are exploited by Microsoft. If so, they will lead to a large gain for consumers and to a corresponding reduction in the profits Microsoft derives from its exploitation. One of the purposes of the antitrust laws is to prevent sellers from using monopoly power to achieve this kind of transfer of wealth from producers to consumers.

62. We also know that monopoly pricing leads to reductions in social welfare to the extent that it causes some people who might be willing to pay more for a good than it costs to produce it are deterred from making a purchase. In a market where a monopolist can charge different consumers different prices, few such buyers may be deterred. In practice, we know that Microsoft currently charges different prices for academic institutions, small and large businesses, people who do and do not buy the Access database program as part of the Office suite, who do or do not buy the operating system as part of a package from an OEM, who do or do not buy the program as an update to a competitive program, who use the Office productivity suite instead of the less complete Microsoft Works package, and who do or do not buy a Microsoft provided technical

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support contract, to name just a few examples. As a result, there is reason to believe that the reduction in output resulting from Microsoft's monopoly pricing may, on net, be relatively small. Moreover, current changes in technology mean that in the future, software vendors will be better able to use fine-tuned pricing mechanisms such as software rental or purchases of specific services from an application service provider. In competitive markets these mechanisms could bring important benefits to consumers. In markets that are under monopoly control, they may further reduce the number of willing buyers who are deterred but increase the exploitation of consumers.

B. Costs of the Remedy

63. There are several potential types of cost associated with this remedy. The costs that concern us most are costs to society. However, to assess whether the remedy is disproportionately punitive, one must also look at the costs from the point of view of Microsoft shareholders.

1. Corporate reorganization

64. There are real costs such as legal fees, moving expenses, marketing and promotional expenses that are associated with a corporate reorganization that creates independent business units. In the ordinary course of business, firms voluntarily incur such costs. Any reasonable calculation of these one-time costs will show that these are very small compared to the value to society of the increased innovation that can reasonably be expected to follow from the reorganization.

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65. This reorganization does means that people who used to work for the same legal entity now work for different legal entities. However, any communication that could take place between two people when they worked for the same firm can still take place when they work for different firms. If, for example, close communication between operating systems developers and applications developers is critical to the success of each, both the operating systems company and all of the applications companies, not just the new one created by this reorganization, will have an incentive to make sure that this communication still takes place. Whether this takes direct phone or email contact, or face-to-face meeting in one person's workplace, or even in offsite retreats, the companies involved will have a large incentive to make sure that these lines of communications remain in place. The only change, and this presumably is a change that will benefit society as a whole, is that the information flows back and forth to applications developers will now treat all developers symmetrically and will remove any preferential treatment that Microsoft applications developers may now receive.

2. Conduct provisions

66. With two major exceptions, the conduct provisions do not force Microsoft to undertake any act. These exceptions aside, the conduct provisions prohibit Microsoft and the successor companies from breaking the law, from taking actions that made it easier for it to break the law in the past, or from taking actions that could be used to conceal illegal acts in the future. Assuming that Microsoft and the successor companies intend to comply with the law, these prohibitions should not impose undue costs on their legitimate business activities.

67. The first exception is the mandate that Microsoft continue to license, on the original terms, the previous operating system product after the release of a major new operating system product. See Provision 3i. The direct cost to society from this provision is virtually zero because the code already exists. If there are additional costs associated with technical support for users of the old operating system, Microsoft is free to charge for any technical support that it, rather than the OEM, provides.

68. The second exception is the requirement that Microsoft disclose all the information about APIs and interfaces that other developers need to be able to interoperate with its operating systems. Microsoft has extensive experience with the process of designing interfaces to its operating system in ways that make them useful and easy to understand for outside developers but that still protect any intellectual property associated with the internal workings of the operating system. Based on this experience, it should, at reasonable cost, be able to provide this information about all the interfaces that it uses.

3. Costs imposed on Microsoft shareholders

69. A reasonable benchmark for estimating the costs of this remedy to Microsoft shareholders is to compare what their wealth will be after the remedy has been imposed to the wealth that they would have possessed if the company had never engaged in any illegal acts. By this standard, this remedy may not impose any costs at all on the shareholders. In the mid 1990s, the Netscape browser and the Java virtual machine posed a very serious threat that the stream of monopoly profits that Microsoft collected from its operating system business would be lost. Because it did break the law, it was able to

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preserve and increase these profits up until the present. If it had obeyed the law, some of this profit might have been lost to operating system competition. The company could therefore be worth less than the combined companies will be worth after the reorganization. Said another way, even if the top executives at Microsoft had known that the course of action that they were about to undertake would lead, with certainty but also with a delay of between five and eight years, to the imposition of the remedy outlined here, they may still have elected to follow their anticompetitive course of action. The gains from defeating the immediate threat and from postponing the emergence of operating system competition by five or more years would have exceeded the low costs to shareholders associated with the eventual imposition of this remedy.

70. Of course, the position of the Microsoft shareholders would be better still if the company were able to violate the antitrust laws. However this additional gain to shareholders imposes large costs on society as a whole. It is precisely these social costs that antitrust law is intended to prevent.

VII. Conclusion

71. In any assessment of the net costs and benefits associated with this proposed remedy, one simple fact stands out. Because it will raise the rate of innovation for the economy as a whole, the remedy creates a stream of benefits that will persist and grow far into the future. There is genuine uncertainty about the exact magnitudes of the benefits and any costs. But any reasonable calculation shows that the expected benefits overwhelm the costs.

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72. Because it will encourage competition and innovation in the vitally important software industry, it is my opinion that this remedy will have a profoundly beneficial effect on our economy.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 27, 2000 in Washington, D.C.

_____

Paul M. Romer

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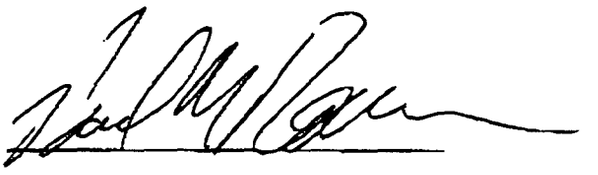
72. Because it will encourage competition and innovation in the vitally important software industry, it is my opinion that this remedy will have a profoundly beneficial effect on our economy.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 27, 2000 in Washington, D.C.



Paul M. Romer

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EXHIBIT 7

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA,

Plaintiff,

v.

MICROSOFT CORPORATION,

Defendant.

#6

STATE OF NEW YORK, ex rel.
Attorney General ELIOT SPITZER,
et al.,

Plaintiffs and
Counterclaim-Defendants,

v.

Civil Action No. 98-1233 (TPJ)

MICROSOFT CORPORATION,

Defendant and
Counterclaim-Plaintiff.

Declaration of Carl Shapiro

April 28, 2000

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I. Qualifications and Scope of Testimony

I am Carl Shapiro, the Transamerica Professor of Business Strategy at the Haas School of Business at the University of California at Berkeley where I have taught for ten years. I also am Director of the Institute of Business and Economic Research at U.C. Berkeley. I have served as the Editor of the *Journal of Economic Perspectives,* a leading economics journal published by the American Economic Association. I am also a Senior Consultant with Charles River Associates, an economics consulting firm.

I am an economist who has been studying antitrust, innovation, and network industries for roughly twenty years. My recent book with Hal R. Varian, *Information Rules: A Strategic Guide to the Network Economy,* discusses competitive strategy in the information economy, emphasizing the pricing of information, the creation of multiple versions of information products such as software, the switching costs and lock-in associated with information technology, and network economics.

I have considerable experience in the application of economics for the purposes of enforcing the antitrust laws. I served during 1995 and 1996 as the Deputy Assistant Attorney General for Economics in the Antitrust Division of the Department of Justice. I have served on several occasions as an expert witness or consultant to the Antitrust Division or the Federal Trade Commission. Over the years I have also consulted or served as an expert witness on numerous antitrust matters for private companies in a range of industries, including several companies in the hardware and software business. My curriculum vitae is attached to this Declaration.

In this proceeding I have been asked by the Plaintiffs to offer an economic analysis of the likely effects of the Plaintiffs' proposed remedy on competition, innovation, and ultimately consumers.

II. General Approach to Remedy and Ultimate Goals

A. The Court's Findings and Remedy Objectives

The Court has found that Microsoft engaged in illegal and anti-competitive conduct to maintain its monopoly in the market for Intel-compatible PC operating systems ("operating systems").

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(Conclusions of Law at 9, 21) The Court also has found that Microsoft attempted to monopolize the market for browsers. (Conclusions of Law at 24) Consistent with these findings, the three primary measures by which I am evaluating the proposed remedy are: (1) creating conditions conducive to entry into the market for operating systems (or expansion by small firms already in that market); (2) preventing Microsoft from using its monopoly over operating systems to gain control over adjacent markets, as it has attempted to do in browsers; (3) restoring competition in browsers. I also consider whether the proposed remedy is likely to create inefficiencies that might diminish the benefits it generates to competition and innovation.

Objective (1) is directly driven by the finding that Microsoft illegally maintained its monopoly and raised barriers to entry into the market for operating systems. Objective (2) flows from the fact that entry into the market for operating systems is more difficult if Microsoft, the monopolist in that market, also controls products complementary to its Windows monopoly, especially complementary products such as the browser that it views as strategic threats to its Windows monopoly. Objective (2) also follows from the finding that Microsoft used its operating systems monopoly to distort competition in browsers. Objective (3) follows from the finding that Microsoft has attempted to monopolize the browser market and has attained its current position in that market using anticompetitive means.[1]

Remedy is directed towards future competition and innovation, so all of my analysis is done on a forward-looking basis, even as it is informed by historical experience drawn from this and other markets. Microsoft has emphasized repeatedly that the computer industry is very fast moving and subject to ongoing technological change. I quite agree, and for just this reason I urge the Court to embrace a remedy that puts in place a *market structure* conducive to competition and innovation, so that consumers can rely as much as possible on market forces rather than court orders to serve their interests. Likewise, in this fast-moving industry any conduct provisions imposed by the Court should be broad enough to prevent Microsoft from engaging in a number of *categories* of anticompetitive tactics in the future, precisely because the specific tactics that Microsoft might employ in the future are hard to predict today in the face of changing products

and technology. So, for example, several of the provisions of the proposed remedy apply to the category of "middleware," not just to the specific types of middleware that were featured in this case, such as the browser or the Java Virtual Machine.

Finally, I take as a working principle that the remedy should operate in a dual manner: first, to prevent a recurrence in the future of conduct by Microsoft akin to its past anti-competitive behavior, and second to affirmatively bolster competition, which Microsoft has stifled.

B. Enabling Competition to Windows

Given the goal of enabling, but not compelling, competition to Windows in the market for operating systems, it is important to identify, as best we can, the likely sources of such competition in the foreseeable future, both to make sure that Microsoft cannot blockade operating systems rivals, and to inform any remedial provisions designed positively to foster operating system competition.

Following the traditional steps used by antitrust economists, I consider first the *current* competitors in operating systems, and then inquire into barriers to entry and the most likely sources of entry into the operating systems market.

As the Court found, *current* competition in operating systems is virtually non-existent. In addition to Apple, the most promising alternative to Windows today is the Linux operating system. Linux, while increasingly popular as a *server* operating system, has limited popularity on the desktop for two primary reasons: (1) Linux still is regarded as overly difficult to use for many consumers, and (2) many of the most popular applications on Windows, including especially Microsoft Office, are not available on the Linux platform.[2] In other words, Linux suffers from the applications barrier to entry emphasized by the Court in its Findings. And the

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[1] As of April 2000, Microsoft's Internet Explorer had achieved a browser market share of at least 69%. See RX23 and the Declaration of Rebecca Henderson.

[2] Microsoft has stated that "Linux as a desktop operating system makes no sense. A user would end up with a system that has fewer applications, is more complex to use and manage, and is less intuitive." See "Linux Makes No Sense at the Desktop," p. 4 of "Linux Myths," available at www.microsoft.com/NTServer/nts/news/msnw/LinuxMyths.asp.

ability of Linux to challenge Windows is limited by the fact that Microsoft controls Office, making the barrier to entry even higher than it would be if Office were owned separately from Windows.

Moving from actual to potential competitors, and looking farther into the future, challenges to the Windows monopoly may come from various directions, some of which we surely cannot anticipate today. But we can illustrate the principle of "enabling entry" by looking at two examples of possible challenges that can currently be seen on the horizon.[3]

One promising entry path into the market for operating systems is via cross-platform middleware. If such middleware becomes widely used, more and more applications may be written to that middleware, making it far easier for new operating systems to run many popular applications. I do not believe it is possible to identify today with any confidence the specific middleware that will play this role in the next several years. Therefore, the remedy chosen by the Court should broadly prevent Microsoft from blocking the emergence or widespread distribution of middleware. Establishing an entity with strong middleware assets and broad distribution that is independent of Windows will clearly help support this mode of entry.

Another promising route by which entry could occur into operating systems, especially in the corporate setting (as opposed to residential users), is through the increased use of "thin clients" or "network computers" working in conjunction with servers. Microsoft has pointed to such client/server architectures as a potential threat to Windows. (Direct Testimony of Richard Schmalensee at ¶151-153.) Under this approach, network computers running non-Microsoft operating systems would be linked to servers, many of which run versions of the UNIX operating system. Although the network computer has failed to live up to its promise so far, network computers could displace at least some PCs if they ran the applications desired by businesses. And such applications could run in whole or in part on servers, placing less burden on the client

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[3] The fact that we cannot confidently predict today the most significant modes of entry in the future supports the structural relief proposed by the plaintiffs, which will serve to create a strong new entity (the Applications Company) with the economic *incentives* to promote or support entry into the market for operating systems, from whatever source such entry arises.

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computer. All of this suggests that entry into operating systems will be encouraged if applications are made available to run both on servers and on the thin clients themselves.[4]

Another way in which entry into the market for operating systems may occur is that operating systems for *handheld devices* could be modified to become substitutes for desktop operating systems. Microsoft also has noted this source of potential competition in the desktop operating systems market. (Direct Testimony of Richard Schmalensee at ¶154-156.) Again, this type of entry will be promoted if key applications are made available to run on these "thin" operating systems outside Microsoft's control.

Consistent with the Court's findings regarding barriers to entry into the market for operating systems, the key to success for all of these possible entrants is their ability to run many popular applications currently available on desktop machines running Windows. As I discuss below, splitting off Microsoft's Applications Business from its Operating Systems Business will create incentives for the resulting Applications Company to make important applications such as Office available to run on rival operating systems, thereby significantly lowering barriers to entry.

C. Lessons about Entry from Other Markets with Network Effects

We can learn a great deal about entry barriers in network markets, and how they are overcome, from historical experience in other markets with network effects in which dominant firms have been successfully challenged. Consider the following examples:

- Nintendo vs. Atari in Video Games: Atari was the dominant firm in video games during the early 1980s. Nintendo displaced Atari as the dominant firm by the late 1980s. Nintendo based its challenge on its strengths in two complementary products: games designed originally for arcades (rather than home machines) and the provision of video game systems in Japan.[5]
- Microsoft Word vs. WordPerfect in Word Processing Software: WordPerfect was the leading supplier of word processing software for personal computers during

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[4] See the Declaration of Rebecca Henderson for a further discussion of how the availability of applications on servers would promote entry in to the market for operating systems.

[5] Some years ago I studied competition in the video game market during the 1980s as part of my work on behalf of Atari Corporation in its antitrust case against Nintendo.

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George Mason Law Review 523 at 544-45 for this description of the battle between Western Union and American Express.

the provision of programming tools and leadership in object-oriented programming.[9]

The common lesson from these and other such episodes is this: While network monopolies can be very strong, they are most vulnerable to attack by firms with a strong position in the provision of a widely-used *complementary product*. In the current case involving Microsoft, this principle implies that the strongest threat to Windows is likely to come from a company with a strong position in widely-used applications software for PCs, middleware that runs on Windows, hardware for PCs, and/or operating systems for devices other than PCs. Indeed, the liability phase of this case focused on the threat posed to the Windows monopoly by one extremely popular complementary middleware product running on Windows, namely the Netscape browser. What distinguishes the Windows story of ongoing monopoly from the examples above of successful entry is that Microsoft engaged in anti-competitive conduct to fend off the threat posed by Netscape, the dominant browser company circa 1995-96.

Microsoft is keenly aware of the principle that companies providing these complementary products tend to pose the most immediate threat to their Windows monopoly. Indeed, Microsoft has long recognized that the best way to avoid or defuse challenges to its desktop dominance is by controlling more and more functionality surrounding its desktop operating system and to limit the development and popularity of non-Microsoft middleware.[10]

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[9] I studied competition in the market for database software as part of my work in the early 1990s on behalf of Borland in connection with its acquisition of Ashton-Tate.

[10] Findings ¶68 ("Microsoft was apprehensive that the APIs exposed by middleware technologies would attract so much developer interest, and would become so numerous and varied, that there would arise a substantial and growing number of full-featured applications that relied largely, or even wholly, on middleware APIs. The applications relying largely on middleware APIs would potentially be relatively easy to port from one operating system to another. The applications relying exclusively on middleware APIs would run, as written, on any operating system hosting the requisite middleware. So the more popular middleware became and the more APIs it exposed, the more the positive feedback loop that sustains the applications barrier to entry would dissipate. Microsoft was concerned with middleware as a category of software; each type of middleware contributed to the threat posed by the entire category.") Conclusions at 9 ("In this case, Microsoft early on recognized middleware as the Trojan horse that, once having, in effect, infiltrated the applications barrier, could enable rival operating systems to enter the market for Intel-compatible PC operating systems unimpeded. Simply put, middleware threatened to

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It follows that the Court can greatly facilitate entry and competition in operating systems by creating an independent company with a strong set of widely-used Windows applications, middleware, and other complements to Windows. The Applications Company will be most impressive in these respects, with its unmatched complex of Windows applications. Put differently, the Applications Company will possess assets sufficient to threaten the Windows monopoly, the earlier threat from Netscape and Sun having been eliminated through anti-competitive means. In addition, the Court can enable entry into operating systems by preventing Microsoft from using its Windows monopoly to gain control of other complementary products, especially server operating systems, "thin" operating systems, and middleware for the Windows operating system.

D. Evaluation of the Economic Effects of Plaintiffs' Proposed Remedy

With these economic principles in mind, I turn now to an evaluation of the likely economic effects of the Plaintiffs' proposed remedy. I emphasize the role played by the various provisions of the proposed remedy in lowering the barriers to entry into the market for operating systems. I also consider whether the proposed remedy will inhibit pro-competitive conduct or integration.

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demolish Microsoft's coveted monopoly power. Alerted to the threat, Microsoft strove over a period of approximately four years to prevent middleware technologies from fostering the development of enough full-featured, cross-platform applications to erode the applications barrier. In pursuit of this goal, Microsoft sought to convince developers to concentrate on Windows-specific APIs and ignore interfaces exposed by the two incarnations of middleware that posed the greatest threat, namely, Netscape's Navigator Web browser and Sun's implementation of the Java technology. Microsoft's campaign succeeded in preventing - for several years, and perhaps permanently - Navigator and Java from fulfilling their potential to open the market for Intel-compatible PC operating systems to competition on the merits.") Findings ¶409 ("Microsoft also engaged in a concerted series of actions designed to protect the applications barrier to entry, and hence its monopoly power, from a variety of middleware threats, including Netscape's Web browser and Sun's implementation of Java. Many of these actions have harmed consumers in ways that are immediate and easily discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition.") See also Findings ¶411 ("It is clear, however, that Microsoft has retarded, and perhaps altogether extinguished, the process by which these two middleware technologies [Netscape's Navigator and Sun's Java] could have facilitated the introduction of competition into

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Although the proposed remedy must be evaluated as a package, for the purposes of exposition I first discuss the reorganization and then the conduct provisions.

III. Proposed Reorganization -- §1, §2

The proposed remedy (§1, §2) calls for a reorganization of Microsoft into two separate companies, an Applications Company containing the Applications Business and an Operating Systems Company containing the Operating Systems Business. The key economic features of the proposed reorganization are that each company be operated independently of the other, and that the two companies continue to develop, distribute, license and sell their products independently.

My analysis of the proposed reorganization focuses on how the economic incentives of these two companies will *differ* from the economic incentives facing a combined company controlling both applications and operating systems. Based on these altered incentives, and on the limitations under which the two companies will operate (§2(b)), we can use economic principles to make some general predictions about how the proposed reorganization will affect competition and innovation. I also consider legitimate ways in which the two companies may need to cooperate to offer improved products at lower prices, and whether the limitations imposed upon them in §2(b) of the proposed remedy will prevent them from achieving such pro-competitive ends.

A. Lower Entry Barriers into Operating Systems

The overarching economic effect of the reorganization is to create a strong company, the Applications Company, that will have the ability and incentive to make its offerings more "cross-platform." For example, the Applications Company will have a greater incentive to make Microsoft Office available to run on non-Windows platforms, and to enhance the value of Microsoft's Visual Studio suite of developer tools for ISVs seeking to develop programs for non-Windows operating systems. The improved availability of the Application Company's products as complements to rival platforms will thus help those actual and potential rivals to Windows to overcome the applications barrier to entry that currently protects the Windows monopoly.

The Applications Company unquestionably will have greater incentives to facilitate entry and expansion by rivals to Windows by virtue of its independence from the Operating Systems Company. Currently, Microsoft considers the loss of revenues and profits from its Windows monopoly when considering whether its Applications Business should cooperate in various ways with actual and potential rivals to Windows. After the reorganization, the Applications Company will no longer have any incentive to protect the monopoly profits associated with Windows. Therefore, to the extent that the Applications Business can facilitate or frustrate entry into the operating systems market, such entry will be easier and more likely as a result of the reorganization.[11]

Indeed, after the reorganization, the Applications Company will positively *benefit* from the improved quality and lower price of operating systems that can be expected to result from lower entry barriers into the market for operating systems. This follows from a well-known economic principle: the supplier of one product (here, Office) benefits if a complementary product (here, Windows) is improved or made less expensive as a result of enhanced competition for the complementary product.

As a tangible example of the pro-competitive effects of the reorganization, I expect that an independent Applications Company today would have an incentive to port at least some aspects of Office to Linux. Corel has already ported its Perfect Office suite to Linux. There is already a sizeable installed base of Linux users. The Applications Company could begin by porting over those aspects of Office that are easiest to port and/or have the greatest demand on Linux, e.g., Excel and Word. And the Applications Company could offer Linux users file compatibility between Office on Linux and Office for Windows, a very valuable feature indeed given the size of the installed base of Office users.

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[11] GX 514 gives one example of how Office has been used by Microsoft to protect the Windows monopoly by favoring Internet Explorer in Microsoft's battle with Netscape. This 1997 e-mail by Paul Maritz explains that he told the Office group "that they will target their XL and Access publishing features only at IE4, this was hard decision for them (based on IE's current market share)" but was done to promote the major goal of getting browser share up to 50% or more.

Another example of how the Applications Company will have incentives to facilitate entry by rivals to Windows relates to Microsoft's popular Visual Studio suite of programming tools, which includes Microsoft's Java development tools, Visual J++. My understanding is that these tools are familiar to, and widely used by, developers writing to the Windows platform. An independent Applications Company will have a greater incentive than does Microsoft today to make these tools more valuable for developers writing to rival platforms or to cross-platform middleware.

As a final example of how entry barriers will be lowered by the reorganization (and one that is especially fitting given Microsoft's antitrust violations found by the Court), the Applications Company will have a greater incentive than does Microsoft today to make its browser work well with operating systems other than Windows. So, the reorganization will help promote the original promise first offered by Netscape Navigator, namely cross-platform browsing functionality offered by a firm that is financially independent of Windows.

B. Lessons from the Relationship Between Intel and Microsoft

I believe we can learn a great deal from the relationship between Intel and Microsoft about how competition is engendered through the healthy tension that exists between two companies that are dominant in their respective complementary products.[12] One can think of the reorganization as creating a relationship between the Applications Company (with Office) and the Operating Systems Company (with Windows) comparable to that which has existed for a number of years between Microsoft (with Windows) and Intel (with its microprocessors such as the Pentium). Therefore, lessons from the Intel/Microsoft relationship should be very valuable in understanding how the proposed reorganization will affect competition.

The key point is that Intel has repeatedly taken actions to strengthen operating systems that hold out the promise of one day becoming an alternative to Windows. The most significant example is Intel's strong support for Linux. More specifically, Intel Capital, the group within Intel that

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[12] I consulted and testified for Intel during 1998 and 1999 in the antitrust case brought by the Federal Trade Commission against Intel regarding Intel's intellectual property practices. I am

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invests in technology complementary to Intel's microprocessor products, has made significant investments in Red Hat Software, Inc., TurboLinux, Inc, and VA Linux Systems, Inc.[13] All of these companies market versions of the Linux operating system. Following the mission statement for Intel Capital, these investments were made to "create and expand new markets for [14] In addition to investing in Linux companies, Intel also writes software drivers for Linux.[15]

Beyond Linux, Intel is supporting a broad array of operating systems on its new 64-bit family of microprocessors, known as IA-64 chips. Intel is working with: HP to enable HP-UX as an operating system on IA-64 chips; a number of companies through the Trillian Project to ensure that Linux is available on IA-64 chips; Novell to assist in the writing of a new operating system (Modesto) on IA-64 chips; IBM and Santa Cruz Operation to create an enterprise-class UNIX operating system on IA-64 chips; and Microsoft for the Windows 2000 operating system on IA-64 chips.[16] In other words, Intel is following its own self interest in working with multiple operating systems. In similar fashion, the Applications Company will have incentives to be "platform neutral" following the reorganization, rather than favoring the Windows platform.

We see the same tendency on Microsoft's part to do an "end run" around Intel, i.e., to cooperate with Intel's rivals and thus encourage competition in microprocessors and reduce Microsoft's

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not currently doing any work on behalf of Intel, and am not relying in this Declaration on any confidential Intel information.

[13] See Intel Capital Investments as of April 1, 2000 as listed on http://www.intel.com/capital/portfolio/cspt.htm (downloaded 26 April 2000). Intel's investments include owning 5% of Red Hat Software at the time Red Hat went public (See Form S-1 for Red Hat Software filed June 4, 1999), owning 10.4% of VA Linux Systems, Inc. at the time VA Linux went public (See Form S-1 for VA Linux Systems filed October 8, 1999), and an undisclosed investment in the private company TurboLinux.

[14] See http://www.intel.com/capital/about/goals.htm downloaded 26 April 2000.

[15] For example, see Intel Press release "Intel announces new Linux driver for its family of 10/100 megabit-per-second network adapters and LAN on motherboard products" dated March 15, 2000, available at http://www.intel.com/network/tech_bulletins/lin_pro100.htm

[16] See "The Intel IA-64 Processor Family: A Multi-Operating System Architecture" for a description of these projects, available at http://developer.intel.com/software/idap/media/pdf/esp/IA-64_OSWP_Rev2.pdf

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reliance on Intel chips. More specifically, Microsoft has repeatedly provided support for technologies competitive to the Intel Architecture. For example, Windows NT was written to run on Digital's Alpha processor soon after the release of Windows NT Advanced Server 3.1.[17] Microsoft expressed its continued support for the Alpha architecture in 1998, with its Alliance for Enterprise Computing with Digital. This support included concurrent releases of Microsoft server-based products for Alpha and Intel systems, as well as the development of a complete set of Microsoft C++, Visual Basic, and Visual Studio tools on Alpha-based systems.[18] Microsoft also has provided support for AMD microprocessors. For example, in designing its DirectX 6.0 software development kit, Microsoft "optimized implementations of the geometry and lighting pipeline for Pentium II, MMX instructions, and the new AMD 3Dnow! Instruction set."[19] In fact, Microsoft recognized that it had an incentive to support AMD's new instruction set even though this would likely be adverse to Intel's interests.[20]

A final key lesson from the Intel/Microsoft relationship is that Intel, based on its strong market position and technical skills, can play a special *leadership* role in promoting new technologies that can at least potentially threaten Microsoft. In network markets, where consumer confidence can be self-fulfilling and endorsements by industry leaders are so valuable, credible leaders can play a critical role in breaking down entry barriers. I am very hopeful that the Applications Company will, like Intel, be strong enough to play such a leadership role and help overcome the chicken and egg problem faced by potential entrants into the market for operating systems. In fact, Intel and the Applications Company may choose to *team up* in various ways to help promote Linux, or some other partial or complete substitute for Windows.

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[17] See "A Brief History of the Windows NT Operating System" available at http://www.microsoft.com/PressPass/features/1998/winntfs.htm

[18] See Microsoft Press Release "Digital and Microsoft Announce Expanded Alliance to Accelerate Adoption of Windows NT Across the Enterprise" dated January 28, 1998, available at http://www.microsoft.com/PressPass/press/1998/jan98/digallpr.asp.

[19] See "A Look at DirectX 6.0, Fahrenheit, and the Future of Microsoft's Multimedia API's" released September 4, 1998, available at http://msdn.microsoft.com/library/Welcome/dsmsdn/msdn_torborg.htm

[20] See GX 290, in which Jim Alchin says he would like to support AMD's new instruction set for its K6 processor even while noting that Intel will be opposed to such support.

C. Added Competition in Browsers

The proposed reorganization also will lead to somewhat greater competition in the browser market, by creating two companies immediately capable of offering browsing functionality. The Operating Systems Company can continue to offer the browsing functionality already included in Windows (so long as it does not violate the anti-binding provision, §3(g)), and is free to develop its own browsing software in the future. The Applications Company will own Internet Explorer itself, and will have incentives to improve Internet Explorer and to support cross-platform capabilities so that Internet Explorer will work well on multiple operating systems.

D. Costs of Reorganization

The benefits from the reorganization to competition in operating systems and in browsers can in principle be weighed against the costs of reorganization, which come in two general forms: (1) one-time costs associated with implementing the reorganization, and (2) possible ongoing costs resulting from the separation of Microsoft into two business entities.

I focus here on any ongoing costs, especially costs that might cause a reduction in the rate of innovation or an increase in the cost of developing software.[21] In classic economic terms, we can ask whether there are significant and genuine efficiencies associated with the integration of the Operating Systems Business and the Applications Business within a single company. For the reasons described immediately below, there are good reasons to believe that the collaboration necessary between those developing operating systems and those developing applications to achieve pro-competitive ends can take place across corporate boundaries, so the reorganization will not significantly impede the development of either applications or operating systems.

First, one can ask whether development of *applications* at the Applications Company will be impeded by separating applications development from the development of operating systems. This does not appear to be a major issue, since Microsoft has indicated repeatedly that the

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[21] I would expect the one-time reorganization costs to be modest in comparison with the market value of Microsoft or the magnitude of commerce involved in the operating systems market.

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Windows platform is "open" and that Microsoft provides the information necessary for ISVs to develop innovative applications on the Windows platform.[22]

Conversely, one can ask whether the development of *operating systems* will be impeded by the separation of operating systems and applications. Again, Microsoft has stated that its operating systems development teams are fully capable of incorporating suggestions from ISVs into their development process for Windows.[23] This gives me some assurance that the most important

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[22] Bill Gates has written that "Windows is a piece of intellectual property whose 'facilities' are totally open to partners and competitors alike. Windows programming interfaces are published free of charge, so millions of independent software developers can make use of its built-in facilities (e.g., the user interface) in the applications they design." See "Compete, Don't Delete," *The Economist*, June 13, 1998, p. 19. Microsoft also states: "Microsoft does not simply disclose Windows APIs to third party software developers. Rather, it actively 'evangelizes' the Windows APIs to software developers. In fact, Microsoft devotes about $100 million per year and 2,000 employees (nearly 10% of the Microsoft workforce) to developer support. No other computer company provides anything like this level of support to the developer community. As part of this developer support, Microsoft offers a free, dedicated Web Site where developers can access information, technical support and Software Development Kits. These tools and support all help developers create software that can run on the Windows platform. Microsoft takes the extra step to have dedicated staff designated to help developers quickly absorb and utilize new technologies, and other resources such as seminars, training sessions and speakers to communicate the information needed to develop the most innovative software." See "Competition in the Software Industry," January 1998, p. 10, available at www.microsoft.com/PressPass/doj/1-98whitepaper.htm

[23] Microsoft's economics expert, Richard Schmalensee, has testified that Microsoft "talks to [independent] developers about what features they would like in view [new] versions." (Trial Testimony of Richard Schmalensee, June 22, 1999, p.m. Session at 59) Michael Devlin, the President of Rational Software Corporation, a Windows ISV, testified at trial (Direct Testimony of Michael T. Devlin, at ¶17) that "Microsoft often seeks input from ISVs and other sectors of the software and computer industry when it develops new APIs."

Microsoft also states that: "Microsoft runs an elaborate program – far and away the most extensive in the industry – to solicit input from the computer industry about the development of Windows APIs. (Traditionally, third party software developers played little role in the development of operating systems; their contribution essentially being limited to testing for bugs.) Microsoft solicits input and feedback from other software developers from the earliest stages of the development process. The Win32 APIs, which are the basis for Windows 95 and Windows NT, provide a good example. Windows NT, the first operating system to implement the Win32 APIs, was released in 1993. But Microsoft had provided initial specifications for the Win32 APIs to 25 third party software developers three years earlier, in November 1990, and obtained valuable feedback from them in a series of meetings that followed. During 1991

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input from applications developers to those writing new versions of operating systems or fixing bugs in operating systems can take place across corporate boundaries.

Moving from product development to pricing, there is a theoretical concern that Microsoft today has an incentive to set a lower price for Windows and Office together than will the Operating Systems Company and the Applications Company setting those prices independently immediately following the reorganization.[24] For the reasons articulated above, as a theoretical matter this concern is very likely outweighed by the lowering of entry barriers into operating systems that the reorganization will cause, especially when one considers non-price as well as price considerations, specifically the innovation that will be stimulated by the reorganization.[25] In any event, companies selling complementary products commonly find ways to solve the "complementary monopolies" problem when necessary, and I expect as well the Operating Systems Company and the Applications Company would be able to overcome this problem if it proved to be commercially significant.

For all of these reasons, I am confident that any costs to consumers associated with the proposed reorganization plan will easily be outweighed by its pro-competitive benefits.

IV. Interim Conduct Remedies -- §3

The proposed conduct remedies will lower entry barriers into the market for operating systems until the reorganization of Microsoft has been accomplished and the Applications Business has

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Microsoft provided updates to the Win32 APIs to more than 300 third party software developers. By January 1992, the Win32 APIs were posted on CompuServe, America Online and the Internet, and in March 1992 the Win32 APIs were published by Microsoft Press. By the time Windows NT was commercially released in 1993, the Win32 APIs were the most thoroughly reviewed set of APIs in history, ensuring quality and increasing the likelihood that the APIs would be widely used. Updates of the APIs continued through the release of Windows 95 and to date." See "Competition in the Software Industry," January 1998, p. 9, available at www.microsoft.com/PressPass/doj/1-98whitepaper.htm.

[24] This theoretical possibility is known as the "complementary monopolies" problem, or as the problem of "double marginalization."

[25] So, for example, consumers stand to benefit as a cheaper operating system, namely Linux, becomes more attractive.

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had some time, namely three years, to help enable competitors to Windows. These interim conduct remedies thus serve two related purposes: (1) to force Microsoft to halt anti-competitive conduct of the type that the Court has already found until the reorganization takes place; and (2) to expressly prohibit the Operations System Company from resuming such activity during the delicate period following the reorganization when it is especially vital that there be no artificial entry barriers into the market for operating systems.

A. No Exclusionary Contracts -- §3(a), §3(d), §3(e), 3(h)

Microsoft has employed a wide range of contracts that to a varying degree are "exclusive," in the sense that they prohibit companies dealing with Microsoft from also dealing with Microsoft's rivals, or provide financial disincentives to doing so. As the Court has found, these contracts have had a significant exclusionary impact.[26] As the trial record shows, exclusivity has taken many forms, and Microsoft has applied pressure to a wide range of companies, including OEMs, ISVs, IAPs, and ICPs, as well as Apple and Intel.

Examples of the behavior that the Court found include: (1) Exclusionary agreements with the most important distribution channels for browsers;[27] (2) Conditioning ISV access to key

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[26] Findings ¶410 ("...by enticing firms into exclusivity arrangements with valuable inducements that only Microsoft could offer and that the firms reasonably believed they could not do without, Microsoft forced those consumers who otherwise would have elected Navigator as their browser to either pay a substantial price (in the forms of downloading, installation, confusion, degraded system performance, and diminished memory capacity) or content themselves with Internet Explorer.") See also Findings ¶296 (concluding that the "marked increase" in the proportion of AOL subscribers using AOL software that included Internet Explorer (from 34% to 92%) "resulted in no small part from AOL's efforts to convert its existing subscribers to the newest version of its client software" following agreements entered into between AOL and Microsoft), and Findings ¶309 (stating that Internet Explorer's weighted average share of shipments of browsing software by ISPs who agreed to make Internet Explorer their default browser was 94% by the end of 1997, compared to 14% share for ISPs who made no such agreement).

[27] Findings ¶¶230-38 and Conclusions at 11 ("Microsoft used incentives and threats to induce especially important OEMs to design their distributional, promotional and technical efforts to favor Internet Explorer to the exclusion of Navigator.") and Findings ¶143 and Conclusions at 10. ("The core of this strategy was ensuring that the firms comprising the most effective channels for the generation of browser usage would devote their distributional and promotional efforts to Internet Explorer rather than Navigator. Recognizing that pre-installation by OEMs and

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technical information on exclusive use of Microsoft technology through "First Wave" agreements;[28] (3) Exclusive agreements with ICPs in exchange for coveted placement on the "Channel Bar;"[29] and (4) Conditioning continued development of the Mac Office Suite on Apple's making Internet Explorer the default browser in Mac OS software releases.[30]

Exclusivity in network industries can be especially pernicious, given the importance of complements and the self-fulfilling aspects of expectations: consumers can easily lose confidence in a new product that is denied access to critical complements, and this loss of confidence can then become self-fulfilling, creating a vicious cycle of decline or disrupting a virtuous cycle of increasing adoptions.[31] Netscape's browser faced this threat as a consequence

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bundling with the proprietary software of IAPs led more directly and efficiently to browser usage than any other practices in the industry, Microsoft devoted major efforts to usurping those two channels.")

[28] Findings at ¶¶401-02 and Conclusions at 19 ("...Microsoft impelled ISVs, which are dependent upon Microsoft for technical information and certifications relating to Windows, to use and distribute Microsoft's version of the Windows JVM rather than any Sun-compliant version.") and Findings ¶¶339-40 (stating that Microsoft promised "preferential support, in the form of early Windows 98 and Windows NT betas, other technical information, and the right to use certain Microsoft seals of approval, to important ISVs that agree to certain conditions. One of these conditions is that the ISVs use Internet Explorer as the default browsing software for any software they develop with a hypertext-based user interface. Another condition is that the ISVs use Microsoft's 'HTML Help,' which is accessible only with Internet Explorer, to implement their applications' help systems. By exchanging its vital support for the agreement of leading ISVs to make Internet Explorer the default browsing software on which their products rely, Microsoft has ensured that many of the most popular Web-centric applications will rely on browsing technologies found only in Windows and has increased the likelihood that the millions of consumers using these products will use Internet Explorer rather than Navigator.")

[29] Findings ¶¶311-36.

[30] Findings ¶351, quoting Apple's Technology Agreement with Microsoft ("While Apple may bundle browsers other than Internet Explorer with such Mac OS system software releases, Apple will make Internet Explorer for Macintosh the default selection in the choice of all included internet browsers (i.e., when the user invokes the "Browse the Internet" or equivalent icon, the Mac OS will launch Internet Explorer for Macintosh).")

[31] For a further discussion of how exclusive agreements can raise entry barriers in network industries, see Carl Shapiro, "Exclusivity in Network Industries," 7 George Mason Law Review 673; David A. Balto, "Networks and Exclusivity" Antitrust Analysis to Promote Network Competition," 7 George Mason Law Review 523, and Carl Shapiro, "Antitrust in Network

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of Microsoft's strategy to deny Navigator access to OEMs and IAPs. The economic implication is that an effective remedy should assure new entrants into the market for operating systems of access to complements (OEMs, ISVs, IAPs, and IHVs) by including a broad ban on exclusive dealing by Microsoft. The need for a ban on exclusionary contracts is accentuated because Microsoft has already established a pattern of employing exclusionary tactics to blockade rival software that threatens its Windows monopoly.

The specific provisions in the proposed order relating to exclusive dealing all serve to insure that complements are indeed available to those offering Platform Software that is competitive with Windows. These complements include distribution through OEMs, preserved by preventing Microsoft from striking exclusive relationships with OEMs, as well as applications software, preserved by preventing Microsoft from striking exclusive relationships with ISVs.

Nothing in the proposed order prevents Microsoft from competing on the merits to make it attractive for OEMs, ISVs, IHVs, IAPs, or other companies doing business with Microsoft to support, use, or promote Microsoft software, or to develop complements to Microsoft software. Nor is Microsoft enjoined from making investments in ISVs in order to provide them with the resources to develop software that works well with Microsoft's software. The purpose of these provisions is simply to prevent Microsoft from denying rival Platform Software access to complements.

1. OEMs -- §3(a)

With respect to OEM relations, §3(a)(i) prevents Microsoft from providing financial incentives that discourage any OEM's action to "use, distribute, promote, license, develop, produce or sell any product or service that competes with any Microsoft product or service." Clearly, this provision is closely linked to the anti-competitive conduct in which Microsoft has already engaged. Microsoft has proven that it can apply enormous pressure to OEMs, including IBM, a very large and strong OEM, to prevent OEMs from supporting rival software.

Industries," Antitrust Division, U.S. Department of Justice, March 1996, available at usdoj.gov/atr/public/speeches/shapir.mar.

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The requirement of §3(a)(ii) that Microsoft offer uniform terms for Windows to the top 20 OEMs, i.e., the requirement of "transparent pricing," prevents Microsoft from punishing a large OEM for supporting rival software. This provision should improve the enforcement of the "no retaliation" rule embodied directly in §3(a).

2. ISVs and IHVs -- §3(d), §3(h)

Section 3(d) of the proposed remedy prohibits Microsoft from providing financial incentives that discourage an ISV from developing or supporting software that either is competitive to Microsoft software or works with non-Microsoft platform software. This provision will prevent Microsoft from making promising software or hardware unavailable to work with rival Platform Software, and thus will prevent Microsoft from continuing to raise entry barriers into the market for operating systems.

Section 3(h) of the proposed remedy prohibits Microsoft from inducing any actual or potential Platform Software competitor to refrain from offering software competitive with Microsoft platform software. This provision operates together with Section 3(d) to prevent Microsoft from using its significant resources to pay a potential competitor to refrain from challenging Microsoft's Platform Software.

The proposed order permits Microsoft to offer financial incentives for ISVs or IHVs to develop software or hardware that works with Microsoft's Platform Software, e.g., by helping to fund independent development efforts or by taking minority ownership stakes in software or hardware development houses. Such investments can easily be pro-competitive, so long as the ISV or IHV retains the right to make products that work with non-Microsoft Platform Software.

3. General Prohibition on Exclusive Dealing -- §3(e)

Microsoft has employed exclusionary contracts with a range of companies besides OEMs and ISVs, including IAPs, ICPs, and Apple. Section 3(e) of the proposed remedy, which is a general ban on exclusive dealing, will prevent Microsoft from interfering with the availability of complements for non-Microsoft Platform Software. Since Microsoft has dealings with a wide range of companies, and since it is difficult to predict precisely which trading partners Microsoft might otherwise seek to tie up under exclusive arrangements in the next several years, a general

ban on exclusionary contracts will serve to lower entry barriers more effectively than would more limited provisions directed at specific categories of trading partners.

B. Disclosure of Interface Information -- §3(b)

Interfaces typically play a critical role in industries subject to network effects. Challengers often seek to interconnect with the dominant network to achieve compatibility as a way of overcoming barriers to entry based on network effects. For example, interconnection has long been important to the survival of smaller firms in transportation and communications networks, from railroads to telephones to the Internet. In the software industry, Borland sought to make its Quattro Pro spreadsheet software compatible with the then-dominant Lotus 1-2-3 spreadsheet software during the 1980s, and Microsoft made it as easy as possible for WordPerfect users to transfer their WordPerfect files and training to Microsoft Word when Microsoft was attacking WordPerfect's strong position in the market for word processing software.[32]

Interface information about Windows[33] is extremely valuable to a wide range of ISVs, IHVs, and OEMs. As a result, Microsoft can exert a great deal of influence over the success or failure of products that are complementary to Windows by virtue of its control over such interface information. Indeed, the Court has found that Microsoft strategically withheld interface information to stave off competition from platform software that Microsoft regarded as a threat to Windows.[34]

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[32] For an extended discussion of compatibility, interconnection, and interfaces in network markets, see Chapters 7, 8, and 9 in *Information Rules*.

[33] See the proposed order for a more precise definition of "APIs," "Communications Interfaces," and "Technical Information." From an economic (rather than technical) perspective, interface information encompasses all information used by Microsoft's own applications and middleware to interoperate with Windows. The operative economic principle is that ISVs, IHVs, and OEMs should be placed on equal footing to Microsoft's own developers for the purposes of developing, licensing, and supporting products that interoperate with Windows.

[34] Microsoft delayed release of the 'Remote Network Access' API in Windows 95 to Netscape for three months while trying to convince Netscape to limit the APIs exposed to software developers. Findings ¶91 ("Despite Netscape's persistence, Microsoft did not release the API to Netscape until late October, i.e., as Allard had warned, more than three months later. The delay in turn forced Netscape to postpone the release of its Windows 95 browser until substantially

To prevent Microsoft from disadvantaging rival platform software, the proposed remedy requires Microsoft to disclose to ISVs, IHVs, and OEMs the information they need to interoperate effectively with Windows. The operative principle is equality of disclosure between Microsoft's own developers of middleware and applications, on the one hand, and outside companies seeking that information on the other hand.

This disclosure requirement directly addresses the Court's core concern about barriers to entry by non-Microsoft Platform Software in two ways, which I now discuss in turn.

1. Enabling Non-Microsoft Software to Work Efficiently with Windows

Mandatory disclosure of interface information will prevent Microsoft from disadvantaging rival software by denying it the ability to interoperate as effectively with Windows as does Microsoft software. As noted above, delay or denial of interface information is one method Microsoft has employed to discourage the widespread adoption of non-Microsoft middleware, and thus raise entry barriers into the market for operating systems.

2. Preventing Microsoft from Anti-Competitively Controlling Complements

Mandatory disclosure of interface information also will prevent Microsoft from using its Windows monopoly power to gain control of complementary applications and middleware. Such anti-competitive conduct not only raises entry barriers, but denies consumers choice of complementary products and stifles innovation surrounding the Windows platform.

Two especially important software products today that are complementary to the Windows operating system on personal computers are operating systems on handheld devices and operating systems on servers. As many observers have noted, and as Microsoft has pointed out, ongoing hardware improvements, along with the increased networking of computers, combined with the increased use of wireless technologies, are greatly expanding the possibilities for both handheld devices and client-server architectures. Thus, PCs running Windows are increasingly communicating with servers and handheld devices.

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after the release of Windows 95 (and Internet Explorer) in August 1995. As a result, Netscape was excluded from most of the holiday selling season.")

As a result of these shifts in the technology of computing and communications, Microsoft can greatly advantage its own operating systems for servers (Windows 2000 Server) and for handheld devices (Windows CE) by introducing proprietary links between Windows on the desktop and Windows for servers or Windows for handheld devices.[35] In this context, and looking forward to competition over the next several years, the disclosure by Microsoft of interface information called for specifically in §3(b)(iii) of the proposed remedy is vital to prevent Microsoft from using the power associated with its Windows monopoly on the PC to gain control over two critical adjacent software products: operating systems for servers and/or operating systems for handheld devices. Indeed, a good case can be made that the most significant threat to Windows in the next several years will come from client/server architectures. Making sure that Microsoft cannot subvert this threat using undisclosed proprietary interfaces is thus central to an effective remedy in this case. Provision 3(b)(iii) in particular will operate to prevent such anti-competitive conduct by Microsoft.

3. Feasibility and Enforcement of Mandatory Disclosure

As I noted above, Microsoft has clearly stated that its APIs are "open," i.e., disclosed to ISVs, and Microsoft has well-established procedures for the release of APIs and the provision of associated technical support to ISVs. Therefore, Microsoft will not need to construct a new business regime to implement API disclosure, and mandatory disclosure of APIs should not impose any significant burden on Microsoft.

Having said this, I do not expect a regime of mandatory disclosure of interface information to be free of disputes and difficulties, especially since timeliness and completeness of Microsoft's disclosures are very important to ISVs. There is a very real and practical danger that Microsoft will strategically delay disclosure, or disclose only part of the information needed by ISVs. For just this reason, I regard the secure facility provided for in §3(b) of the proposed remedy as very helpful for the purposes of insuring the Microsoft meets its disclosure obligations.

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[35] For more information on Microsoft's incentives to use its Windows monopoly to prevent threats emerging from software running on servers and handheld devices, see the Declaration of Rebecca Henderson. Microsoft's recent tactics regarding Kerberos, which are described by

C. OEM Flexibility in Product Configuration -- §3(a)(iii)

Microsoft has used its monopoly power to control the boot sequence and the user interface offered by OEMs. These restrictions have made it more difficult for rival middleware to gain presence on the desktop and thus compete more effectively with Microsoft middleware. The Court has found that these restrictions go beyond the protections afforded to Microsoft as a result of its Windows copyright.[36]

By insuring that OEMs have much greater flexibility to configure their products than Microsoft has permitted them in the past, §3(a)(iii) of the proposed remedy will stop Microsoft from blocking or impeding the OEM distribution channel for non-Microsoft software. The result will surely be greater choice for consumers in terms of the look and feel of their computers, and greater opportunity for innovative software to reach consumers and thus face a market test undistorted by the exercise of Microsoft's monopoly power.

D. No Performance Degradation for Rival Middleware -- §3(c)

Microsoft has demonstrated its ability and incentive to hinder the adoption of rival middleware through a variety of exclusionary tactics such as it employed against Netscape's browser. Once Microsoft is enjoined from employing the tactics it has already used, Microsoft will have an incentive to switch to new, substitute tactics having the same effect. One such tactic is to intentionally degrade the performance of rival middleware interoperating with Windows.[37]

Section 3(c) of the proposed remedy will make it more difficult for Microsoft to evade the proposed remedy by degrading the performance of rival middleware. Given the danger that Microsoft might repeat this conduct, but recognizing that some such degradation may be difficult

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Professor Henderson, are an excellent example of how Microsoft is able to use Windows proprietary interfaces strategically.

[36] Conclusions at 13 ("Microsoft has presented no evidence that the contractual (or the technological) restrictions it placed on OEMs' ability to alter Windows derive from any of the enumerated rights explicitly granted to a copyright holder under the Copyright Act.")

[37] Microsoft recognized that one tactic that would favor Internet Explorer over Netscape Navigator would be to make using Navigator a "jolting" experience for Windows users.

or impossible to avoid as Microsoft improves its operating systems, the effectiveness of the remedy is enhanced, without hindering innovation by Microsoft, by requiring Microsoft to notify the supplier of any middleware for which Microsoft knowingly degrades the performance, for Microsoft to explain its reasons for the degradation, and for Microsoft to identify any ways known to Microsoft for the middleware supplier to mitigate the degradation.

E. Contractual Tying and Binding -- §3(f), §3(g)

1. Ban on Contractual Tying -- §3(f)

Microsoft has anti-competitively tied middleware to Windows by contract, both to defend its Windows monopoly and in an attempt to monopolize the market for browsers. (Findings of Fact ¶158-60) Section 3(f) of the proposed remedy prohibits such tying, and thus forces Microsoft's products to compete directly on the merits with rival software products. This provision should enhance OEM and consumer choice of software, and encourage innovation in software categories complementary to Windows.

2. Restrictions on Binding Middleware to Operating Systems -- §3(g)

There has been a great deal of talk about "technological tying" in this case. Microsoft has argued strenuously that its right to improve its operating system should not be compromised. Holding aside the specifics of how Microsoft added browser functionality to Windows, I accept the proposition that innovation often takes place in the computer industry through the integration of various capabilities or functions into a single piece of hardware or software. However, if such integrated capabilities are indeed beneficial to consumers, there is no need to *force* users to adopt all of the functions offered in an bundled product.

I believe that §3(g) strikes an excellent balance between the consumer benefits that can arise when Microsoft adds functionality to its operating system and the benefits that consumers enjoy when new and improved software is developed independently of Microsoft, especially if that software may serve a role in eroding Microsoft's monopoly position. By allowing OEMs to choose whether to make Microsoft's Middleware Products or rival software directly available to end users, OEMs will have the incentive to experiment to best serve consumers' interests. If a particular piece of Microsoft software is superior to rival offerings, OEMs will simply load on their machines a version of Windows that includes End-User Access to that software. If some

consumers prefer the Microsoft software and others do not, OEMs can configure their machines to suit the tastes of their customers, or allow customers to configure their own machines using add-remove utilities. And if the non-Microsoft software is clearly superior, OEMs will presumably insist that Microsoft provide them a version of Windows in which End-User Access to the Microsoft software can be removed, and offer End-User Access to the superior, non-Microsoft product. This is competition at work.

I understand that requiring Microsoft to offer a version of Windows in which all means of End-User access to middleware can be readily removed by OEMs and by end users will not impose any significant costs on Microsoft or prevent Microsoft from adding new capabilities to its Operating System Products.[38]

In my opinion, §3(g) will clearly promote innovation. It should be evident that this provision will increase the incentives of ISVs to develop middleware, knowing that OEMs will have an incentive to adopt their middleware if it offers superior performance to Microsoft's competitive Middleware Product. At the same time, Microsoft will have an even stronger incentive to innovate if it is forced to compete to provide new functionality to users. Plus, Microsoft is not prohibited from making improvements by integrating more capabilities into the operating system if that integration serves consumer interests. Ultimately, Microsoft will be pushed to make better software because it will be forced to compete to win consumer adoptions of its Middleware Products. Provision §3(g) is pro-competition and pro-innovation.

F. Licensing of Legacy Code -- §4(i)

Microsoft has asserted that it must continue to innovate to compete effectively against its own installed base. (Direct Testimony of Richard Schmalensee, ¶60) To date, competition between Microsoft and its own installed base of Windows has been modest at best since most Microsoft Windows sales are for new machines.[39] Clearly, buyers of a new PC require an operating system

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[38] See the Declaration of Edward W. Felten.

[39] Findings ¶10 ("The largest part of its MS-DOS and Windows sales, however, consists of licensing the products to manufacturers of PCs (known as 'original equipment manufacturers' or 'OEMs'), such as the IBM PC Company and the Compaq Computer Corporation ('Compaq').

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for that machine, and Windows licenses do not permit the user to transfer the O/S from a previous machine.[40] We also observe that Microsoft raises the price and/or reduces the availability of previous versions of Windows when a new version is released.[41]

Through this pricing and distribution strategy, Microsoft can be assured that the functions it offers in its latest release of Windows are widely used and distributed, whether or not consumers prefer the newest version of Windows with those features to a prior version of Windows, perhaps used in conjunction with rival middleware that Microsoft is attempting to displace.

Section 3(i) of the proposed remedy requires Microsoft to continue licensing the predecessor version of Windows (without raising the royalty rate) when a major new version is released. This provision will give OEMs, and thus consumers, the choice of using the predecessor version, perhaps in conjunction with rival middleware, or the newest Microsoft operating system.

This provision will encourage innovation in two ways.

First, §3(i) will encourage software developers to create middleware that is complementary to Windows: the return to such development activities is increased by the assurance that the current version of Windows will continue to be available for OEMs and consumers to load onto new PCs for at least three years, and even after Microsoft introduces a major new operating system release that incorporates some of the functionality offered by the software developer. As a bonus, these

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An OEM typically installs a copy of Windows onto one of its PCs before selling the package to a consumer under a single price.") See Direct Testimony of Frederick R. Warren-Boulton at n. 7, citing Appendix B to Microsoft's Responses to Interrogatories, March 23, 1998 ("In 1997, 87.6% of all copies of the Microsoft's [sic] Windows 95 operating system product were installed by OEMs, while 7.3% were sold through retail channels as upgrades. Windows 95 is available at retail only as an upgrade from a Microsoft licensed operating system.")

[40] Findings at ¶57 ("The license for one of Microsoft's operating system products prohibits the user from transferring the operating system to another machine, so there is no legal secondary market in Microsoft operating systems.")

[41] Findings at ¶62 ("...Microsoft raised the price that it charged OEMs for Windows 95, with trivial exceptions, to the same level as the price it charged for Windows 98 just prior to releasing the newer product.") and Findings at ¶57 ("Microsoft takes pains to ensure that the versions of its operating system that OEMs pre-install on new PC systems are the most current. It does this, in

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enhanced incentives to develop middleware will tend to lower the entry barriers into the market for operating systems and make it more likely that successful cross-platform middleware will emerge in the years ahead.

Second, §3(i) also will encourage innovation by *Microsoft*, since Microsoft will have to add valuable new functionality to support an increase in the price of Windows: unless the new release of Windows offers new functions that consumer truly value, consumers will simply pick the predecessor version of Windows at the prevailing price. Effectively, Microsoft has enhanced incentives to improve its Windows product to compete against its own predecessor version.

Finally, this legacy code provision should make it more difficult for Microsoft to use its Windows monopoly power to gain control over adjacent markets: if a new version of Windows favors Microsoft's complementary products, OEMs and consumers will at least have the choice to use the predecessor version, perhaps in conjunction with non-Microsoft complementary products.[42]

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part, by increasing the price to OEMs of older versions of Windows when the newer versions are released.")

[42] For example, consumer choice would be enhanced, and Microsoft's opportunities for using its desktop monopoly power to gain control over server operating systems using Windows 2000 would be diminished, if Microsoft were required to continue to license Windows NT 4.0 for three years after the release of Windows 2000.

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V. Conclusions

The remedy entered by the Court in this matter will have a major influence on the nature of competition and the path of innovation in the information technology sector of the economy. In my opinion, the primary objective of the remedy should be to lower entry barriers into the market for PC operating systems and thus start to remedy the harm to competition caused by Microsoft's anti-competitive conduct. As explained above, there are strong reasons to believe – based on economic principles and based on the experience of this and other industries – that the proposed reorganization of Microsoft into separate applications and operating systems businesses will lower entry barriers, encourage competition and promote innovation.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 28, 2000 in Washington, DC

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Carl Shapiro

V. Conclusions

The remedy entered by the Court in this matter will have a major influence on the nature of competition and the path of innovation in the information technology sector of the economy. In my opinion, the primary objective of the remedy should be to lower entry barriers into the market for PC operating systems and thus start to remedy the harm to competition caused by Microsoft's anti-competitive conduct. As explained above, there are strong reasons to believe – based on economic principles and based on the experience of this and other industries – that the proposed reorganization of Microsoft into separate applications and operating systems businesses will lower entry barriers, encourage competition and promote innovation.

I declare under penalty of perjury that the foregoing is true and correct. Executed on April 28, 2000 in Washington, DC

Carl Shapiro

Carl Shapiro

EXHIBIT 8

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

AFFIDAVIT OF JOHN V. TUNNEY

STATE OF CALIFORNIA)
) SS:
COUNTY OF LOS ANGELES)

JOHN V. TUNNEY, being first duly sworn upon his oath, deposes and says:

1. The following facts are known to me of my own personal knowledge and, if called as a witness, I could and would competently testify thereto.

2. From 1971 to 1977, I represented the State of California as a United States Senator in Congress.

3. While serving as a member of the Judiciary Committee of the United States Senate during the 93rd Congress, I authored that certain bill described below, and acted as the Floor Manager of the legislation during its consideration by the full Senate. That legislation was passed by Congress and signed into law by the President of the United States. That portion of the law to which I refer below is codified as Section 2(g) of the Antitrust Procedures and Penalty Act, 15 U.S.C. §16(g), and is a subsection of the law now commonly referred to as the "Tunney Act." This legislation was signed into law December 21, 1974.

4. I authored the following language, which was included in the final version of the legislation:

> Not later than 10 days following the date of the filing of any proposal for a consent judgment under subsection (b), each defendant shall file with the district court a description of any and all written or oral communications by or on behalf of such defendant, including any and all written or oral communications on behalf of such defendant, or other person, with any officer or employee of the United States concerning or relevant to such proposal, except that any such communications made by counsel of record

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alone with the Attorney General or the employees of the Department of Justice alone shall be excluded from the requirements of this subsection. Prior to the entry of any consent judgment pursuant to the antitrust laws, each defendant shall certify to the district court that the requirements of this subsection have been complied with and that such filing is a true and complete description of such communications known to the defendant or which the defendant reasonably should have known.

5. Recently, I was asked to review the Tunney Act and certain public documents on file in the case of the *United States vs. Microsoft Corporation*, Civil Action No. 98-1232 (CKK), in the United States District Court for the District of Columbia. Among the documents I reviewed was one filed by Microsoft Corporation entitled, "Defendant Microsoft Corporation's Description of Written or Oral Communications Concerning The Revised Proposed Final Judgment and Certification of Compliance Under 15 U.S.C. Sec. 16(g)," purportedly to comply with the provision set forth in paragraph 4, above.

6. With respect to this provision of the Antitrust Procedures and Penalties Act, it is clear that Congress intended that there should be full disclosure of all communications by a defendant or on behalf of a defendant with any officer or employee of the United States, except for communications made by counsel of record alone with the Attorney General or the employees of the Department of Justice. It is equally clear that by "government official," Congress meant "members of the Executive, Legislative, and Judicial branches of government". Congress specifically intended to cover communications by officers of a defendant corporation, lawyers of such corporation, lobbyists of such corporation, or anyone else acting on behalf of such corporate defendant. If I had not been satisfied this was the plain meaning of the statute, I, as the principal author of the legislation, would not have pressed the legislation through to final passage. I am satisfied that the clear language of the statute ensures disclosures of the

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type described in this paragraph. The legislative history and intent of its author buttress these conclusions.

7. In my opinion, it is essential that all discussions between the defendant corporation and the government (with the specific exception noted in paragraph 6, above) in an antitrust case that might have led to a proposed settlement decree be disclosed. If a defendant corporation did not have to disclose any contacts or communications with the government until such time as there is an actual decree, the very purpose of the disclosure would be defeated. The Tunney Act was never intended to allow for a situation where, in theory, prolific lobbying could be conducted by the defendant prior to the time the presiding judge has ordered settlement negotiations, without public disclosure. If allowed, the Tunney Act would not have reformed the practices utilized in settlement of the ITT case, which in significant fashion demonstrated the need for the legislation in the first instance. The disclosure provisions were designed to help ensure that no defendant can ever achieve through political activities what it cannot obtain through the legal process. Failure to comply with these provisions raises an inference or, at a minimum, an appearance of impropriety.

8. Contrary to some press reports, the Tunney Act was not intended in any way to prevent the Department of Justice from entering into settlements in antitrust suits, especially before trial where litigation risk is generally present. The Act in fact recognized the propriety of such settlements, and merely proscribed procedures to ensure that such settlements were reached on the merits.

9. The legislative history and plain language make clear that Congress intended that a judge make an independent assessment of whether any such settlements are in the public interest, precisely because the policy objective was to ensure that lobbying contacts did not influence the law enforcement function of the Antitrust Division of the Department of Justice. I remain convinced that the policy objective was correct.

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10. The language of the Act was clearly drawn and was intended to be inclusive and not exclusive. In my opinion, the filing of "Written or Oral Communications" by Microsoft Corporation, referred to in paragraph , 5, above, is inadequate to satisfy the clear language and intent of the Tunney Act.

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FURTHER, AFFIANT SAYETH NAUGHT.

JOHN V. TUNNEY

SUBSCRIBED AND SWORN to before me
this 22nd day of January, 2002.

Eleanor McKenna
NOTARY PUBLIC in and for said
County and State

ELEANOR McKENNA
Notary Public, State of New York
No. 31-4973011
Qualified in New York County
Commission Expires October 8, 2002

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EXHIBIT 9

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

Congress of the United States

Washington, DC 20515

August 9, 2001

The Honorable John Ashcroft
U.S. Attorney General
Department of Justice
Tenth Street and Constitution Avenue, NW
Washington, DC 20530

Mr. Steve Ballmer
Chief Executive Officer
Microsoft Corporation
One Microsoft Way
Redmond, WA 98052

The Honorable Tom Miller
Iowa Attorney General
Department of Justice
1305 E. Walnut Street
Des Moines, IA 50319

Dear Sirs:

Following the recent Court of Appeals decision, we are pleased that all sides in the Microsoft antitrust litigation have begun settlement discussions. Today we write to encourage these discussions with the hope that a settlement can be reached at the earliest possible date and on reasonable terms that support competition and innovation.

Antitrust enforcement should be about protecting the American consumer, not deciding winners and losers among wealthy competitors. Now is the time for all parties to the litigation to address the remaining issues and provide some finality that protects consumers and allows the American high-tech industry to innovate and prosper. This industry offers extraordinary promise to deliver exciting new technologies to the American consumer and the global marketplace, and the resolution of this protracted litigation will greatly serve to further that goal.

While not expressing a view on the merits, we respectfully urge all parties to reach a just and speedy conclusion to this case.

Best regards,

Jennifer Dunn
MEMBER OF CONGRESS

Jay Inslee
MEMBER OF CONGRESS

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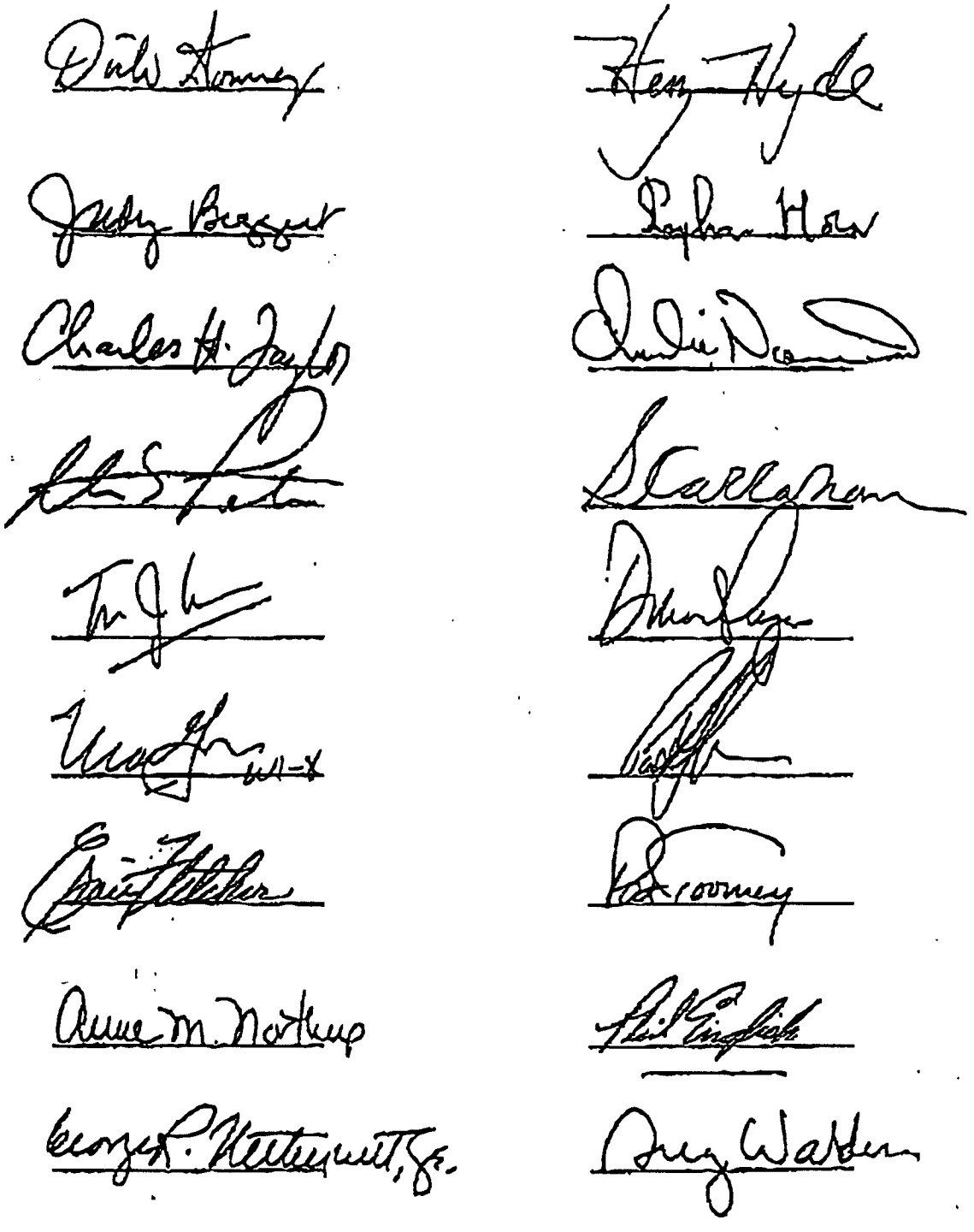

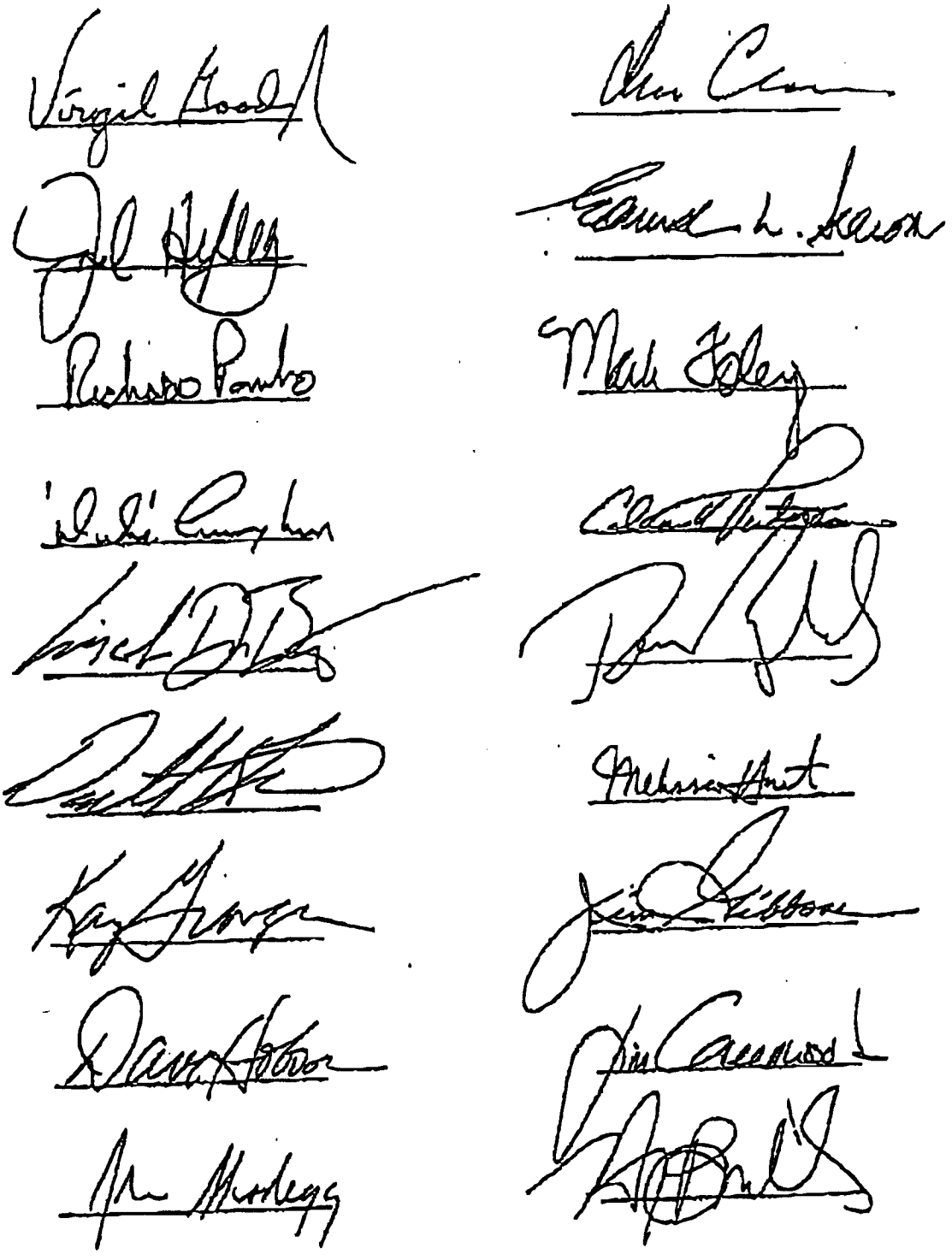

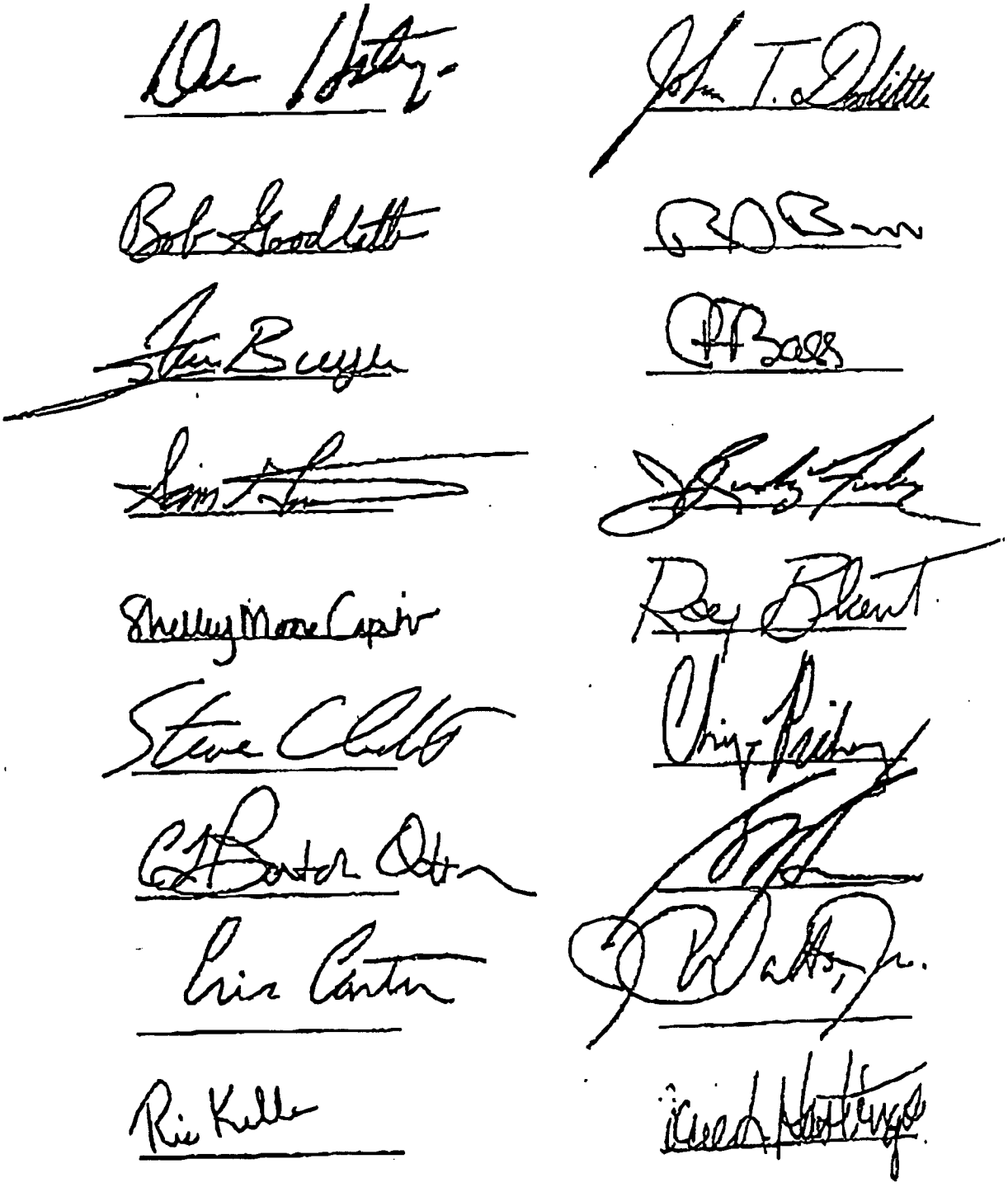

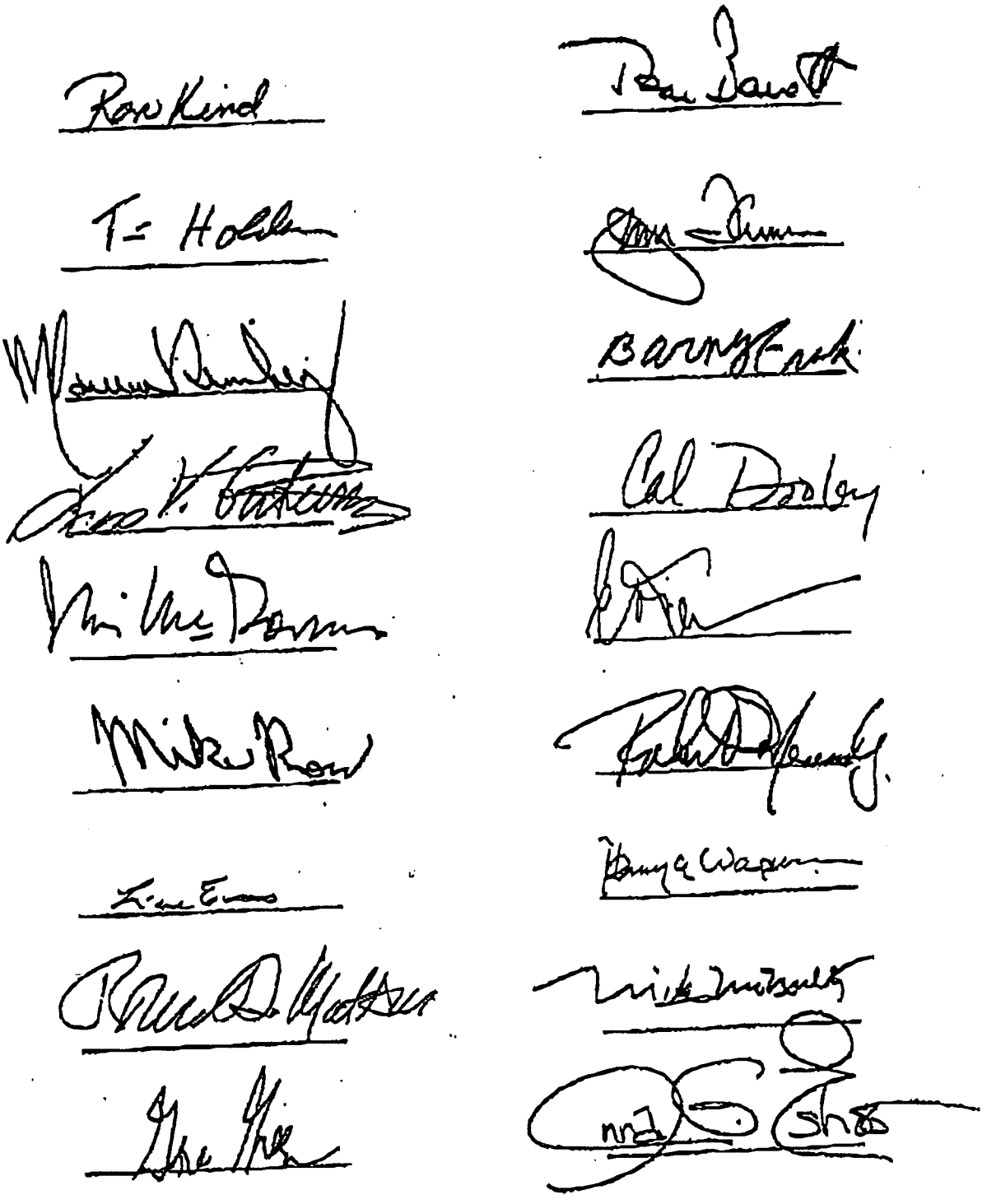

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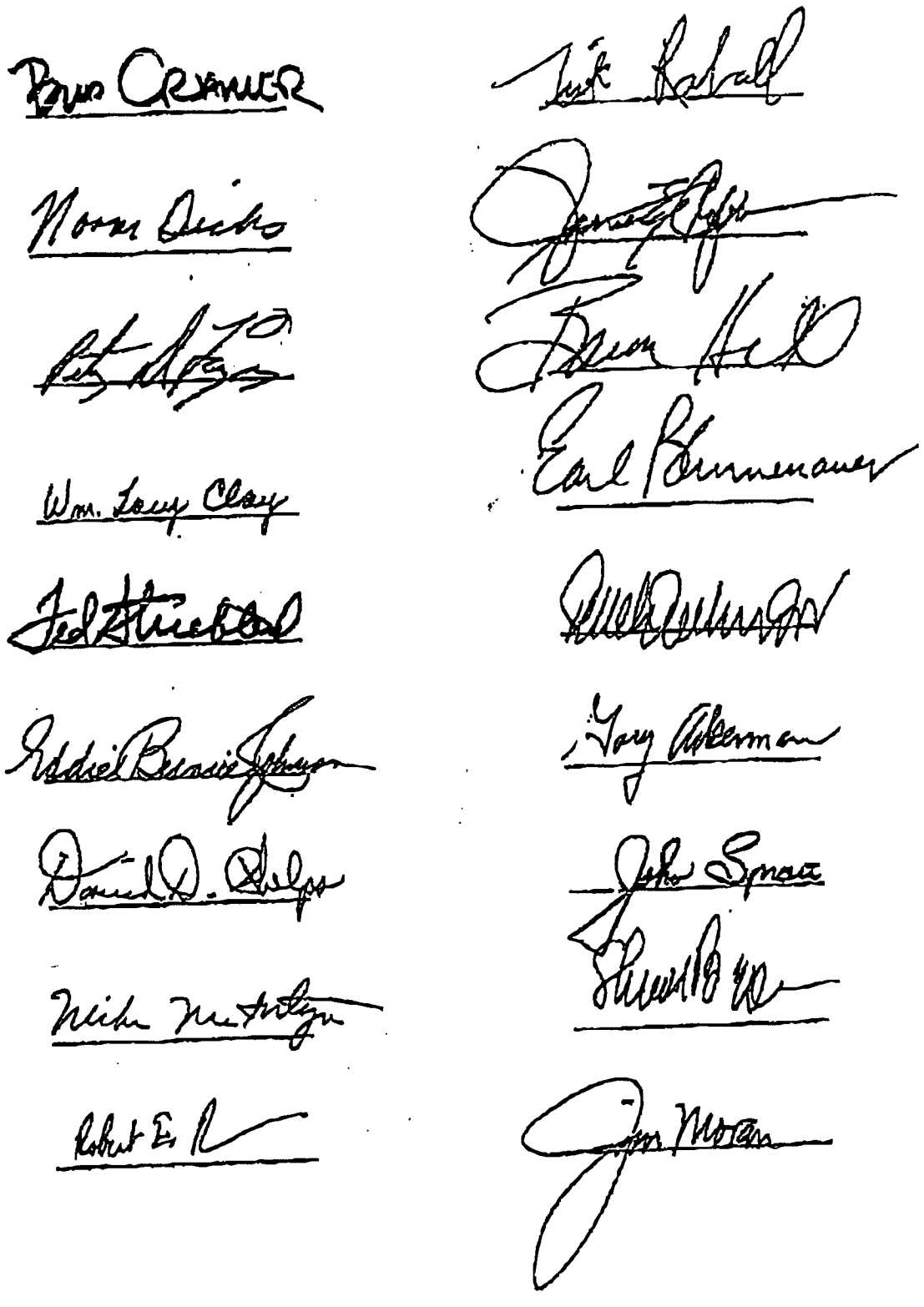
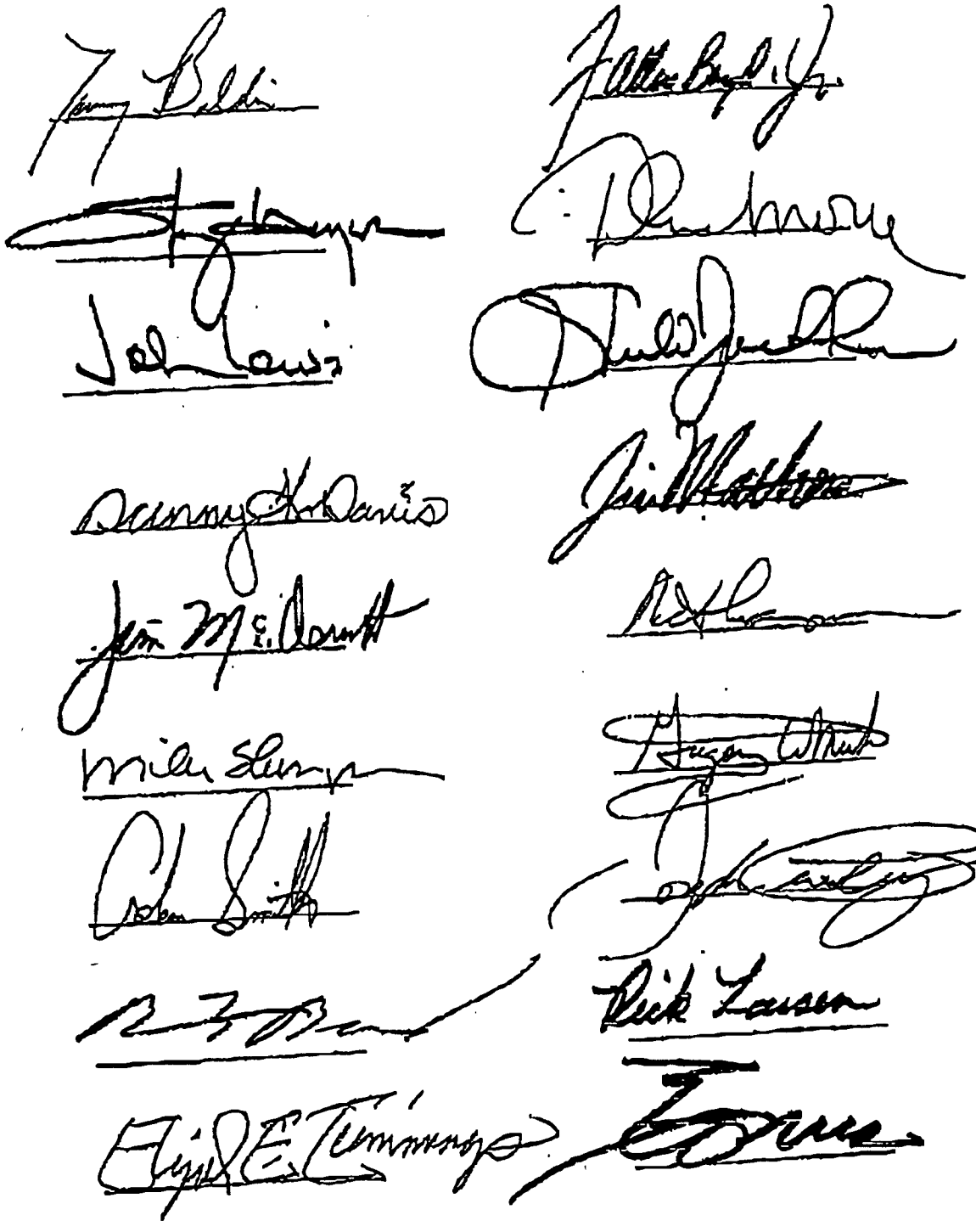
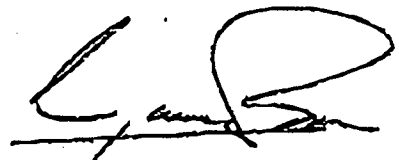
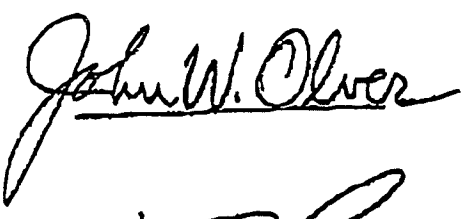
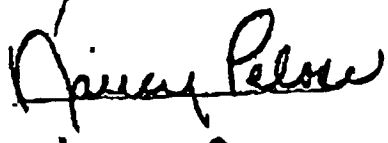


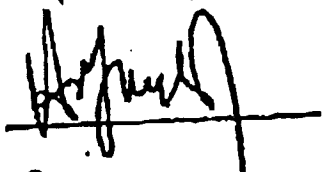


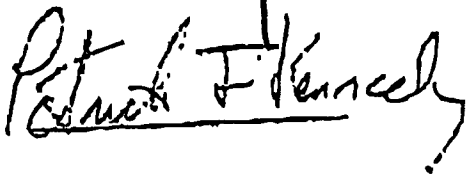
Rick Lassen

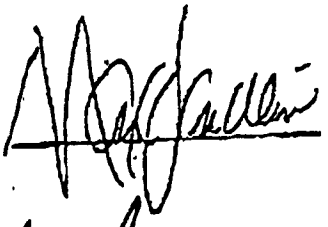


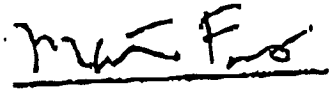


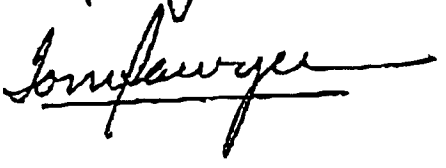












Signatories Of Letter In Favor Of Settlement

Jennifer Dunn - R
Jay Inslee - D
Dick Armey - R
Henery Hyde - R
Judy Biggert - R
Anna Eshoo - D
Stephen Horn - R
Charles Taylor - R
Charles Norwood - R
Thomas Petri - R
Sonny Callahan - R
Timothy Johnson - R
Deborah Pryce - R
Mark Green - R
Ernie Fletcher - R
Pat Toomey - R
Anne Northup - R
Phil English - R
George Nethercutt Jr. - R
Greg Walden - R
Virgil Goode - I
Joel Hefley - R
Richard Pombo - R
Mark Foley - R
Melissa Hart - R
Kay Granger - R
Jim Gibbons - R
Dave Hobson - R
Jim Greenwood - R
John Shadegg - R
Henry Bonilla - R
Alcee Hastings - D
John Doolittle - R
Bob Goodlatte - R
Bob Barr - R
Steve Buyer - R
Charlie Bass - R
Sam Farr - D
J. Randy Forbes - R
Shelley Moore Capito - R
Roy Blunt - R
Steve Chabot - R
Chip Pickering - R
C.L. Otter - R

Eric Cantor - R
J.C. Watts - R
Rick Keller - R
Doc Hastings - R
Ron Kind - D
Tim Holden - D
Maurice Hichey - D
Barney Frank - D
Louis Gutierrez - D
Cal Dooly - D
Mike Ross - D
Lane Evans - D
Henry Waxman - D
Robert Matsui - D
Michael McNulty - D
Gene Green - D
Bud Kramer - D
Norman Dicks -D
Baron Hill - D
Wm Lacy Clay - D
Earl Blumenauer - D
Ted Strickland - D
Eddie Bernice Johnson - D
Gary Ackerman - D
David Phelps - D
John Spratt - D
Mike McIntyre - D
Jim Moran - D
Tammy Baldwin - D
Allen Boyd - D
Steny Hoyer - D
John Lewis - D
Jim Matheson - D
Jim McDermott - D
Rick Larsen - D
Gregory Meeks - D
Elijah Cummings - D
James Barcia - D
John Olver - D
Nancy Pelosi -D
Bill Delahunt - D
Patrick Kennedy - D
Martin Frost - D
Tom Sawyer - D

EXHIBIT 10

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA Plaintiff, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1232 (CKK) Filed: January 24, 2002
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Pre-hearing Conference

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF THE MOTION OF RELPROMAX ANTITRUST INC. FOR LIMITED PARTICIPATION AS AN AMICUS CURIAE AND FOR AN EXTENSION OF TIME

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA Plaintiff, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1232 (CKK) Filed: January 24, 2002
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Pre-hearing Conference

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF THE MOTION OF RELPROMAX ANTITRUST INC. FOR LIMITED PARTICIPATION AS AN AMICUS CURIAE AND FOR AN EXTENSION OF TIME

I. INTRODUCTION

The Antitrust Procedures and Penalties Act (Tunney Act) was signed on December 21, 1974, to remedy one of the many abuses of power which led to the adoption of the second of three Articles of Impeachment of the President by the Committee on the Judiciary of the United States House of Representatives on July 27, 1974, and to the only Presidential resignation in the history of our nation on August 9, 1974. The Tunney Act is not merely some procedural nicety. The Tunney Act is discussed in greater detail below (see section III.B., pp. 18-22, "The Tunney Act Was

Intended To Prevent An Abuse Of Power In The Current Situation").

Defendant Microsoft Corporation ("Microsoft") has not complied with the disclosure requirements of the Tunney Act, specifically 15 U.S.C. § 16(g), or this Court's Order dated November 8, 2001. Pursuant to 15 U.S.C. § 16(b) and (g), anyone has the statutory right to comment on the Revised Proposed Final Judgment ("RPFJ") in captioned Civil Action 98-1232 for fifty (50) days after Microsoft complies with 15 U.S.C. § 16(g). Relpromax Antitrust Inc. ("Relpromax") hereby asserts its statutory right, which is also the statutory right of all Americans, to consider for fifty (50) days a true and complete disclosure by Microsoft pursuant to 15 U.S.C. § 16(g) and then to file with the United States such written comments as it deems appropriate with respect to the RPFJ in light of the information disclosed pursuant to 15 U.S.C. § 16(g).

Accordingly, Relpromax seeks an order:

1) granting Relpromax status as an amicus curiae with the right of limited participation in proceedings so it can assist, if necessary, in obtaining, inter alia, the statutorily required (and Court ordered) disclosure;

2) compelling Microsoft to comply with the statute and the November 8, 2001, order; and,

3) extending the time for comments to provide Relpromax and all interested parties with their statutory rights.

II. FACTUAL AND PROCEDURAL BACKGROUND

From 1993 through 1996, Microsoft contributed a total of about $366,000 to federal parties and candidates.[1] Declaration of Brian Dautch ("Dautch Dec."), ¶¶ 2- 3 and Attachments 1 and 2. (A copy of the Dautch Declaration is attached hereto as Exhibit A.)

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[1] The total includes contributions directly to candidates or political action committees reported as made by individuals who listed Microsoft as an employer.

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On May 18, 1998, these civil actions were filed.

From 1997 through July 31, 2001, Microsoft contributed a total of over $6.8 million to federal parties and candidates. Dautch Dec., ¶ 2, and Attachment 1.

From 1997 through June 30, 2001, in addition to about $6.8 million in contributions Microsoft spent an additional $17.6 million on lobbyists who contacted many federal agencies and Members of the House and Senate seeking support for Microsoft's antitrust policies. Dautch Dec., ¶¶ 2, and 8-42 and Attachments 1, and 9-43. Given that Microsoft contributed to the campaigns of 38 U.S. Senators and 124 U.S. Representatives in 2001 alone (a non-election year), it is even possible that some of the federal legislators contacted by Microsoft about its antitrust problems had received, and/or may have been seeking, Microsoft campaign contributions. Dautch Dec., ¶ 2 and Attachment 1.

On July 6, 1998, Charles F. Rule, Esq., became a registered lobbyist for Microsoft. From approximately 1986 to 1989, Mr. Rule was the Assistant Attorney General in charge of the Antitrust Division of the United States Department of Justice. Dautch Dec., ¶ 4, and Attachment 7. In 1998, Mr. Rule was a partner with the lobbying firm[2] of Covington & Burling of Washington, D.C. On July 6, 1998, Covington &Burling filed a Lobbying Registration, pursuant to 2 U.S.C. § 1603(a)(2), indicating that Mr. Rule was among the firm's "employees" who had acted or expected to act as lobbyists for Microsoft Corporation.[3] On page 2 of the Lobbying Registration, Covington &Burling reported that the lobbyists expected to lobby on issues including "[c]ompetition matters affecting

---

[2] See 2 U.S.C. § 1602(9).

[3] The Lobbying Registration (dated June 29, 1998) is known as Form LD-1 which is required to be filed by 2 U.S.C. § 1603 (Section 4 of the Lobbying Disclosure Act of 1995). The Lobbying Registration was filed with the Office of the Clerk of the U.S. House of Representatives. A copy of this Lobbying Registration is Attachment 4 to the Dautch Dec.

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computer industry software."

On August 12, 1999, Covington & Burling filed a mid-year 1999 Lobbying Report (Form LD-2) indicating that for the period from January 1, 1999, through June 30, 1999, the firm received $40,000 from Microsoft for lobbying.[4] On page 6 of the form, Covington & Burling reported that Charles F. Rule lobbied the U.S. House of Representatives and the U.S. Senate for Microsoft on "[c]ompetition issues affecting computer software industry."

On September 28, 2001, this Court docketed an order requiring the parties to engage in intensive settlement negotiations until November 2, 2001. A copy of the order is attached hereto as Exhibit B.

From on or about October 1, 2001, to November 6, 2001, according to written unsworn testimony by lobbyist Rule, he was one of the principal representatives for Microsoft in the negotiations with respect to the RPFJ. Dautch Dec., ¶ 4 and Attachment 3.

On November 6, 2001, the United States and Microsoft filed a Stipulation and attached form of Revised Proposed Final Judgment. The Stipulation was signed on behalf of the United States by Charles A. James, Assistant Attorney General in charge of the Antitrust Division of the United States Department of Justice.[5] (A copy of the Stipulation is attached hereto as Exhibit C.) In the Stipulation, Microsoft agreed to make the disclosure required by 15 U.S.C. § 16(g). Stipulation, ¶ 3.

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[4] The Lobbying Report (dated August 10, 1999) is on a form known as Form LD-2 which form is required to be filed by 2 U.S.C. § 1604 (Section 5 of the Lobbying Disclosure Act of 1995). The Lobbying Report was filed with the Secretary of the United States Senate. The Lobbying Report is Attachment 23 to the Dautch Dec.

[5] The Stipulation was also signed on behalf of certain plaintiffs in the companion Civil Action No. 98-1233 (i.e., the States of Illinois, Kentucky, Louisiana, Maryland, Michigan, New York, North Carolina, Ohio, and Wisconsin) (hereinafter referred to as "Settling States").

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On November 8, 2001, this Court ordered Microsoft to make the disclosure required by 15 U.S.C. § 16(g) "within ten days of the publication of the proposed Final Judgment in the Federal Register." (A copy of the Court's Order dated November 8, 2001, is attached hereto as Exhibit D.)

On November 15, 2001, lobbyist Charles F. Rule, Esq., apparently attempted to become a counsel of record for Microsoft in Civil Action No. 98-1232 pending before this Court. On November 15, 2001, a document titled "Notice Of Entry Of Appearance" for Charles F. Rule was filed with this Court and is recorded as electronic docket entry number 29 in Civil Action No. 98-1232. (A copy of the Notice Of Entry Of Appearance is attached hereto as Exhibit E.) According to the court docket for Civil Action No. 98-1232, the Notice Of Entry Of Appearance for Mr. Rule was signed and filed by Bradley Smith and not by Mr. Rule. According to the official docket, no document filed on behalf of Microsoft in this civil action (or Civil Action No. 98-1233) from November 15, 2001, through January 18, 2002, has been signed by Mr. Rule on behalf of Microsoft.[6]

On November 16, 2001, an item appeared on the front page of The Wall Street Journal which item stated in full:

> "LEGAL LOOPHOLE: Microsoft tries to shield its top Washington lawyer, Charles F. Rule, from having to reveal some contacts with the administration before he negotiated the company's controversial antitrust settlement. He was formally named a counsel of record yesterday, exempting him from disclosures otherwise demanded under a 1974 law requiring court review of antitrust deals."

---

[6] There is no indication in the electronic docket, which is the only docket available for this stage of Civil Action No. 98-1232, that Mr. Rule has signed any pleading described in Rule 7(a), F.R.Civ.P., in ink and then caused the document to be filed electronically by someone else with the Court.

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(A copy of the item from The Wall Street Journal, November 16, 2001, page 1, is Attachment 5 to the Dautch Dec.)

On November 28, 2001, the RPFJ was published in the Federal Register along with a copy of a document titled "Competitive Impact Statement" which was filed with this Court on November 15, 2001.

On December 10, 2001, Microsoft filed Defendant Microsoft Corporation's Description Of Written Or Oral Communications Concerning The Revised Proposed Final Judgment And Certification Of Compliance Under 15 U.S.C. § 16(g) ("Microsoft's Description"). (A copy of Microsoft's Description is attached hereto as Exhibit F.) The Description purported to reveal "'any and all written or oral communications by or on behalf of" Microsoft 'with any officer or employee of the United States concerning or relevant to'" the RPFJ with the exception only of "communications made by **counsel of record** alone with the Attorney General or the employees of the Department of Justice alone [emphasis added]." Microsoft Description, pp. 1-2. Microsoft's Description reveals only: 1) that unnamed "counsel for Microsoft" (n.b. as opposed to "counsel of record for Microsoft") met with plaintiffs' representatives and mediators from September 27, 2001, through November 6, 2001, and that a Mr. William Poole of Microsoft participated in some of the meetings from October 29, 2001, through November 2, 2001; and, 2) that at an October 5, 2001, meeting, technical questions were discussed by Ms. Linda Averett, and Messrs. Michael Wallent, Robert Short, and Chad Knowlton (all of Microsoft) with plaintiffs' representatives and plaintiffs' technical expert Professor Edward Felten. Microsoft certified that with the submission of the Microsoft Description, Microsoft "has complied with the requirements of 15 U.S.C. § 16(g) and that this submission is a true and complete description of such communications known to Microsoft." Microsoft's Description was electronically signed by John Warden, Esq., of the law firm of Sullivan

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& Cromwell. The name of Charles F. Rule appears on the document apparently as Counsel for Microsoft. There is no signature line on the document for Mr. Rule's signature. Other than the appearance of Mr. Rule's name well below and to the left of Mr. Warden's name, there is no mention of Mr. Rule by name in the Microsoft Description or of any communications Mr. Rule had on behalf of Microsoft with any officer of employee of the United States concerning or relevant to the RPFJ (for example, oral or written communications or promises during the course of the intensive month-long negotiations which led to the RPFJ or drafts of proposed language for the RPFJ).

On December 12, 2001, Mr. Rule appeared (along with Assistant Attorney General Charles A. James and others) and submitted written testimony (not under oath) on behalf of Microsoft concerning the RPFJ before the Committee on the Judiciary of the United States Senate. Dautch Dec., ¶ 4, Attachment 3. In this testimony concerning the captioned civil actions, Mr. Rule (referring to the RPFJ as "PFJ") stated (p. 1, sentences 3-4):

> "As this committee is aware, I am counsel to Microsoft in the case [n.b. Civil Action Nos. 98-1232 and 98-1233] and was one of the principal representatives for the company in the negotiations that led to the proposed consent decree. The PFJ was signed on November 6th after more than a month of intense, around-the-clock negotiations with the Department and representatives of all the plaintiff states."

III. ARGUMENT

A. THE TUNNEY ACT REQUIRES FULL DISCLOSURE BY MICROSOFT

The relevant portions of the Tunney Act are now codified as Title 15 U.S.C. § 16(b)-(h).

The Tunney Act applies to the current proposal for a consent judgment (RPFJ) by the United States in captioned Civil Action No. 98-1232 which was brought by the United States under the

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antitrust laws. 15 U.S.C. § 16(b). To cast sunlight on any potential abuse of power, to provide the public with information necessary both to understanding the full context of the RPFJ and to providing as insightful comments as possible (as allowed by 15 U.S.C. § 16(d)), and to provide the Court with information the Court must have prior to determining whether entry of the RPFJ is in the public interest (as required by 15 U.S.C. § 16(e)), Microsoft must make the disclosures required by 15 U.S.C. § 16(g) which provides in full that [emphasis added below]:

> "Not later than 10 days following the date of any proposal for a consent judgment under subsection (b) of this section, each defendant shall file with the district court a description of any and all written or oral communications by or on behalf of such defendant, including any and all written or oral communications on behalf of such defendant, or other person, with any officer or employee of the United States concerning or relevant to such proposal, except that any such communications made by **counsel of record alone** with the Attorney General or the employees of the Department of Justice alone shall be excluded from the requirements of this subsection. Prior to the entry of any consent judgment pursuant to the antitrust laws, each defendant shall certify to the district court that the requirements of this subsection have been complied with and that such filing is a true and complete description of such communications known to the defendant or which the defendant reasonably should have known."

Both the Tunney Act and this Court's November 8, 2001, Order setting forth the schedule to be followed to comply with the Tunney Act in this case clearly grant the public fifty (50) days to prepare and file comments on the RPFJ after defendant's true and complete disclosure of all communications specified by 15 U.S.C. § 16(g) .

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As is shown below, the Microsoft Description of December 10, 2001, did not meet the requirements of 15 U.S.C. § 16(g).

There are at least five broad categories of communications which should have been disclosed: 1) oral or written communications by or on behalf of Mr. Rule acting in any capacity for Microsoft; 2) oral or written communications in Mr. Rule's presence (these communications were not made by counsel of record alone); 3) oral or written communications which may have induced the Deputy Chief of Staff to the Attorney General of the United States (David Israelite, who recused himself from any involvement with Microsoft matters due to a conflict of interest) to place a predawn telephone call on October 9, 2001, to a lobbyist for a Microsoft competitor complaining about the competitor's support for the retention of independent private counsel by the States suing Microsoft in Civil Action No. 98-1233; 4) oral or written communications or promises by Microsoft lobbyists (other than Mr. Rule) or Microsoft personnel to officers or employees of the United States; and, 5) communications made at Microsoft's request or suggestion to officers or employees of the United States (e.g., communications by Members or employees of either House of Congress to officers or employees of the Executive Branch).

1. Mr. Rule's Undisclosed Conversations Prior to November 15, 2001 Are Not Exempted from Disclosure

a. Mr. Rule Was Not Counsel Of Record For Microsoft Prior to November 15, 2001

The statute, 15 U.S.C. § 16(g), exempts from disclosure only two types of oral or written communications with any officer or employee of the United States. First, the statute exempts communications between counsel of record and the Attorney General alone (i.e., outside the presence of Microsoft personnel and other Justice Department officers or employees). Second, the statute exempts communications between counsel of record and employees of the Department of

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Justice alone (i.e., outside the presence of Microsoft personnel and non-employees of the Justice Department). The statute does not provide for a lobbyist (or other person who is not counsel of record) to conduct negotiations with the Attorney General and/or Justice Department employees and then, after reaching agreement on a consent judgment, convert from a lobbyist into a counsel of record in order to shield from disclosure communications and negotiations conducted when he was not counsel of record.

At a minimum, the term "officer or employee" in 15 U.S.C. § 16(g) should include any officer or employee of the Executive Branch. It is clear that offices and employees of the Executive Branch are within the scope of the statute because the two classes of exclusions are of officers or employees of the Executive Branch (i.e., the Attorney General and employees of the Department of Justice). Arguably, the term "officer or employee" in 15 U.S.C. § 16(g) could also include any "officer or employee" of the Legislative Branch. The precise scope of the term "officers and employees" within the meaning of 15 U.S.C. § 16(g) appears to be a matter of first impression in this Court. Given the control of the Justice Department budget by the Congress, the importance of disclosing communications by Microsoft with Members of Congress or their staff concerning or relating to the RPFJ is manifest. In any event, the statute makes clear that any communication concerning or relating to the RPFJ made on behalf of Microsoft (whether by Microsoft, a Senator, or anyone else) to an Executive Branch officer or employee must be disclosed under 15 U.S.C. § 16(g).

Mr. Rule was not a counsel of record prior to November 15, 2001. Accordingly, any oral or written communications made by him, or on his behalf, concerning or relevant to the RPFJ to any officer or employee of the United States must be disclosed. Clearly, communications made in the negotiations which resulted in the RPFJ both concern the RPFJ and are relevant to the RPFJ.

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Mr. Rule was the Assistant Attorney General in charge of the Antitrust Division long after the Tunney Act became the law. While the disclosure requirements of 15 U.S.C. § 16(g) would apply to Mr. Rule's client even if Mr. Rule were totally unfamiliar with antitrust law, the disclosure requirements should be applied strictly given that Mr. Rule was the principal law enforcement officer of the United States charged with enforcing this precise statute for about three (3) years.

If Mr. Rule's testimony to the effect that he was a principal negotiator on behalf of Microsoft of the RPFJ is accurate, then there are clearly undisclosed communications made by Mr. Rule or in his presence.

Typically, a principal representative in negotiations would have made oral comments to the negotiators for the United States. Further, the principal negotiator would have submitted written drafts of language (whether in electronic, magnetic, or paper form) to be used in the RPFJ.

Also, there is the matter of Lobbyist Rule's contacts with the Administration which contacts were reported by The Wall Street Journal. What precisely does Microsoft want to conceal? Why does Microsoft want to conceal these communications? Discovery (or a true and complete disclosure under 15 U.S.C. § 16(g)) is needed to provide the American people and this Court with the answer to these questions.

b. Mr. Rule Was Not Counsel Of Record For Microsoft Even After November 15, 2001

If Microsoft's position is that Mr. Rule's communications prior to and during settlement negotiations did not have to be disclosed because on the date the Microsoft Description was filed Mr. Rule was a counsel of record, that position is both untenable and, as discussed above, contrary to the plain language of the statute.

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Local Civil Rule 83.6(a) governs the process by which an attorney becomes a counsel of record and provides in full that:

> "An attorney eligible to appear may enter an appearance in a civil action by signing any pleading described in Rule 7(a), Federal Rules of Civil Procedure, or by filing a written notice of the entry of an appearance listing the attorney's correct address, telephone number and bar identification number."

As mentioned above, as of the date of this Memorandum, Mr. Rule has not in connection with the captioned civil actions signed any pleading described in Rule 7(a) of the Federal Rules of Civil Procedure (i.e., basically, various types of complaints and answers).

The typical written notice of entry of an appearance is signed by the attorney entering the appearance. For example, when appearances were entered by Douglas Davis, Esq., Steven Kuney, Esq., and Brendan Sullivan, Esq., each of these attorneys signed and filed a written notice of appearance containing the necessary information. (Copies of the notices of appearance for Messrs. Douglas, Kuney, and Sullivan are attached hereto as Exhibits G, H, and I, respectively.) Mr. Rule did not sign or file what purports to be his written notice of entry of appearance. The written notice attempting to enter an appearance for Mr. Rule was signed and filed by Bradley Smith, Esq., of Sullivan & Cromwell.

As noted above, Mr. Rule has not, in connection with the captioned Civil Actions, signed any pleading described in Federal Rule of Civil Procedure 7(a).

Thus, arguably Mr. Rule was not a counsel of record even when the Microsoft Description was filed on December 10, 2001. Accordingly, any oral or written communications Mr. Rule had with officers or employees of the United States concerning or relating to the RPFJ must be disclosed.

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2. The Undisclosed Conversations of Microsoft's other Lobbyists With Executive Or Legislative Branch Officials Or Employees Are Not Exempted From Disclosure

Even if Mr. Rule's testimony to the effect that he was a principal negotiator on behalf of Microsoft of the RPFJ were inaccurate and even if Mr. Rule had absolutely no oral or written communications at any time of any type, kind, or description with any officer or employee of the United States (whether in the Executive or Legislative Branch), it is still likely that there were other undisclosed oral or written communications made by or on behalf of Microsoft concerning or relevant to the RPFJ.

In addition to Mr. Rule, Microsoft has a substantial number of other inside and outside federal lobbyists who were paid on the order of $17,645,000 from 1997 through June 30, 2001.

A partial list of some known lobbying expenditures and contacts includes the following:

1. From January 1, 1999, through June 30, 2001, according to the official reports required by Section 5 of the Lobbying Disclosure Act of 1995, 2 U.S.C. § 1604, the lobbying firm of Barbour Griffith & Rogers, Washington, D.C., reported receiving $1,380,000 from Microsoft for lobbying the House and Senate concerning issues including "the Justice Department's Antitrust inquiry." Dautch Dec., ¶¶ 8-12 and Attachments 9-13.

2. The official reports show that from July 1, 1997 to June 30, 2001, the lobbying firm of Clark & Weinstock, New York, New York, received $1,480,000 from Microsoft for lobbying the House and Senate concerning issues including Microsoft's position on the Department of Justice antitrust suit against Microsoft. Dautch Dec., ¶¶ 13-19 and Attachments 14-20.

3. The official reports show that from January 1, 1998 to June 30, 1999, the

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lobbying firm of Covington & Burling received $140,000 from Microsoft for lobbying the House and Senate concerning, inter alia, competition issues affecting the computer software industry. Dautch Dec., ¶¶ 20-22 and Attachments 21-23.

4. The official reports show that from July 1, 1997, to June 30, 2001, the lobbying firm of Downey Chandler, Inc. (at times known as Downey McGrath Group), received $560,000 from Microsoft for lobbying the Office of the Vice President, the Departments of Justice, State, and Commerce, and the House and Senate concerning issues including the Department of Justice's antitrust suit against Microsoft. Dautch Dec., ¶¶ 23-30 and Attachments 24-31.

5. From July 1, 1999 to June 30, 2001, the official reports show that McSlarrow & Associates, at times known as McSlarrow Consulting, L.L.C., received $200,000 from Microsoft for lobbying the House and Senate concerning issues including competition in the software industry. Dautch Dec., ¶¶ 32-35 and Attachments 33-36.

6. From January 1, 2000 to June 30, 2000, the official report shows that Microsoft itself spent $3,340,000 on lobbying the National Security Agency, Federal Bureau of Investigation, Senate, House, the Departments of Justice, Commerce, and Defense concerning issues including competition in the software industry.[7] Dautch Dec., ¶ 36 and Attachment 37.

7. From July 1, 1997 to June 30, 2001, the official reports show that Preston Gates Ellis & Rouvelas Meeds received $1,380,000 from Microsoft for lobbying the White House, the Vice President, the National Security Agency, the Central Intelligence Agency, the National

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[7] On November 5, 1999, this Court entered Findings of Fact adverse to Microsoft. U.S. v. Microsoft, 84 F.Supp.2d 9 (D.D.C. 1999). On April 3, 2000, this Court entered Conclusions of Law holding Microsoft to be in violation of the antitrust laws. U.S. v. Microsoft, 87 F.Supp.2d 30 (D.D.C. 2000). On June 7, 2000, this Court entered an order requiring Microsoft to devise a plan to split itself into an operating systems business and an applications business. U.S. v. Microsoft, 97 F.Supp.2d 59 (D.D.C. 2000).

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Security Council, the Office of Science and Technology Policy, the Federal Bureau of Investigation, the U.S. Trade Representative, the National Economic Council, the Office of Management and Budget, the Departments of Justice and Commerce, and the House and Senate concerning issues including competition in the software market. Dautch Dec., ¶¶ 37-42 and Attachments 38-43.

The massive amount of money spent on lobbying raises a number of issues relevant to the Tunney Act disclosure Microsoft should have made including, but not limited to, those mentioned below.

First, given that Microsoft was ably represented by accomplished in-house counsel and the distinguished law firm of Sullivan & Cromwell upon whom all opposing parties were required to serve all documents pursuant to Federal Rule of Civil Procedure 5, why was it necessary to spend over $1.3 million for Barbour Griffith & Rogers to monitor the same civil action? Where did the money really go? What did the money really buy? Did Barbour Griffith & Rogers discuss the Microsoft antitrust litigation with any officer or employee of the United States while the RPFJ was being negotiated?

Second, as of June 30, 2001, Microsoft, its employees, and its outside lobbyists had spent upwards of $20,000,000 over several years lobbying, and where possible making campaign contributions, to many officers and employees of the United States. It is difficult to believe that when negotiations intensified and were conducted around-the-clock[8] in October, 2001 not one of the legions of Microsoft lobbyists in whom the company invested millions made a single call to any officer or employee of the United States concerning or relevant to the RPFJ. In particular, it is difficult to imagine that no United States Representative and no United States Senator was asked

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[8] Statement of Charles F. Rule to the Committee on the Judiciary, US. Senate, December 12, 2001 (Dautch Dec., Attachment 3, ¶ 2).

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to contact the Executive Branch in support of Microsoft.

3. Additional Undisclosed Conversations May Have Caused A PredawnTelephone Call From A Senior Aide To The Attorney General To A Lobbyist

The New York Times of November 2, 2001, reported ("States Biding for Time to Study Microsoft Settlement Plan" by Stephen Labaton, pp. C1 and C4) that:

> "Some of Microsoft's largest competitors voiced bitter disappointment about the terms of the proposed deal and asserted that the company had used its political influence with a Republican administration to try to quickly put an end to the case."
>
> "The rivals said that during court hearings that will be required on the proposed settlement, they intended to provide evidence of what they say was an improper discussion between a senior aide to Attorney General John Ashcroft who had been a top official in the Republican Party and a Republican lobbyist for AOL-Time Warner that demonstrated Microsoft's political muscle. In a statement issued today, Representative John Conyers Jr., Democrat of Michigan, also indicated that he would be examining that incident, word of which has been circulating widely in recent days among lawyers, lobbyists and executives following the case."
>
> "The aide to Mr. Ashcroft, David Israelite, had been the political director of the Republican National Committee, which received hundreds of thousands of dollars from Microsoft during the 2000 presidential campaign. Mr. Israelite, now Mr. Ashcroft's deputy chief of staff, has recused himself from any involvement in the Microsoft antitrust case because he owns 100 shares of Microsoft stock."
>
> " The lobbyist involved in the discussion was said to be Wayne Berman, who is also a top Republican fundraiser."

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"According to the notes of a person briefed about the conversation on Oct. 9, the day it is said to have occurred, Mr. Israelite called Mr. Berman."

" 'Are you guys behind this business of the states hiring their own lawyers in the Microsoft case?' Mr. Israelite asked Mr. Berman in the predawn conversation, according to the notes. 'Tell your clients we wouldn't be too happy about that.' "

" . . . According to people who were later briefed on the conversation by an AOL executive, Mr. Israelite then complained that AOL, a leading Microsoft rival, had been trying to 'radicalize' the states to oppose a settlement."

(A copy of the article from The New York Times of November 2, 2001, is Attachment 8 to the Dautch Declaration.)[9]

Given the impact of the RPFJ on an important sector of the economy and the over-riding importance of maintaining public confidence in the integrity of both public officials and the judicial process, it would be reasonable to inquire of both Messrs. Israelite and Berman either at a hearing before the Court or at a deposition whether any conversation such as that set forth in the article published on November 2, 2001, by The New York Times ever occurred. The conversation, if it occurred, was not privileged. Because Mr. Israelite is recused from taking official action with respect to Microsoft, the inquiry would also not require any intrusion into the reasons for any of his authorized official actions. If the conversation occurred at the request of Microsoft, this Court and

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[9] In addition to the Microsoft stonewall, the Justice Department is apparently stonewalling the ranking minority member of the House Judiciary Committee, Rep. John Conyers, Jr., concerning the reported Israelite-Berman predawn conversation. On Nov. 6, 2001, Rep. Conyers wrote a letter to the Attorney General inquiring about the alleged conversation. (A copy of a press release containing the text of the letter from Rep. Conyers is Attachment 44 to the Dautch Dec.) As far as can be determined, no response had been received by Rep. Conyers from the Attorney General as of January 22, 2002.

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the public have a statutory right to know that fact.

B. THE TUNNEY ACT WAS INTENDED TO PREVENT AN ABUSE OF POWER IN THE CURRENT SITUATION

1. The Lawful $200,000 ITT Pledge Related To One Of The Impeachable Abuses Of Power In The Early 1970's Was Equivalent To About $650,000 In 2001 Dollars Which Amount Is Vastly Exceeded By Over $23 Million Microsoft Has Lawfully Spent On Federal Campaign Contributions and Lobbying Since 1997

a. The ITT Litigation and the Kleindienst Nomination

In 1969, the United States filed three civil antitrust actions against the International Telephone and Telegraph Corporation ("ITT") challenging the acquisition by ITT of three corporations (Canteen Corporation, Hartford Fire Insurance Company, and Grinnell Corporation). Statement Of Information, Hearings Before The Committee On The Judiciary House Of Representatives, Ninety-Third Congress, Second Session, Pursuant To H. Res. 803, Book V, Part I, Department Of Justice ITT Litigation - Richard Kleindienst Nomination Hearings ("Statement Of Information" or "SOI"), pages 3-4. (A copy of the basic statement of facts in the Statement Of Information is attached as Attachment 45 to the Dautch Declaration.)

Attorney General John Mitchell was recused because his former law firm had represented an ITT subsidiary; Deputy Attorney General Richard Kleindienst acted as Attorney General in connection with the litigation and sought and received approval from Counsel to the President John Ehrlichman before filing the first civil action. SOI, p. 3.

On December 31, 1970, ITT won a judgment in the Grinnell case after a trial. SOI, p. 13.

From April to June, 1971, a substantial amount of political pressure was applied by the President and his assistants to Deputy Attorney General Kleindienst and Assistant Attorney General

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in charge of the Antitrust Division Richard McLaren to convince them to forego an appeal and settle the ITT cases. SOI, pp. 17-31.

On July 21, 1971, ITT-Sheraton pledged up to $200,000 to bring the 1972 Republican National Convention to San Diego, California. SOI, p. 32. There is no suggestion that this contribution by itself was illegal.

On July 31, 1971, a settlement of the ITT litigation was announced. SOI, p. 34.

On February 15, 1972, the President nominated Richard Kleindienst to be Attorney General. SOI, p. 36.

On February 29, March 1 and March 3, 1972, three columns by columnist Jack Anderson were published alleging a connection between the ITT-Sheraton pledge and the ITT antitrust settlement and alleging the involvement of Messrs. Mitchell and Kleindienst. SOI, p. 39. (Copies of the Anderson columns and a memorandum allegedly written by an ITT lobbyist, Ms. Dita Beard, all of which were included in the evidentiary material supporting the Statement Of Information are attached as Attachment 46 to the Dautch Declaration.) As a result of publication of the first two Anderson columns, Mr. Kleindienst asked that his confirmation hearings be re-opened. SOI, p. 39.

At the hearings in 1972 on his nomination to be Attorney General, Mr. Kleindienst denied talking to all the President's men other than casually about the ITT matter and also denied receiving any suggestions from them about the action the Justice Department should take in the ITT cases. SOI, p. 42.

On June 12, 1972, Richard Kleindienst became Attorney General. SOI, p. 61.

On May 16, 1974, Richard Kleindienst pleaded guilty to one count of refusing or failing fully to respond to questions propounded to him by the Senate Committee on the Judiciary during the hearings in 1972 on his nomination to be Attorney General. SOI, p. 66.

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On August 9, 1974, the President resigned.

b. The Impeachment Resolution

The second Article of Impeachment (adopted by a vote of 28-10 in the House Judiciary Committee on July 27, 1974) charged the President with using the powers of his office in violation of his constitutional oath, disregarding his constitutional duty to take care that the laws be faithfully executed, and repeatedly engaging in five (5) types of conduct violating the constitutional rights of citizens, impairing the due and proper administration of justice and the conduct of lawful inquiries, or contravening the laws governing agencies of the executive branch and the purpose of those agencies.

The specification of the fourth type of allegedly improper conduct stated in full with respect to the President that (emphasis added):

> "He has failed to take care that the laws were faithfully executed by failing to act when he knew or had reason to know that his close subordinates endeavoured to impede and frustrate lawful inquiries by duly constituted executive, judicial and legislative entities concerning the unlawful entry into the headquarters of the Democratic National Committee, and the cover-up thereof, **and concerning other unlawful activities including those relating to the confirmation of Richard Kleindienst as Attorney General of the United States**, the electronic surveillance of private citizens, the break-in into the offices of Dr. Lewis Fielding, and the campaign financing practices of the Committee to Re-elect the President."

House Report 93-1305, August 20, 1974, pp. 139-183.

During the Senate debate preceding adoption of the Antitrust Procedures and Penalties Act

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(the Tunney Act), Senator Tunney said:

> "The genesis of this legislation came during the hearings held by the Senate Judiciary Committee on the nomination of Richard Kleindienst, the hearings which quickly became known as the ITT hearings, because the major issue involved allegations that a massive behind-closed-doors campaign resulted in halting the Justice Department's prosecution of the ITT case and its hasty settlement favorable to the company. During these hearings, I became concerned with the apparent weaknesses of the consent decree process, which could allow this kind of corporate pressures to be exercised." Cong. Rec. Senate, December 9, 1974, page 38585.

c. Since 1997 Microsoft Has Spent Over $23 Million On Federal Lobbying And Campaign Contributions

As mentioned above, since 1997, Microsoft has spent in excess of $23,000,000 on federal campaign contributions and lobbying with substantial effort devoted to lobbying concerning the captioned civil actions. The ITT pledge of $200,000 in1971 is the equivalent of about $650,000 in 2001 dollars. Dautch Dec., ¶ 43.

There is no suggestion that any of Microsoft's expenditures by themselves are illegal.

In the instant matter, the Justice Department won at trial and on appeal. The Department has agreed to what some have characterized as a "sweetheart" settlement negotiated behind closed doors by a lobbyist for Microsoft which, so far, has not revealed information the Tunney Act (and this Court's order) require it to reveal.

2. The Tunney Act Was Intended To Protect The Consuming Public From The Type Of Forces At Work Today In Connection With The RPFJ

The point is not that an unfortunate chapter in our nation's history has repeated itself or might repeat itself precisely but rather that the same type of economic forces at work in connection

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with the ITT litigation are at work today. In the United States, the presence of strong economic forces tends to bring about the involvement of political forces.

In 2001 dollars, the amount ITT pledged to buy influence and access in 1971 is greatly exceeded by the amount spent by Microsoft in the last few years on lobbying and campaign contributions. The impact ITT had on the 1971 economy while substantial pales in comparison to the impact Microsoft and its products have on the 2002 economy. The forces at work today may be stronger than those in play thirty years ago.

The problem was aptly summarized in the following quotations (by Senator Tunney during Senate debate) from testimony before the Senate Judiciary Committee by United States Circuit Judge J. Skelly Wright, Chief Judge of the United States Court of Appeals for the District of Columbia Circuit:

> "By definition, antitrust violators wield great influence and economic power. They often bring significant pressure to bear on government, and even on the courts, in connection with the handling of consent decrees. The public is properly concerned whether such pressure results in settlements which might shortchange the public interest. . . . Because of the powerful influence of antitrust defendants and the complexity and importance of antitrust litigation, the public reasonably asks in many instances whether in reaching a settlement, the government gave up more than it need have or should have. Some response to this public concern is desirable, in my opinion, not only to ensure that the compromise struck by the Justice Department is fair from the public's point of view, but also to alleviate fears which, even if unfounded, are unhealthy in and of themselves."

Cong. Rec. Senate, July 18, 1973, pp. 24597-24598.

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C. ON THE PRESENT RECORD THE UNITED STATES WILL NOT BE ABLE TO COMPLY WITH THE COURT ORDER OF NOVEMBER 8, 2001, REQUIRING CERTIFICATION BY THE UNITED STATES OF COMPLIANCE WITH TUNNEY ACT PROCEDURES

On November 8, 2001, this Court ordered the United States to file, when appropriate, a certification of compliance with the Antitrust Procedures and Penalties Act (Tunney Act). Given the apparent failure of Microsoft to comply with the Tunney Act and the United States' knowledge of this apparent compliance failure, it would appear to be difficult, if not impossible, for the United States to provide the required certification in good faith. This difficulty provides another reason for the Court to order compliance by Microsoft with the terms of 15 U.S.C. § 16(g).

D. THE COURT SHOULD AGAIN ORDER FULL DISCLOSURE, ALLOW FULL DISCOVERY OF THE NECESSARY FACTS, AND EXTEND THE TIME FOR COMMENTS OR TERMINATE CONSIDERATION OF THE RPFJ

Even if Microsoft chooses to amend the Microsoft Description in an attempt to comply with a second court order (after defying the first court order) with respect to 15 U.S.C. § 16(g), the Court should consider allowing limited discovery by Relpromax Antitrust Inc., as an amicus curiae, into the communications revealed and into the issue of whether all communications were in fact revealed in order to avoid the prospect that Microsoft's initial reticence infects a disclosure which purports to be in accord with the terms of a second disclosure order.

Alternatively, in the interests of judicial economy, the Court may terminate all consideration of the RPFJ at this time and deny entry of the RPFJ on the grounds that the Court has not been provided with the information the statute requires the defendant to provide as a condition precedent to approval of a consent judgment in these circumstances.

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E. IF THE COURT DOES NOT ORDER FULL DISCLOSURE NOW, ENTRY OF THE RPFJ COULD BE REVERSED ON APPEAL FOR THAT REASON ALONE; HOWEVER, IF THE COURT ORDERS ADDITIONAL DISCLOSURE AND THEN ENTERS THE RPFJ, THERE WOULD BE A LOWER POSSIBILITY OF REVERSAL DUE TO DEFENDANT'S FAILURE TO COMPLY WITH THE DISCLOSURE PROVISIONS OF THE TUNNEY ACT

Given the procedural history of this case (i.e., Judges Sporkin and Jackson were removed from this case or its predecessors by the Court of Appeals), it would indeed be unfortunate if the Court were to allow Microsoft to withhold information to which the public has a statutory right, determine that entry of the RPFJ is in the public interest, and then be reversed on appeal due to the failure of Microsoft to comply with 15 U.S.C. § 16(g) (necessitating re-commencement of the Tunney Act procedures with respect to the current RPFJ several years from now). Alternatively, if the Court were to order full compliance with the Tunney Act now, the delay would be minimal (on the order of sixty (60) days) and (assuming Microsoft made a true and complete disclosure) any decision to enter the RPFJ could not be reversed due to Microsoft's failure to comply with its disclosure obligations under the Tunney Act.

F. RELPROMAX AS THE ONLY PARTY OR PROPOSED AMICUS CURIAE WITH AN EXPRESSED INTEREST IN OBTAINING A FULL DISCLOSURE FROM MICROSOFT SHOULD BE GRANTED THE RIGHT TO LIMITED PARTICIPATION AS AN AMICUS CURIAE IN THE TUNNEY ACT PROCEEDINGS

Clearly, Microsoft, the United States, and the Settling States have little or no interest in inquiring into the communications Microsoft should have disclosed pursuant to 15 U.S.C. § 16(g) or into the adequacy of the Microsoft Description. Their only interest (explicitly expressed so far) is in obtaining Court approval of the RPFJ as fast as possible. In particular, the United States Department of Justice presumably already has knowledge, at a minimum, of certain undisclosed communications made to the Justice Department by Microsoft lobbyist Charles F. Rule from on or

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before October 1, 2001, through November 6, 2001.

The Litigating States[10] (the governments which did not settle in Civil Action No. 98-1233) are not parties to Civil Action No. 98-1232. While they and their citizens of course have Tunney Act rights, the Litigating States have, so far, expressed little interest on the record of Civil Action No. 98-1232 in obtaining for their citizens' consideration during the comment period the information from Microsoft to which the public is entitled under the Tunney Act.

Given his responsibility for the Antitrust Division and his signature on the Stipulation filed with the RPFJ on November 6, 2001, the Assistant Attorney General in charge of the Antitrust Division knew, or in the exercise of reasonable care should have known, that lobbyist Rule was one of Microsoft's principal representatives during the negotiations which led to the RPFJ and was not, at the time, counsel of record for Microsoft. As far as can be determined from the public court record of this case, the United States has not exerted itself in any way to obtain a proper disclosure from Microsoft or to encourage Microsoft to amend the Microsoft Description.

The attitude of the Justice Department has changed under the leadership of Attorney General John Ashcroft.[11] The Department's attitude toward this civil action was perhaps best expressed by Assistant Attorney General James at the December 12, 2001, Senate Judiciary Committee hearing. Due to a roll call vote, Mr. James was given just a few moments for his opening remarks of the day.

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[10] The Litigating States are the District of Columbia, California, Connecticut, Florida, Iowa, Kansas, Massachusetts, Minnesota, Utah, and West Virginia.

[11] David Israelite, Mr. Ashcroft's Deputy Chief of Staff, reportedly owns 100 shares of Microsoft stock worth about $6,610 at the close of trading on January 18, 2002. Dautch Dec., ¶ 44 and Attachment 8. David Israelite recused himself from any involvement in the antitrust suit against Microsoft. The President's campaign, his Inaugural fund, Attorney General Ashcroft, and his various campaign committees received about $180,000 in contributions from Microsoft and its employees in 1999 and 2000. Dautch Dec., ¶ 2 and Attachment 1. Mr. Ashcroft has not recused himself from any involvement in the antitrust suit against Microsoft.

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The first point he chose to make was "some argue that the case never should have been filed."[12]

Another reason for the statutory requirement of fifty (50) days to consider the defendant's communications is that the significance of any individual communication in light of the RPFJ may only be apparent to one person or a few persons. The consideration time allows interested persons either to consult with others or experts or to conduct additional informal or (with the Court's approval) formal inquiries into the facts in order to be able to advise both the United States and the Court of the full implications of the disclosures in light of the RPFJ. Given the carefully crafted statutory arrangement, the Congress realized that the Court on its own can not be expected either to uncover or understand all the implications of Microsoft's communications for the RPFJ without the assistance of persons at least interested enough in the RPFJ, the rule of law, and/or the avoidance of another impeachment inquiry due to, inter alia, an abuse of the antitrust settlement power to devote their time to the public interest in this matter.

Given that Relpromax is an interested person and, in particular, interested in obtaining the information to which it has a statutory right pursuant to 15 U.S.C. § 16(g), it would be appropriate and in the public interest for the Court to enter an order, pursuant to 15 U.S.C. § 16(f)(3), in the form submitted herewith authorizing limited participation by Relpromax in proceedings before the court.

The Court has extended itself to make all of Microsoft's communications available to the entire nation by instituting electronic filing for the captioned civil actions. This means that anyone anywhere with Internet access and a PACER ("Public Access to Court Electronic Records") account is able to read Microsoft's Description of its communications concerning and relevant to the RPFJ without having to travel all the way from one end of the country to the courthouse.

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[12] The full preliminary transcript is attached as Attachment 49 to the Dautch Dec. The remarks referred to appear on page 10.

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It is now time for Microsoft to comply with the statute.

In Senate debate which preceded adoption of the Tunney Act, Sen. John Tunney quoted the words of Supreme Court Justice Louis Brandeis to sum up the meaning and purpose of the Act:

"Sunlight is the best disinfectant." [13]

REQUEST FOR ORAL HEARING

The Court may order an oral hearing on this motion pursuant to 15 U.S.C. § 16(f)(5) which provides in full that:

"In making its determination under subsection (e) of this section, the court may -

. . . (5) take such other action in the public interest as the court may deem appropriate. "

It is in the public interest that the proper statutorily required disclosure be made. It is further in the public interest that the public be allowed their statutory right to consider the full ramifications of the RPFJ for fifty (50) days after a true and complete disclosure by Microsoft of all non-exempt communications with officers or employees of the United States concerning or relevant to the RPFJ. Accordingly, pursuant to 15 USC sec. 16(f) (5), movant requests an oral hearing on this motion at the Court's earliest convenience.

Respectfully submitted

Peter Peckarsky

January 24, 2002

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Attorney for Relpromax Antitrust Inc.

[13] Cong. Rec. Senate, July 18, 1973, p. 24599.

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EXHIBIT LIST

Exhibit A	Declaration of Brian Dautch dated January 23, 2002
Exhibit B	Order docketed September 28, 2001
Exhibit C	Stipulation dated November 6, 2001
Exhibit D	Order dated November 8, 2001
Exhibit E	Notice Of Entry Of Appearance for Charles F. Rule dated November 15, 2001
Exhibit F	Defendant Microsoft Corporation's Description Of Written Or Oral Communications Concerning The Revised Proposed Final Judgment And Certification Of Compliance Under 15 U.S.C. § 16(g) dated December 10, 2001
Exhibit G	Appearance of Douglas Lee Davis dated December 12, 2001
Exhibit H	Appearance of Steven R. Kuney dated November 1, 2001
Exhibit I	Appearance of Brendan V. Sullivan, Jr. dated November 1, 2001

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EXHIBIT A

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA Plaintiff, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1232 (CKK)
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Pre-hearing Conference

DECLARATION OF BRIAN DAUTCH

1. My name is Brian Dautch. I am a law clerk for Peter Peckarsky, Esq. I have personal knowledge of the facts testified to below and if called as a witness could testify to those facts.

2. Attached hereto as Attachment 1 is a copy of an article dated September 6, 2001 and titled "Microsoft Antitrust Case: An Update on the Company's Lobbying and Campaign Contributions" and related information which was downloaded from the website (www.opensecrets.org) of The Center For Responsive Politics ("CRP"). The chart on page

2 of Attachment 1 shows that Microsoft an its employees contributed about $6.8 million to national political parties and federal candidates from 1997 through July 31, 2001. The chart on page 3 of Attachment 1 shows that Microsoft spent about $17.1 million on federal lobbying from 1997 through December 31, 2000. The CRP reported it had found $161,250 in contributions from Microsoft or its employees to the Bush campaign or the Bush-Cheney Inaugural Fund. The CRP also reported it had found $19,250 in contributions in 1999 and 2000 to the campaign of Attorney General Ashcroft and to the Ashcroft Victory Committee. The listings and dates for $19,000 of these contributions are shown in Attachment 1 hereto.

3. Attached hereto as Attachment 2 is a copy of a copy of the mission statement of the Center For Responsive Politics which was downloaded from the website (www.opensecrets.org) of The Center For Responsive Politics.

4. Attached hereto as Attachment 3 is a copy of the unsworn Statement of Charles F. (Rick) Rule, presented on December 12, 2001, to the Senate Judiciary Committee. Attached hereto as Attachment 4 is a copy of a Lobbying Registration for registrant Covington & Burling dated June 29, 1998. Attached hereto as Attachment 7 is a copy of Charles F. "Rick" Rule's resume, which I obtained from the website of Fried, Frank, Harris, Shriver, and Jacobson (www.friedfrank.com).

5. Attached hereto as Attachment 5 is a copy of an item from the front page of the A section of The Wall Street Journal, dated November 16, 2001.

6. Attached hereto as Attachment 6 is a copy of the preliminary transcript of the December 12, 2001 Senate Judiciary Committee hearing concerning the proposed settlement of the Microsoft antitrust case.

7. Attached hereto as Attachment 8 is a copy of an article titled "States Biding for Time

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to Study Microsoft Settlement Plan" by Stephen Labaton which appeared in The New York Times, November 2, 2001, on pages C1 and C4.

8. Attached hereto as Attachment 9 is a copy of Form LD-2 dated August 5, 1999, in which Barbour, Griffith, and Rogers ("BGR") reported that during the first half of 1999, it received $300,000 from Microsoft for lobbying.

9. Attached hereto as Attachment 10 is a copy of Form LD-2 dated February 13, 2000, in which BGR reported that during the last half of 1999, it received $320,000 from Microsoft for lobbying.

10. Attached hereto as Attachment 11 is a copy of Form LD-2 dated August 12, 2000, in which BGR reported that during the first half of 2000, it received $300,000 from Microsoft for lobbying.

11. Attached hereto as Attachment 12 is a copy of Form LD-2 dated February 14, 2001, in which BGR reported that during the last half of 2000, it received $240,000 from Microsoft for lobbying.

12. Attached hereto as Attachment 13 is a copy of Form LD-2 dated August 14, 2001, in which BGR reported that during the first half of 2001, it received $220,000 from Microsoft for lobbying.

13. Attached hereto as Attachment 14 is a copy of Form LD-2 dated February 6, 1998, in which Clark and Weinstock ("CW") reported that during the last half of 1997, it received $80,000 from Microsoft for lobbying.

14. Attached hereto as Attachment 15 is a copy of Form LD-2 dated August 4, 1998, in which CW reported that during the first half of 1998, it received $160,000 from Microsoft for lobbying.

MTC-00030631_0714

15. Attached hereto as Attachment 16 is a copy of Form LD-2 dated February 11, 1999, in which CW reported that during the last half of 1998, it received $220,000 from Microsoft for lobbying.

16. Attached hereto as Attachment 17 is a copy of Form LD-2 dated August 9, 1999, in which CW reported that during the first half of 1999, it received $220,000 from Microsoft for lobbying.

17. Attached hereto as Attachment 18 is a copy of Form LD-2 dated August 11, 2000, in which CW reported that during the first half of 2000, it received $280,000 from Microsoft for lobbying.

18. Attached hereto as Attachment 19 is a copy of Form LD-2 dated February 9, 2001, in which CW reported that during the last half of 2000, it received $280,000 from Microsoft for lobbying.

19. Attached hereto as Attachment 20 is a copy of Form LD-2 dated August 9, 2001, in which CW reported that during the first half of 2001, it received $240,000 from Microsoft for lobbying.

20. Attached hereto as Attachment 21 is a copy of Form LD-2 dated August 4, 1998, in which Covington & Burling ("CB") reported that during the first half of 1998, it received $40,000 from Microsoft for lobbying.

21. Attached hereto as Attachment 22 is a copy of Form LD-2 dated February 4, 1999, in which CB reported that during the last half of 1998, it received $60,000 from Microsoft for lobbying.

22. Attached hereto as Attachment 23 is a copy of Form LD-2 dated August 10, 1999, in which CB reported that during the first half of 1999, it received $40,000 from Microsoft

MTC-00030631_0715

for lobbying.

23. Attached hereto as Attachment 24 is a copy of Form LD-2 dated February 13, 1998, in which Downey Chandler, Inc. ("DCI") reported that during the last half of 1997, it received $60,000 from Microsoft for lobbying.

24. Attached hereto as Attachment 25 is a copy of Form LD-2 dated August 7, 1998, in which DCI reported that during the first half of 1998, it received $80,000 from Microsoft for lobbying.

25. Attached hereto as Attachment 26 is a copy of Form LD-2 dated February 16, 1999, in which DCI reported that during the last half of 1998, it received $60,000 from Microsoft for lobbying.

26. Attached hereto as Attachment 27 is a copy of Form LD-2 dated July 30, 1999, in which DCI reported that during the first half of 1999, it received $80,000 from Microsoft for lobbying.

27. Attached hereto as Attachment 28 is a copy of Form LD-2 dated February 14, 2000, in which DCI (now called Downey McGrath Group, Inc., or "DMG"), reported that during the last half of 1999, it received $100,000 from Microsoft for lobbying.

28. Attached hereto as Attachment 29 is a copy of Form LD-2 dated August 11, 2000, in which DMG reported that during the first half of 2000, it received $80,000 from Microsoft for lobbying.

29. Attached hereto as Attachment 30 is a copy of Form LD-2 dated February 14, 2001, in which DMG reported that during the last half of 2000, it received $40,000 from Microsoft for lobbying.

30. Attached hereto as Attachment 31 is a copy of Form LD-2 dated August 14, 2001,

MTC-00030631_0716

in which DMG reported that during the first half of 2001, it received $60,000 from Microsoft for lobbying.

31. Attached hereto as Attachment 32 is a copy of Form LD-2 dated August 14, 2000, in which Lackman & Associates, L.L.C., ("L&A") reported that up to June 30, 2000, it received $17,500 from Microsoft for lobbying.

32. Attached hereto as Attachment 33 is a copy of Form LD-2 dated January 21, 2000, in which McSlarrow & Associates, L.L.C. ("MA") reported that during the last half of 1999, it received $40,000 from Microsoft for lobbying.

33. Attached hereto as Attachment 34 is a copy of Form LD-2 dated August 10, 2000, in which MA (now known as McSlarrow Consulting, L.L.C., or "MC") reported that during the first half of 2000, it received $40,000 from Microsoft for lobbying.

34. Attached hereto as Attachment 35 is a copy of Form LD-2 dated February 2, 2001, in which MC reported that during the last half of 2000, it received $60,000 from Microsoft for lobbying.

35. Attached hereto as Attachment 36 is a copy of Form LD-2 dated August 12, 2001, in which MC reported that during the first half of 2001, it received $60,000 from Microsoft for lobbying.

36. Attached hereto as Attachment 37 is a copy of Form LD-2 dated August 11, 2000, in which Microsoft reported that during the first half of 2000, it spent $3,340,000 for lobbying.

37. Attached hereto as Attachment 38 is a copy of Form LD-2 dated February 17, 1998, in which Preston, Gates, Ellis, & Rouvelas Meeds, L.L.P. ("PGERM") reported that during the last half of 1997, it received $220,000 from Microsoft for lobbying.

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38. Attached hereto as Attachment 39 is a copy of Form LD-2 dated August 14, 1998, in which PGERM reported that during the first half of 1998, it received $360,000 from Microsoft for lobbying.

39. Attached hereto as Attachment 40 is a copy of Form LD-2 dated February 14, 2000, in which PGERM reported that during the last half of 1999, it received $200,000 from Microsoft for lobbying.

40. Attached hereto as Attachment 41 is a copy of Form LD-2 dated August 14, 2000 in which PGERM reported that during the first half of 2000, it received $220,000 from Microsoft for lobbying.

41. Attached hereto as Attachment 42 is a copy of Form LD-2 dated February 14, 2001, in which PGERM reported that during the last half of 2000, it received $260,000 from Microsoft for lobbying.

42. Attached hereto as Attachment 43 is a copy of Form LD-2 dated August 14, 2001, in which PGERM reported that during the first half of 2001, it received $120,000 from Microsoft for lobbying.

43. On January 14, 2001, I called the Bureau of Labor Statistics to inquire about changes in the Consumer Price Index. The BLS advised me that a Consumer Price Index of 100 on January 1, 1972 would equate to a CPI of 326 on January 1, 2001.

44. According to the Wall Street Journal of January 21, 2002, p. C8, the closing price of Microsoft common stock on January 18, 2002 was $66.10 per share.

45. Attached hereto as Attachment 44 is a copy of a press release dated November 6, 2001, from Congressman John Conyers, Jr., which appears to contain the text of a letter dated November 6, 2001, from Rep. Conyers to The Honorable John Ashcroft, Attorney

MTC-00030631_0718

General of the United States.

46. Attached hereto as Attachment 45 is a copy of the basic statement of facts in the Statement Of Information, Hearings Before The Committee On The Judiciary House Of Representatives, Ninety-Third Congress, Second Session, Pursuant To H. Res. 803, Book V, Part I, Department Of Justice ITT Litigation - Richard Kleindienst Nomination Hearings.

47. Attached hereto as Attachment 46 are copies of pages 614-615, 634-636 from the Supporting Evidence in Statement Of Information, Hearings Before The Committee On The Judiciary House Of Representatives, Ninety-Third Congress, Second Session, Pursuant To H. Res. 803, Book V, Part II, Department Of Justice ITT Litigation - Richard Kleindienst Nomination Hearings. A two (2) page memorandum dated June 25, 1971, from D. D. Beard to W. R. Merriam is on pages 614-615. Columns by Jack Anderson dated February 29, 1972, March 1, 1972, and March 3, 1972, appear on pages 634-636, respectively.

I declare under penalty of perjury that the foregoing is true and correct, executed in Washington, D.C., on January 23, 2002.

Brian Dautch

MTC-00030631_0719

ATTACHMENT 1

TO THE

DECLARATION OF BRIAN DAUTCH

Alerts: Current Congress

Alert List Signup

Alerts: 106th Congress

Alerts: 105th Congress

Alerts: 104th Congress

FORMAT TO PRINT
E-MAIL TO A FRIEND

THE CENTER FOR RESPONSIVE POLITICS

Microsoft Antitrust Case: An Update on the Company's Lobbying and Campaign Contributions

MONEY I POLITICS A

Sept. 6, 20
Vol. 6, No.

Prepared
Holly Bail
tel: 202-857-
fax: 202-857

After more than three years of investigations, litigation and intensive lobbying, the Justice Department today announced it would no longer seek a break-up of the computer giant Microsoft, ending one aspect of a landmark case that sent the company's campaign contributions soaring and formally introduced the computer industry to Washington politics.

The decision by the Bush administration to vacate the lawsuit that was first initiated in 1998 by the Clinton Justice Department is considered a major victory for Microsoft, which nearly tripled its campaign contributions and more than doubled its lobbying expenditures during its fight against the antitrust case.

During the 1999-2000 election cycle, Microsoft contributed more than $4.7 million in soft money, PAC and individual contributions to federal candidates and parties—almost three times what the company contributed during the previous three election cycles combined. More than half that money went to Republicans.

The Bush campaign reported $61,250 in contributions from Microsoft employees during 1999-2000. Attorney General John Ashcroft, a former U.S. Senator from Missouri, reported just $9,250 in contributions from Microsoft during the last elections, though the company did contribute $10,000 to the Ashcroft Victory Committee, a soft money account run jointly by the Ashcroft campaign and the National Republican Senatorial Committee.

But that's not all the money that Microsoft has thrown around Washington in recent years. During the calendar year 2000 alone, Microsoft spent almost $6.4 million to lobby Congress and the Clinton administration, according to reports filed with the U.S. Senate. That's a significant increase over the $4.9 million in lobbying expenditures the company reported in 1999. And Microsoft also was a major contributor to the Bush-Cheney Inaugural Fund, donating $100,000 to the gala last January.

Just months into the 2001-02 election cycle, Microsoft already ranks as a significant contributor, giving just over $700,000 to federal parties and candidates, split almost evenly between the two major parties. (This includes contributions reported to the FEC through the end of July.)

However, the lawsuit's most significant impact on campaign finance extends beyond Microsoft itself. The antitrust lawsuit proved to be a major turning point in the tech industry's involvement in Washington politics.

MTC-00030631_0721

Shortly after the Justice Department launched its lawsuit, Microsoft became one of the first computer companies to open lobbying offices in Washington and was one of the first to contribute major soft money dollars to the political parties. By the year 2000, computers and Internet companies ranked No. 7 on the list of the biggest industry givers on the federal level, contributing more than $39.7 million. Since 1997, Microsoft has been the industry's biggest contributor.

Click here for a look at Microsoft's contributions to:

Members of the House in 1999-2000
Members of the House in 2001
Members of the Senate in 1995-00
Members of the Senate in 2001

And click here for the company's lobbying expenditures dating back to 1997.

Microsoft Soft Money, PAC & Individual Contributions to Federal Parties and Candidates, 1993-2001*

Election Cycle	Total	Dems	Repubs
1993-94	$109,134	$76,566	$30,918
1995-96	$256,634	$129,474	$104,210
1997-98	$1,407,271	$482,903	$903,118
1999-00	$4,701,631	$2,153,064	$2,488,943
2001-02	$700,085	$328,955	$371,130

*Based on FEC data downloaded 9/1/01. The totals for the 2002 election cycle including fund-raising numbers reported to the FEC through July 31, 2001.

MTC-00030631_0722

THE CENTER FOR RESPONSIVE POLITICS

Money in Politics Alert

Microsoft Antitrust Case

Microsoft Lobbying Expenditures, 1997-00*	
Calendar Year	**Lobby Total**
1997	$2,120,000
1998	$3,740,000
1999	$4,860,000
2000	$6,360,000

*Based on filings with the US Senate.

THE CENTER FOR RESPONSIVE POLITICS

Microsoft PAC & Individual Contributions to the Senate, 2001*

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Name	Total
Wayne Allard (R-Colo)	$1,500
Max Baucus (D-Mont)	$1,000
Evan Bayh (D-Ind)	$2,000
Robert F. Bennett (R-Utah)	$1,000
Joseph R. Biden Jr (D-Del)	$1,000
Maria Cantwell (D-Wash)	$35,250
Jean Carnahan (D-Mo)	$1,000
Max Cleland (D-Ga)	$1,000
Hillary Rodham Clinton (D-NY)	$1,000
Thad Cochran (R-Miss)	$3,000
Susan Collins (R-Me)	$2,000
Larry E. Craig (R-Idaho)	$2,000
Pete V. Domenici (R-NM)	$2,000
Byron L. Dorgan (D-ND)	$1,000
Richard J. Durbin (D-Ill)	$1,000
Michael B. Enzi (R-Wyo)	$1,000
Phil Gramm (R-Texas)	$1,000
Charles E. Grassley (R-Iowa)	$1,000
Chuck Hagel (R-Neb)	$2,000
Tom Harkin (D-Iowa)	$1,000
Tim Hutchinson (R-Ark)	$4,000
James M. Inhofe (R-Okla)	$1,000
Daniel K. Inouye (D-Hawaii)	$500
Tim Johnson (D-SD)	$2,000
Mary L. Landrieu (D-La)	$3,500
Patrick J. Leahy (D-Vt)	$250
Carl Levin (D-Mich)	$3,000
Blanche Lambert Lincoln (D-Ark)	$1,000
Mitch McConnell (R-Ky)	$9,750
Patty Murray (D-Wash)	($3,000)
Jack Reed (D-RI)	$1,000
Pat Roberts (R-Kan)	$1,000
John D. Rockefeller IV (D-WVa)	$1,000
Jeff Sessions (R-Ala)	$3,000
Gordon Smith (R-Ore)	$4,000
Robert C. Smith (R-NH)	$1,000
Deborah Ann Stabenow (D-Mich)	$1,000
Ted Stevens (R-Alaska)	$6,000

*Based on FEC data downloaded 9/1/01.

THE CENTER FOR RESPONSIVE POLITICS

Microsoft PAC & Individual Contributions to the Senate, 1995-00*

Back to Alert

Name	PAC & Indiv Total
Patty Murray (D-Wash)	$48,236
John McCain (R-Ariz)	$47,449
Maria Cantwell (D-Wash)	$25,350
Conrad Burns (R-Mont)	$20,250
Edward M. Kennedy (D-Mass)	$15,000
Bill Frist (R-Tenn)	$12,500
Dianne Feinstein (D-Calif)	$12,000
Jon L. Kyl (R-Ariz)	$12,000
Jeff Bingaman (D-NM)	$12,000
Rick Santorum (R-Pa)	$11,000
Joseph I. Lieberman (D-Conn)	$10,500
John Ensign (R-Nev)	$10,000
Mike DeWine (R-Ohio)	$10,000
Max Baucus (D-Mont)	$10,000
Olympia J. Snowe (R-Maine)	$10,000
Deborah Ann Stabenow (D-Mich)	$8,250
Patrick J. Leahy (D-Vt)	$7,150
Ron Wyden (D-Ore)	$6,000
Ernest F. Hollings (D-SC)	$6,000
Trent Lott (R-Miss)	$6,000
George Allen (R-Va)	$5,500
Kent Conrad (D-ND)	$5,500
Max Cleland (D-Ga)	$5,250
Mary L. Landrieu (D-La)	$5,000
Ben Nelson (D-Neb)	$5,000
Hillary Rodham Clinton (D-NY)	$5,000
Charles E. Schumer (D-NY)	$5,000
Tom Daschle (D-SD)	$5,000
Robert C. Smith (R-NH)	$4,500
Christopher J. Dodd (D-Conn)	$4,000
Kay Bailey Hutchison (R-Texas)	$4,000
Phil Gramm (R-Texas)	$3,800
Jack Reed (D-RI)	$3,500
Michael D. Crapo (R-Idaho)	$3,500
James M. Jeffords (R-Vt)	$3,250
Sam Brownback (R-Kan)	$3,000
Zell Miller (D-Ga)	$3,000
Mitch McConnell (R-Ky)	$3,000
Richard G. Lugar (R-Ind)	$3,000
Lincoln D. Chafee (R-RI)	$3,000

Byron L. Dorgan (D-ND)	$2,500
Daniel K. Akaka (D-Hawaii)	$2,500
Gordon Smith (R-Ore)	$2,500
Arlen Specter (R-Pa)	$2,500
Tim Hutchinson (R-Ark)	$2,000
Barbara Boxer (D-Calif)	$2,000
Evan Bayh (D-Ind)	$2,000
Chuck Hagel (R-Neb)	$2,000
Ted Stevens (R-Alaska)	$2,000
Richard J. Durbin (D-Ill)	$2,000
Pete V. Domenici (R-NM)	$2,000
John D. Rockefeller IV (D-WVa)	$2,000
Jeff Sessions (R-Ala)	$2,000
Charles E. Grassley (R-Iowa)	$2,000
Robert F. Bennett (R-Utah)	$2,000
Jim Bunning (R-Ky)	$1,500
George V. Voinovich (R-Ohio)	$1,500
Robert C. Byrd (D-WVa)	$1,500
Blanche Lambert Lincoln (D-Ark)	$1,500
Thomas R. Carper (D-Del)	$1,500
John Kerry (D-Mass)	$1,250
Carl Levin (D-Mich)	$1,250
Bill Nelson (D-Fla)	$1,000
Christopher S. Bond (R-Mo)	$1,000
Fred Thompson (R-Tenn)	$1,000
John B. Breaux (D-La)	$1,000
Bob Graham (D-Fla)	$1,000
Strom Thurmond (R-SC)	$1,000
Larry E. Craig (R-Idaho)	$1,000
Paul S. Sarbanes (D-Md)	$1,000
Don Nickles (R-Okla)	$1,000
Peter G. Fitzgerald (R-Ill)	$1,000
Robert G. Torricelli (D-NJ)	$1,000
Frank H. Murkowski (R-Alaska)	$1,000
Tim Johnson (D-SD)	$1,000
Wayne Allard (R-Colo)	$1,000
Judd Gregg (R-NH)	$1,000
Craig Thomas (R-Wyo)	$1,000
Ben Nighthorse Campbell (R-Colo)	$1,000

*Based on FEC data downloaded 9/1/01.

THE CENTER FOR RESPONSIVE POLITICS

Microsoft PAC & Individual Contributions to the House, 2001*

Back to Alert

Name	PAC & Indiv Total*
Dick Armey (R-Texas)	$2,500
Spencer Bachus (R-Ala)	$1,000
Joe L. Barton (R-Texas)	$1,500
Xavier Becerra (D-Calif)	$500
Ken Bentsen (D-Texas)	$1,000
Howard L. Berman (D-Calif)	$1,000
Michael Bilirakis (R-Fla)	$1,000
Henry Bonilla (R-Texas)	$1,000
Mary Bono (R-Calif)	$1,000
Rick Boucher (D-Va)	$1,500
Kevin Brady (R-Texas)	$500
Sherrod Brown (D-Ohio)	$500
Ed Bryant (R-Tenn)	$1,000
Richard M. Burr (R-NC)	$1,500
Steve Buyer (R-Ind)	$2,500
Lois Capps (D-Calif)	$1,000
Steve Chabot (R-Ohio)	$1,500
Barbara Cubin (R-Wyo)	$2,000
Randy "Duke" Cunningham (R-Calif)	$1,500
Jim Davis (D-Fla)	$500
Thomas M. Davis III (R-Va)	$500
Diana Degette (D-Colo)	$1,000
Peter Deutsch (D-Fla)	$1,000
Norm Dicks (D-Wash)	$4,000
John D. Dingell (D-Mich)	$1,000
Cal Dooley (D-Calif)	$4,500
Jennifer Dunn (R-Wash)	$2,000
Chet Edwards (D-Texas)	$1,000
Robert L. Ehrlich Jr (R-Md)	$1,000
Jo Ann Emerson (R-Mo)	$500
Anna G. Eshoo (D-Calif)	$2,000
Bob Etheridge (D-NC)	$1,000
Sam Farr (D-Calif)	$1,000
Mike Ferguson (R-NJ)	$500
Mark Foley (R-Fla)	$1,000
J. Randy Forbes (R-Va)	$1,000
Harold E. Ford Jr (D-Tenn)	$2,000
Vito J. Fossella (R-NY)	$1,000

Martin Frost (D-Texas)	$1,000
Elton Gallegly (R-Calif)	$1,000
George W. Gekas (R-Pa)	$500
Richard A. Gephardt (D-Mo)	$5,000
Jim Gibbons (R-Nev)	$500
Benjamin A. Gilman (R-NY)	$1,000
Robert W. Goodlatte (R-Va)	$1,000
Bart Gordon (D-Tenn)	$1,000
Lindsey Graham (R-SC)	$4,500
Sam Graves (R-Mo)	$2,000
Mark Green (R-Wis)	$1,500
Jane Harman (D-Calif)	$500
Melissa A. Hart (R-Pa)	$1,500
Dennis Hastert (R-Ill)	$1,000
David L. Hobson (R-Ohio)	$1,000
Rush D. Holt (D-NJ)	$1,500
Mike Honda (D-Calif)	$1,000
Amo Houghton (R-NY)	$2,000
Steny H. Hoyer (D-Md)	$1,000
Kenny Hulshof (R-Mo)	$1,000
Jay Inslee (D-Wash)	$28,500
John H. Isakson (R-Ga)	$500
Sheila Jackson Lee (D-Texas)	$1,000
William J. Jefferson (D-La)	$1,000
Nancy L. Johnson (R-Conn)	$2,000
Sam Johnson (R-Texas)	$1,000
Ric Keller (R-Fla)	$1,000
Mark Kennedy (R-Minn)	$500
Patrick J. Kennedy (D-RI)	$1,000
Jim Kolbe (R-Ariz)	$1,500
Rick Larsen (D-Wash)	$15,500
John B. Larson (D-Conn)	$500
Sander M. Levin (D-Mich)	$3,000
Jerry Lewis (R-Calif)	$1,000
Zoe Lofgren (D-Calif)	$1,000
William P. "Bill" Luther (D-Minn)	$500
Robert T. Matsui (D-Calif)	$2,000
Jim McDermott (D-Wash)	$2,000
Scott McInnis (R-Colo)	$1,000
Gregory W. Meeks (D-NY)	$1,000
George Miller (D-Calif)	$1,000
Dennis Moore (D-Kan)	$1,000
James P. Moran (D-Va)	$1,000
Sue Myrick (R-NC)	$1,000
George Nethercutt (R-Wash)	$2,000
Bob Ney (R-Ohio)	$2,000
Jim Nussle (R-Iowa)	$1,000
Douglas A. Ose (R-Calif)	$1,000
C. L. 'Butch' Otter (R-Idaho)	$1,000
Michael G. Oxley (R-Ohio)	$1,500
Nancy Pelosi (D-Calif)	$1,000
Charles W. "Chip" Pickering Jr (R-Miss)	$1,000

Earl Pomeroy (D-ND)	$1,000
David E. Price (D-NC)	$1,000
Deborah Pryce (R-Ohio)	$1,000
Jim Ramstad (R-Minn)	$500
Denny Rehberg (R-Mont)	$500
Harold Rogers (R-Ky)	$1,000
Mike Rogers (R-Mich)	$500
Ed Royce (R-Calif)	$300
Paul D. Ryan (R-Wis)	$3,000
Max Sandlin (D-Texas)	$500
Tom Sawyer (D-Ohio)	$2,000
F. James Sensenbrenner Jr (R-Wis)	$1,000
John Shadegg (R-Ariz)	$1,000
John M. Shimkus (R-Ill)	$1,000
Adam Smith (D-Wash)	$10,500
Lamar Smith (R-Texas)	$1,000
Cliff Stearns (R-Fla)	$1,000
Charles W. Stenholm (D-Texas)	$1,000
John E. Sununu (R-NH)	$3,500
John Tanner (D-Tenn)	$500
Ellen O. Tauscher (D-Calif)	$2,000
W. J. "Billy" Tauzin (R-La)	$2,500
Todd Tiahrt (R-Kan)	$500
Edolphus Towns (D-NY)	$2,000
Fred Upton (R-Mich)	$2,000
Greg Walden (R-Ore)	$1,500
J. C. Watts Jr (R-Okla)	$1,000
Henry A. Waxman (D-Calif)	$1,000
Anthony Weiner (D-NY)	$500
Jerry Weller (R-Ill)	$1,000
Edward Whitfield (R-Ky)	$1,000
Heather A. Wilson (R-NM)	$1,000
Frank R. Wolf (R-Va)	$1,000
Don Young (R-Alaska)	$1,000

*Based on FEC data downloaded 9/1/01.

THE CENTER FOR RESPONSIVE POLITICS

Microsoft PAC & Individual Contributions to the House, 1999-00*

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Click here to view this list alphabetically

Name	PAC & Indiv Total*
Jay Inslee (D-Wash)	$131,600
Brian Baird (D-Wash)	$39,900
Rick Larsen (D-Wash)	$35,600
Adam Smith (D-Wash)	$31,750
Jennifer Dunn (R-Wash)	$15,450
Cal Dooley (D-Calif)	$12,500
Robert W. Goodlatte (R-Va)	$11,750
George Nethercutt (R-Wash)	$10,000
Richard "Doc" Hastings (R-Wash)	$9,500
Norm Dicks (D-Wash)	$7,500
Ellen O. Tauscher (D-Calif)	$7,500
Anna G. Eshoo (D-Calif)	$7,000
Roy Blunt (R-Mo)	$7,000
Charles B. Rangel (D-NY)	$7,000
Barbara Cubin (R-Wyo)	$6,500
Robert T. Matsui (D-Calif)	$6,500
James P. Moran (D-Va)	$6,500
Steve Chabot (R-Ohio)	$6,000
Martin Frost (D-Texas)	$6,000
Dick Armey (R-Texas)	$5,000
John T. Doolittle (R-Calif)	$5,000
Tom DeLay (R-Texas)	$5,000
Richard A. Gephardt (D-Mo)	$5,000
Bart Gordon (D-Tenn)	$5,000
John Conyers Jr (D-Mich)	$5,000
Carolyn McCarthy (D-NY)	$5,000
Zoe Lofgren (D-Calif)	$5,000
Ed Bryant (R-Tenn)	$5,000
Thomas M. Davis III (R-Va)	$4,500
John D. Dingell (D-Mich)	$4,500
Jim Kolbe (R-Ariz)	$4,500
Henry J. Hyde (R-Ill)	$4,000
George W. Gekas (R-Pa)	$4,000
Tim Roemer (D-Ind)	$4,000
Charles W. "Chip" Pickering Jr (R-Miss)	$4,000
Heather A. Wilson (R-NM)	$4,000
Bob Etheridge (D-NC)	$4,000
James E. Clyburn (D-SC)	$4,000

Howard Coble (R-NC)	$4,000
David Vitter (R-La)	$4,000
Christopher R. Cannon (R-Utah)	$3,500
Lois Capps (D-Calif)	$3,500
Harold E. Ford Jr (D-Tenn)	$3,500
Paul D. Ryan (R-Wis)	$3,500
Adam Putnam (R-Fla)	$3,500
Ed Schrock (R-Va)	$3,500
Jim McDermott (D-Wash)	$3,500
Nancy L. Johnson (R-Conn)	$3,500
Anne Northup (R-Ky)	$3,500
Jim McCrery (R-La)	$3,000
Rick Boucher (D-Va)	$3,000
Martin T. Meehan (D-Mass)	$3,000
Howard L. Berman (D-Calif)	$3,000
Ken Bentsen (D-Texas)	$3,000
William P. "Bill" Luther (D-Minn)	$3,000
Spencer Bachus (R-Ala)	$3,000
Mary Bono (R-Calif)	$3,000
Richard M. Burr (R-NC)	$3,000
Steve Buyer (R-ind)	$3,000
Chris John (D-La)	$3,000
Ralph M. Hall (D-Texas)	$3,000
Mark Green (R-Wis)	$3,000
Bud Cramer (D-Ala)	$3,000
Philip M. Crane (R-Ill)	$3,000
Jim Gibbons (R-Nev)	$3,000
Randy "Duke" Cunningham (R-Calif)	$3,000
Diana Degette (D-Colo)	$3,000
Elton Gallegly (R-Calif)	$3,000
Vito J. Fossella (R-NY)	$3,000
Ron Kind (D-Wis)	$3,000
John Shadegg (R-Ariz)	$3,000
Edward Whitfield (R-Ky)	$3,000
Edolphus Towns (D-NY)	$3,000
Bennie Thompson (D-Miss)	$3,000
Bill Thomas (R-Calif)	$3,000
W. J. "Billy" Tauzin (R-La)	$3,000
John Tanner (D-Tenn)	$3,000
E. Clay Shaw Jr (R-Fla)	$3,000
Lindsey Graham (R-SC)	$2,750
F. James Sensenbrenner Jr (R-Wis)	$2,749
Xavier Becerra (D-Calif)	$2,500
Harold Rogers (R-Ky)	$2,500
Melvin Watt (D-NC)	$2,500
Jim Davis (D-Fla)	$2,500
Cliff Stearns (R-Fla)	$2,500
Darrell Issa (R-Calif)	$2,500
Mike Honda (D-Calif)	$2,500
Kenny Hulshof (R-Mo)	$2,500
Tom Sawyer (D-Ohio)	$2,500
Porter J. Goss (R-Fla)	$2,500
Sam Farr (D-Calif)	$2,500

Melissa A. Hart (R-Pa)	$2,500
Constance A. Morella (R-Md)	$2,500
Dennis Hastert (R-Ill)	$2,500
C. W. Bill Young (R-Fla)	$2,500
Gene Green (D-Texas)	$2,000
Ric Keller (R-Fla)	$2,000
Robert Aderholt (R-Ala)	$2,000
Thomas Gerard Tancredo (R-Colo)	$2,000
William J. Jefferson (D-La)	$2,000
Sheila Jackson Lee (D-Texas)	$2,000
Eddie Bernice Johnson (D-Texas)	$2,000
Felix J. Grucci Jr (R-NY)	$2,000
Mark Kennedy (R-Minn)	$2,000
Charles W. Stenholm (D-Texas)	$2,000
Steny H. Hoyer (D-Md)	$2,000
Darlene Hooley (D-Ore)	$2,000
Chet Edwards (D-Texas)	$2,000
Jane Harman (D-Calif)	$2,000
Jeff Flake (R-Ariz)	$2,000
Robin Hayes (R-NC)	$2,000
Mark Foley (R-Fla)	$2,000
Bobby L. Rush (D-Ill)	$2,000
Henry A. Waxman (D-Calif)	$2,000
Tammy Baldwin (D-Wis)	$2,000
Joe L. Barton (R-Texas)	$2,000
Dennis Moore (D-Kan)	$2,000
Gary G. Miller (R-Calif)	$2,000
Dan Miller (R-Fla)	$2,000
Richard W. Pombo (R-Calif)	$2,000
Earl Pomeroy (D-ND)	$2,000
Michael Bilirakis (R-Fla)	$2,000
David E. Bonior (D-Mich)	$2,000
Adam Schiff (D-Calif)	$2,000
Patrick J. Kennedy (D-RI)	$2,000
J. C. Watts Jr (R-Okla)	$2,000
Ron Lewis (R-Ky)	$2,000
H. James Saxton (R-NJ)	$2,000
Bob Clement (D-Tenn)	$2,000
Sander M. Levin (D-Mich)	$2,000
Fred Upton (R-Mich)	$2,000
Steve Largent (R-Okla)	$2,000
Jim Langevin (D-RI)	$2,000
Christopher Cox (R-Calif)	$2,000
Don Young (R-Alaska)	$2,000
Douglas A. Ose (R-Calif)	$2,000
Richard E. Neal (D-Mass)	$2,000
Donald L. Sherwood (R-Pa)	$1,500
Pete Sessions (R-Texas)	$1,500
Greg Ganske (R-Iowa)	$1,500
Robert L. Ehrlich Jr (R-Md)	$1,500
Vernon J. Ehlers (R-Mich)	$1,500
John E. Sununu (R-NH)	$1,500
Jo Ann Davis (R-Va)	$1,500

Barney Frank (D-Mass)	$1,500
Ander Crenshaw (R-Fla)	$1,500
C. L. 'Butch' Otter (R-Idaho)	$1,500
Greg Walden (R-Ore)	$1,500
Henry Brown (R-SC)	$1,500
Michael G. Oxley (R-Ohio)	$1,500
Charles Bass (R-NH)	$1,500
Charlie Norwood (R-Ga)	$1,500
Rush D. Holt (D-NJ)	$1,500
Jim Ryun (R-Kan)	$1,500
Amo Houghton (R-NY)	$1,500
Scott McInnis (R-Colo)	$1,500
J. D. Hayworth (R-Ariz)	$1,500
Loretta Sanchez (D-Calif)	$1,500
Ron Paul (R-Texas)	$1,250
Saxby Chambliss (R-Ga)	$1,000
Edward J. Markey (D-Mass)	$1,000
Dan Burton (R-Ind)	$1,000
Jim Ramstad (R-Minn)	$1,000
Ken Lucas (D-Ky)	$1,000
Eric Cantor (R-Va)	$1,000
Maxine Waters (D-Calif)	$1,000
Deborah Pryce (R-Ohio)	$1,000
John Lewis (D-Ga)	$1,000
Todd Akin (R-Mo)	$1,000
William 'Lacy' Clay (D-Mo)	$1,000
Jerry Lewis (R-Calif)	$1,000
Ileana Ros-Lehtinen (R-Fla)	$1,000
Mark Udall (D-Colo)	$1,000
Jim Turner (D-Texas)	$1,000
Brad Carson (D-Okla)	$1,000
Roger Wicker (R-Miss)	$1,000
Thomas M. Barrett (D-Wis)	$1,000
John P. Murtha (D-Pa)	$1,000
Albert R. Wynn (D-Md)	$1,000
Mike Pence (R-Ind)	$1,000
Frank R. Wolf (R-Va)	$1,000
Jack Quinn (R-NY)	$1,000
David E. Price (D-NC)	$1,000
Leonard L. Boswell (D-Iowa)	$1,000
Henry Bonilla (R-Texas)	$1,000
Karen McCarthy (D-Mo)	$1,000
Mike Ross (D-Ark)	$1,000
Sue Myrick (R-NC)	$1,000
Bob Ney (R-Ohio)	$1,000
James A. Barcia (D-Mich)	$1,000
Marion Berry (D-Ark)	$1,000
Bill Jenkins (R-Tenn)	$1,000
Lamar Smith (R-Texas)	$1,000
Vic Snyder (D-Ark)	$1,000
Jo Ann Emerson (R-Mo)	$1,000
Baron P. Hill (D-Ind)	$1,000
David L. Hobson (R-Ohio)	$1,000

John M. Spratt Jr (D-SC)	$1,000
Gary A. Condit (D-Calif)	$1,000
Jack Kingston (R-Ga)	$1,000
Mike Ferguson (R-NJ)	$1,000
Lincoln Diaz-Balart (R-Fla)	$1,000
Lane Evans (D-Ill)	$1,000
John M. Shimkus (R-Ill)	$1,000
Bart Stupak (D-Mich)	$1,000
Nancy Pelosi (D-Calif)	$1,000
John Thune (R-SD)	$1,000
Frank Pallone Jr (D-NJ)	$1,000
Charlie Gonzalez (D-Texas)	$1,000
Marge Roukema (R-NJ)	$1,000
Peter Deutsch (D-Fla)	$1,000
John Culberson (R-Texas)	$1,000
Lucille Roybal-Allard (D-Calif)	$1,000
David R. Obey (D-Wis)	$1,000
Brian D. Kerns (R-Ind)	$1,000
Sam Johnson (R-Texas)	$1,000
Jim Nussle (R-Iowa)	$1,000
Nathan Deal (R-Ga)	$1,000
John L. Mica (R-Fla)	$500
Paul E. Gillmor (R-Ohio)	$500
Lynn Woolsey (D-Calif)	$500
Max Sandlin (D-Texas)	$500
Wally Herger (R-Calif)	$500
Sanford D. Bishop Jr (D-Ga)	$500
Robert Wexler (D-Fla)	$500
Anthony Weiner (D-NY)	$500
John H. Isakson (R-Ga)	$500
Dave Camp (R-Mich)	$500
Benjamin L. Cardin (D-Md)	$500
Eva Clayton (D-NC)	$500
Joseph Crowley (D-NY)	$500
Brad Sherman (D-Calif)	$500
Peter T. King (R-NY)	$500
Lloyd Doggett (D-Texas)	$500
David Wu (D-Ore)	$250

*Based on FEC data downloaded 9/1/01.

MTC-00030631_0734

Results: Presidential Donors Search

75 records found in .09 seconds.

SEARCH CRITERIA:
Donor name: (all contributors)
Donor zip code: (any zip)
Donor employer/occupation: Microsoft
Election cycle(s): 2000

Sort by Name
Sort by Date
Sort by Amount
Change Sort Order

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Records 1 - 49:

Contributor	Occupation	Date	Amount	Recipient
EISLER, CRAIG REDMOND, WA 98053	MICROSOFT	7/14/1999	$2,000	Bush, George W
MATHEWS, MICHELLE J BELLEVUE, WA 98004	MICROSOFT CORP	7/22/1999	$2,000	Bush, George W
PETERS, G CHRISTOPHER MEDINA, WA 98039	MICROSOFT CORPORATION	7/14/1999	$2,000	Bush, George W
FERNANDEZ, ROLAND L MR WOODINVILLE, WA 98072	MICROSOFT CORPORATION/ENGINEER	2/29/2000	$2,000	Bush, George W
BRESEMANN, JOHN K MR REDMOND, WA 98053	MICROSOFT/SOFTWARE ENGINEER	10/12/2000	$2,000	Bush, George W
NIELSEN, TOD MR REDMOND, WA 98053	MICROSOFT/VICE PRESIDENT	12/27/1999	$2,000	Bush, George W
SIMONYI, CHARLES DR BELLEVUE, WA 98009	MICROSOFT	8/17/1999	$1,000	Bush, George W
SHAW, GREGORY M BELLEVUE, WA 98004	MICROSOFT	7/14/1999	$1,000	Bush, George W
SAMPLE, WILLIAM J REDMOND, WA 98053	MICROSOFT	7/14/1999	$1,000	Bush, George W
MCCAULEY, DAVID SEATTLE, WA 98112	MICROSOFT	7/14/1999	$1,000	Bush, George W
KOSS, MICHAEL C BOTHELL, WA 98052	MICROSOFT	7/14/1999	$1,000	Bush, George W
EMANUELS, BRIAN D MERCER ISLAND, WA 98040	MICROSOFT	8/17/1999	$1,000	Bush, George W
BRUNTON, DEBORAH KIRKLAND, WA 98033	MICROSOFT	7/21/1999	$1,000	Bush, George W
HURLBUT, CLARK K RENO, NV 89511	MICROSOFT	6/24/1999	$1,000	Bush, George W
FLAAT, CHRISTOPHER A BELLEVUE, WA 98007	MICROSOFT	3/31/1999	$1,000	Bush, George W

SPENCER, WILLIAM A MR REDMOND, WA 98052	MICROSOFT/MARKETING MANAGER	11/8/1999	$1,000	Bush, George W
WILLMAN, BRYAN MR KIRKLAND, WA 98034	MICROSOFT/PROGRAMMER	3/7/2000	$1,000	Bush, George W
WOODRUFF, BRYAN A MR REDMOND, WA 98053	MICROSOFT/SOFTWARE DESIGN ENGINEER	2/29/2000	$1,000	Bush, George W
WORLEY, TERENCE MR PLEASANTON, CA 94566	MICROSOFT/SOFTWARE ENGINEER	5/17/2000	$1,000	Bush, George W
BARON, WERNER MR REDMOND, WA 98052	MICROSOFT CORPORATION/MARKETING	2/28/2000	$800	Bush, George W
MASTERS, JERRY R WOODINVILLE, WA 98072	MICROSOFT	8/4/1999	$500	Bush, George W
JORGENSEN, ERIK M SEATTLE, WA 98101	MICROSOFT	7/16/1999	$500	Bush, George W
HERBOLD, ROBERT J BELLEVUE, WA 98015	MICROSOFT CORP	7/14/1999	$500	Bush, George W
BERENSON, HAROLD WOODINVILLE, WA 98072	MICROSOFT CORP	7/27/1999	$500	Bush, George W
BERENSON, HAROLD MR WOODINVILLE, WA 98072	MICROSOFT CORP./ENGINEER	1/20/2000	$500	Bush, George W
HERBOLD, ROBERT J MR BELLEVUE, WA 98015	MICROSOFT CORP./EXECUTIVE VP & COO	1/12/2000	$500	Bush, George W
SHAUGHNESSY, WILLIAM T MR REDMOND, WA 98052	MICROSOFT CORP./PRODUCT & BUSINESS	7/14/2000	$500	Bush, George W
SHAUGHNESSY, WILLIAM T MR REDMOND, WA 98052	MICROSOFT CORP./PRODUCT & BUSINESS	2/29/2000	$500	Bush, George W
KESTER, CHARLES G MR LAKE FOREST PARK, WA 98155	MICROSOFT CORP./TEAM MANAGER	3/8/2000	$500	Bush, George W
MCEACHRON, BRIAN L REDWOOD, WA 98052	MICROSOFT CORPORATION	7/14/1999	$500	Bush, George W

Next set of records

2000 cycle data downloaded from FEC on November 1, 2001. Date of request: January 2, 2002

WORLEY, TERENCE PLEASANTON, CA 94566	MICROSOFT	6/30/1999	$1,000	Bush, George W
SPIX, GEORGE A REDMOND, WA 98052	MICROSOFT CORP	7/14/1999	$1,000	Bush, George W
SANDERSON, JEFFREY P BELLEVUE, WA 98004	MICROSOFT CORP	8/12/1999	$1,000	Bush, George W
PIMENTEL, ALBERT MONTE SERENO, CA 95030	MICROSOFT CORP	7/8/1999	$1,000	Bush, George W
MURPHY, R BARRY REDMOND, WA 98052	MICROSOFT CORP	7/13/1999	$1,000	Bush, George W
HARTNECK, RALF SEATTLE, WA 98144	MICROSOFT CORP	8/11/1999	$1,000	Bush, George W
FIRMAN, THOMAS R BELLEVUE, WA 98005	MICROSOFT CORP	7/14/1999	$1,000	Bush, George W
ASHMUN, D STUART SEATTLE, WA 98177	MICROSOFT CORP	8/10/1999	$1,000	Bush, George W
BERENSON, HAROLD MR WOODINVILLE, WA 98072	MICROSOFT CORP./ENGINEER	6/15/2000	$1,000	Bush, George W
HARTENECK, RALF MR SEATTLE, WA 98144	MICROSOFT CORP./VICE PRESIDENT	5/11/2000	$1,000	Bush, George W
BOYLE, MICHAEL P BELLEVUE, WA 98005	MICROSOFT CORPORATION	7/21/1999	$1,000	Bush, George W
DERMODY, CHARLES W MR REDMOND, WA 98052	MICROSOFT CORPORATION/ENGINEER	6/26/2000	$1,000	Bush, George W
PIMENTEL, ALBERT MR MONTE SERENO, CA 95030	MICROSOFT CORPORATION/EXECUTIVE	7/31/2000	$1,000	Bush, George W
SHERWOOD, DAVID E MR WOODINVILLE, WA 98072	MICROSOFT/ATTORNEY	6/8/2000	$1,000	Bush, George W
BLANKENBURG, ERIC P MR CARNATION, WA 98014	MICROSOFT/CONSULTANT	2/24/2000	$1,000	Bush, George W
HERBOLD, ROBERT J MR BELLEVUE, WA 98005	MICROSOFT/COO	11/22/1999	$1,000	Bush, George W
MASTERS, JERRY R MR WOODINVILLE, WA 98072	MICROSOFT/FINANCE	7/31/2000	$1,000	Bush, George W
SANDERSON, JEFFREY P MR BELLEVUE, WA 98004	MICROSOFT/MARKETING	5/17/2000	$1,000	Bush, George W
MATHEWS, MICHELLE MRS BELLEVUE, WA 98004	MICROSOFT/MARKETING	5/17/2000	$1,000	Bush, George W
DOUGLAS, DEDO MR REDMOND, WA 98053	MICROSOFT/MARKETING MANAGER	3/30/2000	$1,000	Bush, George W

Results: Presidential Donors Search

75 records found in .09 seconds.

SEARCH CRITERIA:
Donor name: (all contributors)
Donor zip code: (any zip)
Donor employer/occupation: Microsoft
Election cycle(s): 2000

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Records 50 - 75:

Contributor	Occupation	Date	Amount	Recipient
MCEACHRON, BRIAN L REDWOOD, WA 98052	MICROSOFT CORPORATION	4/14/1999	$500	Bush, George W
PEASE, MATTHEW M WALNUT CREEK, CA 94595	MICROSOFT INC	9/30/1999	$500	Bush, George W
KELLY, JOHN MR KIRKLAND, WA 98033	MICROSOFT/ATTORNEY	2/29/2000	$500	Bush, George W
NIELSEN, TOD MR REDMOND, WA 98053	MICROSOFT/DEVELOPING/MARKETING	12/23/1999	$500	Bush, George W
RAVANI, ANTHONY MR INFO REQUESTED,	MICROSOFT/EXECUTIVE	2/29/2000	$500	Bush, George W
NIXON, TOBY L MR KIRKLAND, WA 98034	MICROSOFT/MANAGER	2/29/2000	$500	Bush, George W
YANG, LIAN MR WOODINVILLE, WA 98072	MICROSOFT/SOFTWARE DESIGN ENGINEER	1/24/2000	$500	Bush, George W
JAKSTADT, ERIC MR WOODINVILLE, WA 98072	MICROSOFT/SOFTWARE DEVELOPER	3/7/2000	$500	Bush, George W
JAKSTADT, ERIC MR WOODINVILLE, WA 98072	MICROSOFT/SOFTWARE DEVELOPER	1/31/2000	$500	Bush, George W
GREGG, DIANNE L SUDBURY, MA 01776	MICROSOFT INC	9/14/1999	$400	Bush, George W
HOKE, STEVE KIRKLAND, WA 98034	MICROSOFT	6/30/1999	$300	Bush, George W
HARRISON, ARTHUR B MR CHARLOTTE, NC	MICROSOFT/SOFTWARE ENGINEER	2/29/2000	$300	Bush, George W

28277				
LINDELL, STEVE MR BELLEVUE, WA 98008	MICROSOFT CORP/ENGINEER	10/11/2000	$250	Bush, George W
WARD, JAMES I MR CHARLOTTE, NC 28270	MICROSOFT CORPORATION/TECHNICAL MAN	3/8/2000	$250	Bush, George W
REMALA, RAO V WOODINVILLE, WA 98072	MICROSOFT INC	9/30/1999	$250	Bush, George W
WURDEN, FREDERICK L MR REDMOND, WA 98053	MICROSOFT/MANAGER	2/29/2000	$250	Bush, George W
NIXON, TOBY L MR KIRKLAND, WA 98034	MICROSOFT/MANAGER	4/13/2000	$200	Bush, George W
MASTERS, JERRY R MR WOODINVILLE, WA 98072	MICROSOFT/FINANCE	9/18/2000	-$500	Bush, George W
EISLER, CRAIG REDMOND, WA 98053	MICROSOFT	8/4/1999	-$1,000	Bush, George W
MATHEWS, MICHELLE J BELLEVUE, WA 98004	MICROSOFT CORP	8/12/1999	-$1,000	Bush, George W
BERENSON, HAROLD MR WOODINVILLE, WA 98072	MICROSOFT CORP.	8/1/2000	-$1,000	Bush, George W
PETERS, G CHRISTOPHER MEDINA, WA 98039	MICROSOFT CORPORATION	8/18/1999	-$1,000	Bush, George W
FERNANDEZ, ROLAND L MR WOODINVILLE, WA 98072	MICROSOFT CORPORATION/ENGINEER	4/21/2000	-$1,000	Bush, George W
BRESEMANN, JOHN K MR REDMOND, WA 98053	MICROSOFT/SOFTWARE ENGINEER	11/6/2000	-$1,000	Bush, George W
NIELSEN, TOD MR REDMOND, WA 98053	MICROSOFT/VICE PRESIDENT	2/2/2000	-$1,000	Bush, George W

2000 cycle data downloaded from FEC on November 1, 2001. Date of request: January 2, 2002

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2000 CYCLE | 2002 CYCLE

John Ashcroft (R)

1999-2000 PAC Contributions: $2,025,323
Based on data released by the FEC on Thursday, November 01, 2001.

⊞ Agribusiness	$154,937
⊟ Communic/Electronics	$204,899
⊞ Printing & Publishing	$27,000
⊞ TV/Movies/Music	$47,499
⊞ Telephone Utilities	$60,450
⊞ Telecom Services & Equipment	$26,450
⊞ Electronics Mfg & Services	$6,000
⊟ Computer Equipment & Services	$37,500
⊞ 3Com Corp	$1,000
⊞ Amazon.com	$1,000
⊞ America Online	$5,000
⊞ Cable & Wireless USA	$1,000
⊞ Ceridian Corp	$2,000
⊞ Compaq Computer	$1,000
⊞ Computer Sciences Corp	$2,000
⊞ EDS Corp	$1,000
⊞ Gateway Inc	$4,500
⊞ Intel Corp	$3,000
⊟ Microsoft Corp	$9,000
3/2/1999	$1,000
6/16/1999	$1,000
6/28/1999	$1,000
9/29/1999	$1,000
12/9/1999	$1,000
2/9/2000	$1,000
5/12/2000	$1,000
6/20/2000	$1,000
9/7/2000	$1,000
⊞ Oracle Corp	$1,000
⊞ Storage Technology Corp	$1,000

⊞ Sun Microsystems	$2,000
⊞ Technology Network Federal PAC	$3,000
⊞ Construction	$123,000
⊞ Defense	$17,000
⊞ Energy/Nat Resource	$210,550
⊞ Finance/Insur/RealEst	$329,208
⊞ Health	$140,000
⊞ Lawyers & Lobbyists	$69,023
⊞ Transportation	$209,050
⊞ Misc Business	$304,666
⊞ Labor	$9,000
⊞ Ideology/Single-Issue	$251,890
⊞ Other	$1,100
⊞ Unknown	$1,000

Results: Individual Donors Search

105 records found in .03 seconds.

SEARCH CRITERIA:
Donor name: microsoft
Election cycle(s): 2002 2000

Start another search

Sort by Name
Sort by Date
Sort by Amount

Records 1 - 49:

Contributor	Occupation	Date	Amount	Recipient
MICROSOFT WASHINGTON, DC 20036		4/16/2001	$15,000	DNC/Non-Federal Corporate
MICROSOFT REDMOND, WA 98052		6/27/2000	$100,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		3/31/2000	$55,000	NRSC/Non-Federal
MICROSOFT REDMOND, WA 98052		1/6/2000	$35,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		6/30/2000	$5,000	Ashcroft Victory Cmte Non-Federal
MICROSOFT WASHINGTON, DC 20036		7/29/1999	$5,000	DNC/Non-Federal Corporate
MICROSOFT REDMOND, WA 98052		10/17/2001	$25,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		10/13/2000	$25,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		6/16/2000	$25,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		4/12/2000	$5,000	RNC/Cmte to Preserve Eisenhower Ctr
MICROSOFT REDMOND, WA 98052		5/5/1999	$25,000	RNC/Repub National State Elections Cmte
MICROSOFT WASHINGTON, DC 20036		12/31/1999	$45,000	NRSC/Non-Federal
MICROSOFT REDMOND, WA 98052		12/31/1999	$32,500	DCCC/Non-Federal Account 1
MICROSOFT REDMOND, WA 98052		10/13/2000	$20,000	RNC/Repub National State Elections Cmte
MICROSOFT WASHINGTON, DC 20036		8/10/2000	$15,000	DNC/Non-Federal Corporate

MICROSOFT WASHINGTON, DC 20036		8/31/1999	$15,000	DNC/Non-Federal Corporate
MICROSOFT REDMOND, WA 98052		5/6/1999	$15,000	DNC/Non-Federal Corporate
MICROSOFT REDMOND, WA 98052		6/30/1999	$15,000	DNC/Non-Federal Corporate
MICROSOFT REDMOND, WA 98052		12/17/1999	$15,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		9/23/1999	$10,000	DCCC/Non-Federal Account 1
MICROSOFT REDMOND, WA 98052		10/20/1999	$10,000	DCCC/Non-Federal Account 1
MICROSOFT REDMOND, WA 98052		3/10/1999	$10,000	DCCC/Non-Federal Account 1
MICROSOFT REDMOND, WA 98052		3/6/2001	$5,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		12/16/1999	$10,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		7/29/1999	$10,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		1/31/2001	$7,900	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		1/25/2001	$10,000	RNC/Repub National State Elections Cmte
MICROSOFT REDMOND, WA 98052		2/15/2001	$10,000	RNC/Repub National State Elections Cmte
MICROSOFT WASHINGTON, DC 20036		6/27/2001	$10,000	DNC/Non-Federal Corporate
MICROSOFT CORP REDMOND, WA 98052		1/17/2001	$15,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		9/26/2001	$20,179	NRSC/Building Fund
MICROSOFT CORP REDMOND, WA 98052		3/30/2001	$50,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		5/17/1999	$60,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		9/14/2000	$5,831	RNC/Repub National State Elections Cmte
MICROSOFT CORP WASHINGTON, DC 20036		6/28/2000	$30,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		6/7/2000	$321	National Abortion Rights Action League
MICROSOFT CORP REDMOND, WA 98052		10/26/2000	$25,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		10/26/2000	$25,000	NRSC/Non-Federal
MICROSOFT CORP				

REDMOND, WA 98052		3/30/2001	$25,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		6/4/2001	$25,000	NRSC/Non-Federal
MICROSOFT CORP REDMOND, WA 98052		6/4/2001	$25,000	NRSC/Non-Federal
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MICROSOFT CORPORATION REDMOND, WA 98052		1/18/2001	$250	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION REDMOND, WA 98052		2/12/2001	$250	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION REDMOND, WA 98052		5/23/2001	$40,000	2001 President's Dinner/Non-Fed Trust
MICROSOFT CORPORATION REDMOND, WA 98052		8/21/2001	$50,000	RNC/Repub National State Elections Cmte
MICROSOFT CORPORATION REDMOND, WA 98052		3/30/2001	$50,000	DSCC/Non-Federal Corporate

[redacted]

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MICROSOFT CORPORATION REDMOND, WA 98052		6/8/2001	$50,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION WASHINGTON, DC 20036		6/16/1999	$350	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		10/20/2000	$60,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/30/2000	$35,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		4/11/2000	$33,690	NRSC/Non-Federal
MICROSOFT CORPORATION REDMOND, WA 98052		4/4/2000	$30,000	2000 Republican H/S Dinner Trust Non-Fed
MICROSOFT CORPORATION REDMOND, WA 98052		7/26/1999	$30,000	1999 Republican S/H Dinner Trust Non-Fed
MICROSOFT CORPORATION REDMOND, WA 98052		12/31/1999	$5,000	Ashcroft Victory Cmte Non-Federal
MICROSOFT CORPORATION REDMOND, WA 98052		3/30/2001	$2,500	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION				DSCC/Non-Federal

CORPORATION REDMOND, WA 98052		9/13/1999	$5,000	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION WASHINGTON, DC 20036		11/29/1999	$25,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, WA 98052		11/3/1999	$25,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, WA 98052		8/2/2000	$2,500	DCCC/Non-Federal Account 1
MICROSOFT CORPORATION WASHINGTON, DC 20036		8/30/2000	$25,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/27/2000	$25,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		10/22/1999	$25,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/23/1999	$25,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		6/22/2000	$2,500	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/23/1999	$2,500	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		4/21/2000	$698	NRSC/Non-Federal
MICROSOFT CORPORATION WASHINGTON, DC 20036		6/30/2000	$5,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		11/3/2000	$25,000	RNC/Repub National State Elections Cmte
MICROSOFT CORPORATION REDMOND, WA 98052		3/28/2001	$25,000	DCCC/Non-Federal Account 1

MICROSOFT CORPORATION WASHINGTON, DC 20005		4/24/2001	$100,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		10/11/2000	$75,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		4/11/2000	$51,832	NRSC/Non-Federal
MICROSOFT CORPORATION REDMOND, WA 98052		3/30/2000	$56,542	DCCC/Non-Federal Account 1
MICROSOFT CORPORATION REDMOND, WA 98052		6/30/2000	$50,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, VA 98073		2/26/1999	$50,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, WA 98052		10/26/1999	$50,000	RNC/Repub National State Elections Cmte
MICROSOFT CORPORATION REDMOND, WA 98052		4/17/2000	$40,000	DSCC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, WA 98052		2/16/2000	$40,000	RNC/Repub National State Elections Cmte
MICROSOFT CORPORATION WASHINGTON, DC 20036		6/30/2000	$22,500	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		4/17/2000	$15,000	DCCC/Non-Federal Account 1
MICROSOFT CORPORATION WASHINGTON, DC 20036		6/30/2000	$20,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		4/21/2000	$453	NRSC/Non-Federal
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/27/2000	$15,000	NRCC/Non-Federal Account

MICROSOFT CORPORATION WASHINGTON, DC 20036		3/23/1999	$15,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		5/24/2000	$8,985	2000 Republican H/S Dinner Trust Non-Fed
MICROSOFT CORPORATION REDMOND, WA 98052		12/31/1999	$500	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/23/1999	$7,500	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		2/29/2000	$10,000	DCCC/Non-Federal Account 1
MICROSOFT CORPORATION REDMOND, WA 98052		6/8/2000	$250	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION REDMOND, WA 98052		6/8/2000	$250	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION WASHINGTON, DC 20036		8/24/1999	$250	DSCC/Non-Federal Mixed
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/7/2000	$10,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20036		3/23/1999	$10,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20005		6/25/2001	$5,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION WASHINGTON, DC 20005		6/25/2001	$5,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION REDMOND, WA 98052		9/27/2001	$10,000	RNC/Repub National State Elections Cmte

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Election cycle(s): 2002 2000

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Records 100 - 105:

Contributor	Occupation	Date	Amount	Recipient
MICROSOFT CORPORATION WASHINGTON, DC 20005		1/16/2001	$10,000	NRCC/Non-Federal Account
MICROSOFT CORPORATION RICHMOND, WA 98052		5/11/2001	$10,000	DNC/Non-Federal Corporate
MICROSOFT CORPORATION REDMOND, WA 98052		6/18/2001	$10,000	DCCC/Non-Federal Account 1
MICROSOFT CORPORATION PAC ARLINGTON, VA		5/11/2001	$1,000	New Democrat Network
MICROSOFT EXCEL FAIRVIEW, NC 28730		7/27/1999	$500	NRCC/Non-Federal Account

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ATTACHMENT 2

TO THE

DECLARATION OF BRIAN DAUTCH

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The Center for Responsive Politics

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The Center for Responsive Politics is a non-partisan, non-profit research group based in Washington, D.C. that tracks money in politics, and its effect on elections and public policy. The Center conducts computer-based research on campaign finance issues for the news media, academics, activists, and the public at large. The Center's work is aimed at creating a more educated voter, an involved citizenry, and a more responsive government.

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MTC-00030631_0752

ATTACHMENT 3

TO THE

DECLARATION OF BRIAN DAUTCH

Statement of Charles F. (Rick) Rule
Fried Frank Harris Shriver & Jacobson
Counsel for Microsoft Corporation

Before the Committee on the Judiciary
United States Senate
December 12, 2001

Mr. Chairman and members of the Committee, good morning. It is a pleasure to appear before you today on behalf of Microsoft Corporation to discuss the proposed consent decree or Revised Proposed Final Judgment (the "PFJ") to which the U.S. Department of Justice and nine of the plaintiff states have agreed. As this committee is aware, I am counsel to Microsoft in the case and was one of the principal representatives for the company in the negotiations that led to the proposed consent decree.

The PFJ was signed on November 6th after more than a month of intense, around-the-clock negotiations with the Department and representatives of all the plaintiff states. The decree is currently subject to a public interest review by Judge Kollar-Kotelly under the Tunney Act . Because we are currently in the midst of that review and because nine states and the District of Columbia have chosen to continue the litigation, I must be somewhat circumspect in my remarks. However, what I can -- indeed, must -- stress is that, in light of the Court of Appeals' decision last summer to "drastically" reduce the scope of Microsoft's liability and in light of the legal standards for imposing injunctive relief, the Department and the settling states were very effective in negotiating for broad, strong relief. As the chart in the appendix depicts, ever since the Department and the plaintiff states first filed their complaints in May 1998, the case has been shrinking. What began with five claims, was whittled down to a single monopoly maintenance claim by a unanimous Court of Appeals. Even with respect to that surviving claim, the appellate court affirmed Judge Jackson's findings on only about a third (12 of 35) of the specific acts which the district court had found support that claim.

Given that history and the law, there is no reasonable argument that the PFJ is too narrow or that it fails to achieve all the relief to which the Department was entitled. In fact, as these remarks explain, the opposite is true -- faced with tough, determined negotiators on the other side of the table, Microsoft agreed to a decree that goes substantially beyond what the plaintiffs were likely to achieve through litigation. Quite frankly, the PFJ is the strongest, most regulatory conduct decree ever obtained (through litigation or settlement) by the Department.

Why then, one might ask, would Microsoft consent to such a decree? There are two reasons. First, the company felt strongly that it was important to put this matter behind it and to move forward constructively with its customers, its business partners, and the government. For four years, the litigation has consumed enormous resources and been a serious distraction. The constant media drumbeat has obscured the fact that the company puts a premium on adhering to its legal obligations and on developing and maintaining excellent relationships with its partners and customers. Litigation is never a pleasant experience, and given the magnitude of this case and the media attention it attracted, it is hard to imagine any more costly, unpleasant civil litigation.

Second, while the Department pushed Microsoft to make substantial, even excessive concessions to get a settlement, there were limits to how far the company was willing or able to go (limits, by the way, which the Department and the settling states managed to reach). Microsoft was fighting for an important principle -- the ability to innovate and improve its products and services for the benefit of

consumers. To that end, Microsoft insisted that the decree be written in a way to allow the company to engage in legitimate competition on the merits. Despite the substantial burdens the decree will impose on Microsoft and the numerous ways in which Microsoft will be forced to alter its conduct, the decree does preserve Microsoft's ability to innovate, to improve its products, and to engage in procompetitive business conduct that is necessary for the company to survive.

In short, at the end of the negotiations, Microsoft concluded that the very real costs that the decree imposes on the company are outweighed by the benefits, not just to Microsoft but to the PC industry and consumers generally.

The Court of Appeals' "Road Map" for Relief

In order to evaluate the decree, one must first appreciate the history of this case and how drastically the scope of Microsoft's liability was narrowed at the appellate level. When this case began with the filing of separate complaints by the Department and the plaintiff states in May of 1998, it was focused on Microsoft's integration of browsing functionality called Internet Explorer or IE into Windows 98, which the plaintiffs alleged to be an illegal tying arrangement.

The complaints of the Department and the states included five separate claims: (1) a claim under section 1 of the Sherman Act that the tie-in was per se illegal; (2) another claim under section 1 that certain promotion and distribution agreements with Internet service providers (ISPs), Internet content providers (ICPs), and on-line service providers (OSPs) constituted illegal exclusive dealing; (3) a claim under section 2 of the Sherman Act that Microsoft had attempted to monopolize Web browsing software; (4) a catch-all claim under section 2 that the alleged conduct that underlay the first three claims amounted to illegal maintenance of Microsoft's monopoly in PC operating systems; and (5) a claim by the plaintiff states (but not part of the Department's complaint) under section 2 that Microsoft illegally "leveraged" its monopoly in PC operating systems. As discovery got underway, the case dramatically expanded as the plaintiffs indiscriminately began identifying all manner of Microsoft conduct as examples of the company's illegal efforts to maintain its monopoly. But then, the case began to shrink.

" In response to Microsoft's motion for summary judgment, the district court dismissed the states' Monopoly leveraging claim (claim 5).

" After trial, Judge Jackson held that the plaintiffs failed to prove that Microsoft's arrangements with ISPs, ICPs, and OSPs violated section 1 (claim 2).

" Judge Jackson did, however, conclude that the plaintiffs had sustained their claims that Microsoft illegally tied IE to Windows (claim 1), illegally attempted to monopolize the browser market (claim 3), and illegally maintained its monopoly (claim 4), basing his decision on 35 different actions engaged in by Microsoft.

" In a unanimous decision of the Court of Appeals sitting en banc, the court reversed the trial court on the attempted monopolization claim (claim 3) and remanded with instructions that judgment be entered on that claim in favor of Microsoft.

" The unanimous court also reversed Judge Jackson's decision with respect to the tie-in claim (claim 1). The appellate court held that, in light of the prospect of consumer benefit from integrating new functionality into platform software such as Windows, Microsoft's integration of IE into Windows

had to be judged under the rule of reason rather than the per se approach taken by Judge Jackson. The Court of Appeals refused to apply the per se approach because of "our qualms about redefining the boundaries of a defendant's product and the possibility of consumer gains from simplifying the work of applications developers [by ensuring the ubiquitous dissemination of compatible APIs]." The court's decision did allow the plaintiffs on remand to pursue the tie-in claim on a rule of reason theory; however, shortly after the remand, the plaintiffs announced they were dropping the tie-in claim.

" With respect to the only remaining claim (monopoly maintenance - claim 4), the Court of Appeals affirmed in part and reversed in part the lower court and substantially shrank Microsoft's liability. After articulating a four-step burden-shifting test that is highly fact intensive, the appellate court reviewed the 35 different factual bases for liability and rejected nearly two-thirds of them.

¢ In the case of seven of those 35 findings (concerning such conduct as Microsoft's refusal to allow OEMs to replace the Windows desktop, Microsoft's design of Windows to "override the user's choice of a default browser," and Microsoft's development of a Java virtual machine (JVM) that was incompatible with Sun's JVM), the appellate court specifically reversed Judge Jackson's decision.

¢ The Court of Appeals dismissed sixteen of the remaining findings by reversing Judge Jackson's holding that Microsoft had engaged in a general "course of conduct" that amounted to illegal monopoly maintenance -- the so-called "monopoly broth" theory.

¢ With respect to the remaining twelve findings (concerning such things as Microsoft's refusal to allow PC manufacturers (OEMs) to remove end-user access to IE, Microsoft's exclusive arrangements with ISPs, and its "commingling" of software code to frustrate OEMs ability to hide access to IE), the court did affirm Judge Jackson's findings as not being "clearly erroneous." And even as to those twelve, a number were practices -- for example, the arrangements with ISPs -- that Microsoft had already ceased.

As a result, when the case was remanded to the district court and reassigned to Judge Kollar-Kotelly, four-fifths of the original claims were all but gone. With respect to the sole surviving claim, nearly two-thirds of the supporting findings had been rejected by the Court of Appeals. In the words of the Court of Appeals, its decision "drastically altered the scope of Microsoft's liability."

The Relevance of the Drastic Narrowing of Liability

The Court of Appeals' decision makes clear the critical significance of the drastic reduction in the scope of Microsoft's liability in terms of the relief to which the plaintiffs are entitled. As the court noted in instructing the lower court on how the remand for remedy should be handled,

"A court . . . must base its relief on some clear 'indication of a significant causal connection between the conduct enjoined or mandated and the violation found directed toward the remedial goal intended.' 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW 653(b), at 91-92 (1996). In a case such as the one before us where sweeping equitable relief is employed to remedy multiple violations, and some -- indeed most -- of the findings of remedial violations do not withstand appellate scrutiny, it is necessary to vacate the remedy decree since the implicit findings of causal connection no longer exist to warrant our deferential affirmance. . . . In particular, the [district] court should consider which of the decree's conduct restrictions remain viable in light of our modification of the original liability decision."

At the time Judge Kollar-Kotelly ordered the parties into intensive negotiations, she clearly recognized the importance of the drastic alteration to the scope of Microsoft's liability. The judge informed the government that its "first and most obvious task is going to be to determine which portions of the former judgment remain appropriate in light of the appellate court's ruling and which portions are unsupported following the appellate court's narrowing of liability." The judge went on to note that "the scope of any proposed remedy must be carefully crafted so as to ensure that the enjoining conduct falls within the [penumbra] of behavior which was found to be anticompetitive." The judge also stated that "Microsoft argues that some of the terms of the former judgment are no longer appropriate, and that is correct. I think there are certain portions where the liability has been narrowed."

Before discussing the negotiations and the decree itself, I would like to make three other points about the crafting of antitrust remedies that also are relevant to considering the relief to which the plaintiffs were entitled. First, the critics of the PFJ routinely ignore the fact that the Department has long acknowledged that Microsoft lawfully acquired its monopoly position in PC operating systems. Indeed, the Department retained a Nobel laureate in the first Microsoft case in 1994 to submit an affidavit to the district court opining that Microsoft had reached its position in PC operating systems through luck, skill, and foresight. It is true of course that Microsoft has now been found liable for engaging in conduct that amounted to illegal efforts to maintain that position; however, there is precious little in the record establishing any causal link between the twelve illegal acts of "monopoly maintenance" and Microsoft's current position in the market for PC operating systems. Thus, contrary to the critics' overheated rhetoric, there is no basis for relief designed to terminate an "illegal monopoly."

Second, decrees in civil antitrust cases are designed to remedy, not to punish. All too often, the critics of this decree speak as though Microsoft was convicted of a crime. It was not. This is a civil case, subject to the rules of civil rather than criminal procedure. To the extent the plaintiffs tried to get relief that could be deemed punitive, that relief would have been rejected.

Third, a decree must serve the purposes of the antitrust laws, which is a "consumer welfare prescription." I realize we are in the "season of giving," but an antitrust decree is not a Christmas tree to fulfill the wishes of competitors, particularly where that fulfillment comes at the expense of consumer welfare. Calls for royalty-free licensing of Microsoft's intellectual property, or for imposing obligations on Microsoft to distribute third party software at no charge, or for Microsoft to facilitate the distribution of an infinite variety of bastardized versions of Windows (and make sure they all run perfectly) are great for a small group of competitors who know that such provisions will quickly destroy Microsoft's incentives and ability to compete (not to mention violate the Constitution's proscription against "takings"). Such calls, however, are anathema to consumers' interests in a dynamic, innovative computer industry. Twenty years ago, my old boss and antitrust icon, Bill Baxter, warned about the anticompetitive consequences of antitrust decrees designed simply to "add sand to the saddlebags" of a particularly fleet competitor like Microsoft. It's a warning the courts would certainly heed today.

To their credit, the negotiators for the Department and the settling states understood these three fundamental antitrust principles. While we may have had to remind the other side of these principles from time to time, we did not have to negotiate for their adherence to them. Taxpayers and consumers can be proud that their interests were represented by honorable men and women with the utmost respect for the rule of law. For others to insinuate that, by agreeing to a decree that honors these three

fundamental principles, the Department and the settling states "caved" or settled for inadequate relief is as offensive as it is laughable.

The Negotiations

It is against the background I have sketched that, on September 27th, Judge Kollar-Kotelly ordered the parties into intensive, "around the clock" negotiations. Microsoft had already indicated publicly its strong desire to try to settle the case, and so it welcomed the judge's order. As has been widely reported, all the parties in the case took the court's order very seriously. Microsoft assembled in Washington, D.C., a core team of in-house and outside lawyers who have been living with this case for years, and who spent virtually all of the next five weeks camped out in my offices down the street. Microsoft's top legal officer was in town during much of the period directing the negotiations. Back in Redmond, the company's most senior executives devoted a great deal of time and energy to the process, and we were all supported by a large group of dedicated lawyers, businesspeople, and staff.

From my vantage point, the Department and the states (at least those that settled) made an equivalent effort. As the mediator wrote after the process ended, "No party was left out of the negotiations. ... Throughout most of the mediation the 19 states (through their executive committee representatives) and the federal government (through the staff of the antitrust division) worked as a combined 'plaintiffs' team." Jay Himes from the office of the New York Attorney General Eliot Spitzer and Beth Finnerty from the office of the Ohio Attorney General Betty Montgomery represented the states throughout the negotiations, putting in the same long hours as the rest of us. At various points Mr. Himes and Ms. Finnerty were joined by representatives from other states, including Kevin O'Connor from the office of Wisconsin Attorney General James Doyle.

The negotiations began on September 28th and continued virtually non-stop until November 6th. During the first two weeks, we negotiated without the benefit of a mediator. As they say in diplomatic circles, the discussions were "full and frank." The Department lawyers and the state representatives in the negotiation were extremely knowledgeable, diligent, and formidable.

Microsoft certainly hoped to be able to reach a settlement quickly and before a mediator was designated. However, the views on all sides were sufficiently strong and the need to pay attention to every sentence, phrase, and punctuation mark so overwhelming that reaching agreement proved impossible in those first two weeks. Eric Green, a prominent mediation specialist, was appointed by the court and with the help of Jonathan Marks spent the next three weeks helping the parties find common ground. As Professor Green and Mr. Marks wrote after the mediation ended,

"Successful mediations are ones in which mediators and parties work to identify and overcome barriers to reaching agreement. Successful mediations are ones in which all the parties engage in reasoned discussions of issues that divide them, of options for settlement, and of the risks, opportunities, and costs that each party faces if a settlement isn't reached. Successful mediations are ones in which, settle or not, senior representatives of each party have made informed and intelligent decisions. The Microsoft mediation was successful."

Working day and night virtually until the original November 2 deadline set by the judge, Microsoft and the Department agreed to and signed a decree early on November 2. The representatives of the states also tentatively agreed, subject to an opportunity from November 2 until November 6 to confer with the other states that were more removed from the case and negotiations. During that period, the states requested several clarifying modifications to which Microsoft (and the Department) agreed.

From press reports, it appears that during this period the plaintiff states also were being subjected to intense lobbying by a few of Microsoft's competitors who were desperate either to get a decree that would severely cripple if not eventually destroy Microsoft or at least to keep the litigation (and the attendant costs imposed on Microsoft) going. Notwithstanding that pressure, New York, Wisconsin, and Ohio -- the states that had made the largest investment in litigating against Microsoft and in negotiating a settlement -- along with six other plaintiff states represented by a bipartisan group of state attorneys general signed onto the Revised PFJ on November 6.

The Proposed Final Judgment

Throughout the negotiations, Microsoft was confronted by a determined and tough group of negotiators for the Department and the states. They made clear that there would be no settlement unless Microsoft went well beyond the relief to which, Microsoft believes, the Court of Appeals opinion and the law entitles the plaintiffs. Once that became clear, Microsoft relented in significant ways, subject only to narrow language that preserved Microsoft's ability to innovate and engage in normal, clearly procompetitive activities. Professor Green, the one neutral observer of this drama, has noted the broad scope of the prohibitions and obligations imposed on Microsoft by the PFJ, stating during the status conference with Judge Kollar-Kotelly that "the parties have not stopped at the outer limits of the Court of Appeals' decision, but in some important respects the proposed final judgment goes beyond the issues affirmed by the Court of Appeals to deal with issues important to the parties in this rapidly-changing technology."

I do not intend today to provide a detailed description of each provision of the PFJ; the provisions speak for themselves. It may come as something of a surprise in light of some of the uninformed criticism hurled at the decree, but one of Microsoft's principal objectives during the negotiations was to develop proscriptions and obligations that were sufficiently clear, precise and certain to ensure that the company and its employees would be able to understand and comply with the decree without constantly engendering disputes with the Department. This is an area of complex technology and the decree terms on which the Department insisted entailed a degree of technical sophistication that is unprecedented in an antitrust decree. Drafting to these specifications was not easy, but the resulting PFJ is infinitely clearer and easier to administer than the conduct provisions of the decree that Judge Jackson imposed in June 2000.

If, as one might suspect would be the outcome in a case such as this, the PFJ were written to proscribe only the twelve practices affirmed by the Court of Appeals, the decree would be much shorter and simpler. The Department and settling states, however, insisted that the decree go beyond just focused prohibitions to create much more general protections for a potentially large category of software, which the PFJ calls "middleware." But even these expansive provisions to foster middleware competition were not sufficient to induce the Department and the states to settle; rather, they insisted that Microsoft also agree to additional obligations that bear virtually no relationship to any of the issues addressed by the district court and the Court of Appeals. And lastly they insisted on unprecedented enforcement provisions. I will briefly describe each of these three sets of provisions.

1. Protections for "Middleware"

The case that the plaintiffs tried and the narrowed liability that survived appellate review all hinged on claims that Microsoft took certain actions to exclude Netscape's Navigator browser and Sun's Java technology from the market in order to protect the Windows operating system monopoly. The plaintiffs successfully argued that Microsoft feared that Navigator and Java, either alone or together,

might eventually include and expose a broad set of general purpose APIs to which software developers could write as an alternative to the Windows APIs. Since Navigator and Java can run on multiple operating systems, if they developed into general purpose platforms, Navigator and Java would provide a means of overcoming the "applications barrier" to entry and threaten the position of the Windows operating system as platform software.

A person might expect that a decree designed to address such a monopoly maintenance claim would provide relief with respect to Web-browsing software and Java or, at most, to other general purpose platform software that exposes a broad set of APIs and is ported to run on multiple operating systems. The PFJ goes much further. The Department insisted that obligations imposed on Microsoft by the decree extend to a range of software that has little in common with Navigator and Java. The decree applies to "middleware" broadly defined to include, in addition to Web-browsing software and Java, instant messaging software, media players, and even email clients -- software that, Microsoft believes, has virtually no chance of developing into broad, general purpose platforms that might threaten to displace the Windows platform. In addition, there is a broad catch-all definition of middleware that in the future is likely to sweep other similar software into the decree.

This sweeping definition of middleware is significant because of the substantial obligations it imposes on Microsoft. Those obligations -- a number of which lack any correspondence to the monopoly maintenance findings that survived appellate review -- are intended to create protections for all the vendors of software that fits within the middleware definition. Taken together, the decree provisions provide the following protections and opportunities:

" Relations with Computer Makers. Microsoft has agreed not to retaliate against computer makers who ship software that competes with anything in its Windows operating system.

" Computer Maker Flexibility. Microsoft has agreed to grant computer makers broad new rights to configure Windows so as to promote non-Microsoft software programs that compete with features of Windows. Computer makers will now be free to remove the means by which consumers access important features of Windows, such as Internet Explorer, Windows Media Player, and Windows Messenger. Notwithstanding the billions of dollars Microsoft invests developing such cool new features, computer makers will now be able to replace access to them in order to give prominence to non-Microsoft software such as programs from AOL Time Warner or RealNetworks. (Additionally, as is the case today, computer makers can provide consumers with a choice --that is to say access to Windows features as well as to non-Microsoft software programs.)

" Windows Design Obligations. Microsoft has agreed to design future versions of Windows, beginning with an interim release of Windows XP, to provide a mechanism to make it easy for computer makers, consumers and software developers to promote non-Microsoft software within Windows. The mechanism will make it easy to add or remove access to features built in to Windows or to non-Microsoft software. Consumers will have the freedom to choose to change their configuration at any time.

" Internal Interface Disclosure. Even though there is no suggestion in the Court of Appeals' decision that Microsoft fails to disclose APIs today and even though the Court of Appeals' holding on monopoly power is predicated on the idea that there are tens of thousands of applications written to call upon those APIs, Microsoft has agreed to document and disclose for use by its competitors various interfaces that are internal to Windows operating system products.

" Relations with Software Developers. Microsoft has agreed not to retaliate against software or hardware developers who develop or promote software that competes with Windows or that runs on software that competes with Windows.

" Contractual Restrictions. Microsoft has agreed not to enter into any agreements obligating any third party to distribute or promote any Windows technology exclusively or in a fixed percentage, subject to certain narrow exceptions that apply to agreements raising no competitive concern. Microsoft has also agreed not to enter into agreements relating to Windows that obligate any software developer to refrain from developing or promoting software that competes with Windows.

These obligations go far beyond the twelve practices that the Court of Appeals found to constitute monopoly maintenance. One of the starkest examples of the extent to which these provisions go beyond the Court of Appeals decision relates to Microsoft's obligations to design Windows in such a way as to give third parties the ability to designate non-Microsoft middleware as the "default" choice in certain circumstances in which Windows might otherwise be designed to utilize functionality integrated into Windows. As support for his monopoly maintenance conclusion, Judge Jackson had relied on several circumstances in which Windows was designed to override the end users' choice of Navigator as their default browser and instead to invoke IE. The Court of Appeals, however, reviewed those circumstances and reversed Judge Jackson's conclusion on the ground that Microsoft had "valid technical reasons" for designing Windows as it did. Notwithstanding this clear victory, Microsoft acceded to the Department's demands that it design future versions of Windows to ensure certain default opportunities for non-Microsoft middleware.

2. Uniform Prices and Server Interoperability

Nevertheless, agreeing to this wide range of prohibitions and obligations designed to encourage the development of middleware broadly defined was not enough to get the plaintiffs to settle. Instead, they insisted on two additional substantive provisions that have absolutely no correspondence to the findings of monopoly maintenance liability that survived appeal.

" Uniform Price List. Microsoft has agreed to license its Windows operating system products to the 20 largest computer makers (who collectively account for the great majority of PC sales) on identical terms and conditions, including price (subject to reasonable volume discounts for computer makers who ship large volumes of Windows).

" Client/Server Interoperability. Microsoft has agreed to make available to its competitors, on reasonable and non-discriminatory terms, any protocols implemented in Windows desktop operating systems that are used to interoperate natively with any Microsoft server operating system.

In the case of the sweeping definition of middleware and the range of prohibitions and obligations imposed on Microsoft, there is at least a patina of credibility to the argument that the penumbra of the twelve monopoly maintenance practices affirmed by the Court of Appeals can be stretched to justify those provisions, at least as "fencing in" provisions. There is no sensible reading of the Court of Appeals decision that would provide any basis for requiring Microsoft to charge PC manufacturers uniform prices or to make available the proprietary protocols used by Windows desktop operating systems and Windows server operating systems to communicate with each other. Nevertheless, because the plaintiffs insisted that they would not settle without those two provisions, Microsoft also agreed to them.

Before turning to the enforcement provisions of the PFJ, I want to say a word about the few provisos included in the decree that provide narrow exceptions to the various prohibitions and obligations imposed on Microsoft. Those exceptions were critical to Microsoft's willingness to agree to the sweeping provisions on which the plaintiffs insisted. Without these narrowly tailored exceptions, Microsoft could not innovate or engage in normal procompetitive commercial activities. The public can rest assured that the settling plaintiffs insisted on language to ensure that the exceptions only apply when they promote consumer welfare. For example, some companies that compete with Microsoft for the sale of server operating systems apparently have complained about the so-called "security carve-out" to Microsoft's obligation to disclose internal interfaces and protocols. That exception is very narrow and only allows Microsoft to withhold encryption "keys" and the similar mechanisms that must be kept secret if the security of computer networks and the privacy of user information is to be ensured. In light of all the concern over computer privacy and security these days, it is surprising that there is any controversy over such a narrow exception.

3. Compliance and Enforcement

The broad substantive provisions of the PFJ are complemented by an unusually strong set of compliance and enforcement provisions. Those provisions are unprecedented in a civil antitrust decree. The PFJ creates an independent three-person technical committee, resident on the Microsoft campus, with extraordinary powers and full access to Microsoft facilities, records, employees and proprietary technical data, including Windows source code, which is the equivalent of the "secret formula" for Coke. The technical committee provides a level of technical oversight that is far more substantial than any provision of any other antitrust decree of which I am aware. At the insistence of the plaintiffs, the technical committee does not have independent enforcement authority; rather, reports to the plaintiffs and, through them, to the court. The investigative and oversight authority of the technical committee in no way limits or reduces the enforcement powers of the DOJ and states; rather, the technical committee supplements and enhances those powers. Each of the settling states and DOJ have the power to enforce the decree and have the ability to monitor compliance and seek a broad range of remedies in the event of a violation.

Microsoft also agreed to develop and implement an internal antitrust compliance program, to distribute the decree and educate its management and employees as to the various restrictions and obligations. In recent years, Microsoft has assembled in-house one of the largest, most talented groups of antitrust lawyers in corporate America. They are already engaged in substantial antitrust compliance counseling and monitoring. The decree formalizes those efforts, and quite frankly adds very substantially to the in-house lawyers' work. As we speak, that group, together with key officials from throughout the Microsoft organization, are working to implement the decree and to ensure the company's compliance with it.

As with the substantive provisions, Microsoft agreed to these unprecedented compliance and enforcement provisions because of the adamance of the plaintiffs and because of the highly technical nature of the decree. Microsoft, the Department, and the settling states recognized that it was appropriate to include mechanisms -- principally, the technical committee -- that will facilitate the prompt and expert resolution of any technical disputes that might be raised by third parties, without in any way derogating from the government's full enforcement powers under the decree. Although the enforcement provisions are unprecedented in their stringency and scope, they are not necessitated or justified by any valid claim that Microsoft has failed to comply with its decree obligations in the past. In fact, Microsoft has an exemplary record of complying with the consent decree to which the

company and the Department agreed in 1994. In 1997, the Department did question whether Microsoft's integration of IE into Windows 95 violated a "fencing in" provision that prohibited contractual tie-ins, but Microsoft was ultimately vindicated by the Court of Appeals. Microsoft has committed itself to that same level of dedication in ensuring the company's compliance with the PFJ.

Conclusion

The PFJ strikes an appropriate balance in this complicated case, providing opportunities and protections for firms seeking to compete while allowing Microsoft to continue to innovate and bring new technologies to market. The decree is faithful to the fact that the antitrust laws are a "consumer protection prescription," and it ensures an economic environment in which all parts of the PC-ecosystem can thrive.

Make no mistake, however, the PFJ is tough. It will impose substantial new obligations on the company, and it will require significant changes in the way Microsoft does business. It imposes heavy costs on the company and entails a degree of oversight that is unprecedented in a civil antitrust case. For some competitors of Microsoft, however, apparently nothing short of the destruction of Microsoft -- or at least the ongoing distraction of litigation -- will be sufficient. But if the objective is to protect the interests of consumers and the competitive process, then this decree more than achieves that goal.

Finally, for all those who are worried about the future and what unforeseen developments may not be covered by this case and the decree, remember that the Court of Appeals decision now provides guideposts, which previously did not exist, for judging Microsoft's behavior, and that of other high technology companies, going forward. Those guidelines, it is true, are not always easy to apply ex ante to conduct; however, now that the Court of Appeals has spoken, we all have a much better idea of the way in which section 2 of the Sherman Act applies to the software industry. In short, what antitrust law requires of Microsoft is today much clearer than it was when this case began. We have all learned a lot over the last four years, and Microsoft has every incentive to ensure that history does not repeat itself.

ATTACHMENT 4

TO THE

DECLARATION OF BRIAN DAUTCH

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Clerk of the House of Representatives

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LOBBYING REGISTRATION

Lobbying Disclosure Act of 1995 (Section 4)

Check if this is an amended registration ☐

REGISTRANT

1. Name of Registrant **Covington & Burling**

   Address **1201 Pennsylvania Avenue, N.W.**

   City **Washington** State **DC** Zip **20004**

2. Principal place of business (*if different from line 1*)

   City **Same** State/Zip (or Country)

3. Telephone number and contact name

   (202) 662-6000 Contact **Stuart Stock**

4. General description of registrant's business or activities
   Law Firm

CLIENT

A lobbying firm is required to file a separate registration for each client. An organization employing in-house lobbyists will indicate "Self" on line 5 and proceed to line 8.

5. Name of Client **Microsoft Corporation**

   Address **One Microsoft Way**

   City **Redmond** State **WA** Zip **98052**

6. Principal place of business (*if different from line 5*)

   City **Same** State/Zip (or Country)

7. General description of client's business or activities
   Computer software company

REGISTRANT EMPLOYEES

8. Name and title of each employee of the registrant who has acted or is expected to act as a lobbyist for the client identified on line 5. Indicate any employee who served as a "covered executive branch official" or "covered legislative branch official" within 2 years before the date that the employee first acted or will act as a lobbyist for the client, *and state the executive or legislative branch position(s) in which the employee served.* Attach Lobbying Registration Addendum if necessary.

   E. Jason Albert, Associate
   Victoria A. Carter, Associate
   Charles F. Rule, Partner
   Laurie C. Self, Of Counsel

MTC-00030631_0765

LOBBYING ISSUES

9. General lobbying issue areas (*select applicable codes, listed in instructions and on reverse side of Form LD-1, page 1*)

CPI CPT TRD

10. Specific lobbying issues (current and anticipated)
- **Protection of intellectual property rights, including copyrights.**
- **Electronic commerce matters.**
- **Competition matters affecting computer software industry.**

AFFILIATED ORGANIZATIONS

11. Name, address, and principal place of business of any entity other than the client that contributes more than $10,000 to the lobbying activities covered by this registration in a semiannual period, and in whole or in part plans, supervises, or controls the registrant's lobbying activities. If none, so state.

Name	Address	Principal place of business (city and state or country)
None		

FOREIGN ENTITIES

12. Name, address, principal place of business, amount of any contribution of more than $10,000, and approximate percentage of equitable ownership in the client of any foreign entity that:

a) holds at least 20% equitable ownership in the client or in any organization identified on line 11; *or*
b) directly or indirectly, in whole or in major part, plans, supervises, controls, directs, finances or subsidizes the activities of the client or any organization identified on line 11; *or*
c) is an affiliate of the client or any organization identified on line 11 and has a direct interest in the outcome of the lobbying activity.

If none, so state.

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client
None				

Signature [signature] Date 6/29/98

Printed Name and Title Stuart C. Stock, Partner

MTC-00030631_0766

ATTACHMENT 5

TO THE

DECLARATION OF BRIAN DAUTCH

MTC-00030631_0768

WALL STREET JOURNAL.

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World-Wide

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THE TALIBAN MADE last-ditch stands as British marines landed north of Kabul.

The Northern Alliance battled 31,000 Taliban and allied fighters encircled in the northern Afghan city of Kunduz, while Pashtun fighters fought to control Kandahar in the south. Mullah Omar, the Taliban leader, spoke by satellite phone with the BBC and vowed to fight to the death and seek America's "extinction." The British marines are to secure Bagram airport for an expected growing deployment of foreign troops. The U.S. also prepared to insert more soldiers to aid in the hunt for Osama bin Laden. New intelligence on his possible whereabouts, as well as chilling data on the weapons he was hoping to develop, came to light. (Articles in Column 1 and on Pages A3, A8, A9 and A10)

The Northern Alliance wants credit for securing the release of eight foreign aid workers, including two Americans, the Taliban was holding. So does Libya.

* * *

An airport-security deal was sealed as Bush blessed an accord reached by House and Senate negotiators on the issue of federalizing screening workers. After a one-year transition, the government is to take over that job. Meanwhile, airlines braced for the first Thanksgiving under tightened security procedures. (Articles on Pages A3 and B1)

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...l investigators are looking into the ...sibility that Flight 587 pilots may

— INSIDE —

WEEKEND JOURNAL.

A Haggler's Christmas
From small boutiques to Saks, a surprising number of stores are letting some customers name their price. How to get in on the holiday deals.

When Every Show's a Survivor
This fall, bad ratings aren't enough to sink new shows. Why 'Emeril' is still cooking.

'Harry Potter' Arrives
Will the Wizard of Hogwarts fly on the big screen? Joe Morgenstern's review.

Nations Supporting Jihads of Yesteryear Now Close Borders

* * *

Yemen, for One, Won't Let Men Bent on Joining the Fight Go Off to Wage a 'Holy War'

By YAROSLAV TROFIMOV
Staff Reporter of THE WALL STREET JOURNAL

SANA, Yemen—Asked what he th about the war in Afghanistan, Abdu...

Washington Wire

A Special Weekly Report From The Wall Street Journal's Capital Bureau

DIRECTOR DANIELS gets GOP votes for "worst ever" relations with Congress.

Sen. Stevens, the Senate Appropriations Committee's top Republican, says so publicly of Bush's budget chief; others complain privately to the White House that they can't deal with Daniels. They charge he is trying to score political points at Congress's expense, to aid a run for the Senate from Indiana later.

Ire erupts after interviews in which Daniels belittles Congress. Cheney goes to the Capitol to rescue a $40 billion emergency-spending bill—and soothe House Appropriations Chairman Young. Daniels's office says it asked Cheney to go; Republicans say that is because Daniels wasn't welcome. With deputy Sean O'Keefe moving to head NASA, longtime GOP budget staffer Bill Hoagland rejects overtures about the job.

With Congress still in town, in speeches Daniels quotes the song, "How can I miss you if you won't go away?"

PENTAGON PLANS for big increases, but hasn't enlisted the budget office.

The services are told to build increases of about $15 billion annually into their plans for the budgets of the next two years. Such rises, inconceivable before Sept. 11, would drive overall military spending to $360 billion by 2004. On the ...ish list: intelligence-gathering sensors and spy drones—in high demand in Afghanistan but low supply.

Last Call?

Under Rising Pressure, AT&T's CEO Tries To Hold On to an Icon

Loaded Down With Debt, Hit by Competition, Firm May Be Sold Off in Pieces

A Losing Battle With the Bells

By DEBORAH SOLOMON
Staff Reporter of THE WALL STREET JOURNAL

NEW YORK—C. Michael Armstrong has spent four years of furious deal making in a bid to push AT&T Corp. beyond its long-distance roots and back on top of the telecommunications landscape.

Now, the chief executive and his top lieutenants are working frantically just to keep control of the company's destiny. Publicly, they insist that AT&T is better off than most of its peers struggling to survive the telecom meltdown. But privately, amid 16-hour days crisscrossing the nation in corporate jets, even they acknowledge that the end of an independent AT&T may well be in sight.

Faced with a massive debt load and a deteriorating cash position, AT&T is on the verge of selling parts or all of the business icon. That could include the two cable companies Mr. Armstrong spent $100 bill... ...uire in hopes of building an altern... ...al-phone networ... ...a cable lines.

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cy spending. (Articles on Pages A2 and A14)

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Weaknesses remain in the health system's preparations for terrorist attacks, administration officials told Congress. Meanwhile, lawmakers unveiled a $3.2 billion plan to fight bioterrorism. A top FBI official said recent Pennsylvania raids are unlikely to aid the anthrax inquiry. (Article on Page A6)

* * *

Arafat called for Israeli withdrawal from the West Bank, Gaza Strip and east Jerusalem in a speech on the 13th anniversary of his declaration of Palestinian independence. Israeli raids left a Palestinian dead as Arafat's police freed two militants detained after the assassination of an Israeli cabinet minister.

* * *

Serb police guarded government buildings after a mutinous secret-police unit, angry at Belgrade's dealings with the Hague, refused to accept civilian control. Separately, Kosovo votes tomorrow in a first, if symbolic, step toward independence from Serbia.

Macedonia's parliament approved constitutional reforms underpinning a peace deal. The vote came after a long period of pressure by Western envoys to codify new rights for ethnic Albanians after rebels disbanded.

* * *

A federal judge dismissed all remaining charges against two former Utah Olympic officials accused of buying votes to win the 2002 Winter Games for Salt Lake City. The judge had thrown out four key counts in July.

* * *

Cancer researchers have developed a method of encapsulating single atoms of radioactive material in injectable molecules that can find and destroy tumor cells. Human trials may begin soon. (Article on Page B3)

* * *

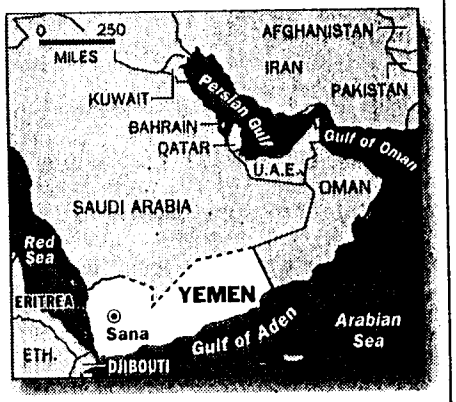
Two freight trains collided head-on about 25 miles northwest of Detroit, killing two crewmen, injuring two others and forcing nearby evacuations. Investigators focused on a switching malfunction or bad weather.

* * *

Peace Corps workers were recalled from Zimbabwe after the government refused to issue permits for new volunteers. Harare has been reducing the presence of international agencies ahead of elections next year.

might end up in Afghanistan. Pakistan, once a welcoming gateway for Arab mujahedeen, has also closed Afghan frontier crossings in recent weeks and carefully screens all Arab visa applicants, submitting their names to local security agencies.

Across the Middle East, hundreds of presumed jihad organizers, who openly worked out of mosques and even government offices to send fighters to Afghanistan in the 1980s and Bosnia-Herzegovina in the 1990s, have been rounded up since the Sept. 11 killings in New York and Wash-



ington. "Back in the past, going to jihad in Afghanistan was a big thing, something to be celebrated by everybody," explains Jamal Khashoggi, a Saudi newspaper editor who frequently met Mr. bin Laden in Afghanistan while covering the war in the 1980s. "Now, if you're a Saudi and you're going to fight there for the Taliban, you're joining the enemy."

In part, that's because few Arab governments want to upset the U.S. and end up a target in the Bush administration's war on terrorism. More important, the Afghan jihad campaign against the Soviets badly boomeranged on its Middle Eastern sponsors. Returning Afghan veterans such as Mr. bin Laden have helped destabilize much of the Arab world, fueling terrorist groups such as Egypt's Islamic Jihad, Algeria's GIA and the Aden Abyan Islamic Army in Yemen.

Intoxicated with their success in defeat-

Please Turn to Page A8, Column 2

Senate due, there won't be any money left."

FIRST LADY Laura Bush will sub for her husband in tomorrow's national radio address, to kick off a campaign highlighting the Afghan Taliban's abuse of women. Also involved: Jay Leno's wife, Mavis, and Britain's Cherie Blair. Yesterday, at the Bush ranch, Russia's President Putin agreed the women need help, but the "end result" must not be that "a lady would turn into a man."

TERRORISTS' FUNDS are Treasury Secretary O'Neill's target in Ottawa today, as he presses the G-20 group of nations to form money-laundering surveillance units. The units would join the global Egmont Group intelligence exchange; among G-20 nations that don't belong are Saudi Arabia, China, Germany, Indonesia and India. Countries meeting in Canada have agreed to an antiterrorism agenda but not to specific actions.

JOB REFERENCE: The White House as early as today may grant Senate Majority Leader Daschle's wish and name his aide, Jonathan Adelstein, to one of two Democratic seats on the Federal Communications Commission. The vacancy has left the FCC with a 3-1 GOP edge.

LEGAL LOOPHOLE: Microsoft tries to shield its top Washington lawyer, Charles F. Rule, from having to reveal some contacts with the administration before he negotiated the company's controversial antitrust settlement. He was formally named a counsel of record yesterday, exempting him from disclosures otherwise demanded under a 1974 law requiring court review of antitrust deals.

GOP'S GILMORE is safe through 2002, White House advisers say.

The party chairman will stay on through the critical midterm elections, they are telling Republicans; many are unhappy about the GOP's loss last week of the governorships in New Jersey and Gilmore's Virginia.

Democrats gloat they have won "the main event" in redistricting after a federal court panel approves a plan favorable to Texas's majority-Democratic House delegation. GOP Leader DeLay of Texas had predicted gains of as many as eight seats; the party still says it can add two.

Republicans urge ex-Rep. Lazio, who lost a Senate race to Hillary Clinton, to seek his old House seat back

phone companies enter the long-distance market at a rapid clip, AT&T faces the prospect of heavy new competition.

The situation AT&T now finds itself in "is a little bit like Gen. Cornwallis surrendering to Revolutionary forces," says Tom Evslin, chief executive of Internet telephony firm ITXC Corp. and a former AT&T executive.

The Parts or the Whole?

While many have speculated whether Mr. Armstrong would ultimately be removed from the helm of AT&T, it appears instead that AT&T is slowly being taken away from him. The company's directors, and Mr. Armstrong himself, had reluctantly come to the realization that AT&T is worth more in pieces than as a struggling whole when they announced a plan to break it into four pieces a year ago. Now, it appears the company will not be able to hold on to those different parts. "Times have changed," says a person close to Mr. Armstrong. Now, the thinking is, "If you're going to break up, why not just sell the pieces and get some long-term value for shareholders?"

With several trips to Washington a month, Mr. Armstrong, the 63-year-old former head of General Motors Corp.'s Hughes Electronics, is pleading with regulators to order relief. Taking an even more visible role is the company's chief financial officer, Charles Noski, who is trying to juggle the various credit-rating agencies, the equity and debt markets, AT&T's board and Wall Street as well as heading negotiations for the company's cable-TV unit.

Mr. Armstrong argues AT&T is better off today than it was when he took over, pointing to the building of wireless and cable franchises. "In 1997 we didn't know if AT&T had a future. But today we've got the assets, we've got the businesses, we've got the management team. We've got a future," says Mr. Armstrong.

Hopes of Keeping It Together

He and other AT&T officials hold out the possibility of keeping the empire together. But he acknowledges that AT&T may not stay intact: "If it's in a form of stand-alone companies or in the form of further industry consolidation, those assets and those people and those customers will still be AT&T."

Some of AT&T's woes reflect those across the telecommunications industry, which is imploding in the wake of a massive glut of capacity and retrenchment of once-abundant investment dollars. But AT&T's plight was aggravated b s of deals struck by Mr. Armstron

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TODAY'S CONTENTS

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STARS NO MORE: Analysts rocked and rolled on Wall Street,

INTERNATIONAL: Cavallo prefers dollarization to devaluation, A9.

ATTACHMENT 6

TO THE

DECLARATION OF BRIAN DAUTCH

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December 12, 2001, Wednesday

TYPE: COMMITTEE HEARING

LENGTH: 9425 words

COMMITTEE: SENATE JUDICIARY COMMITTEE

HEADLINE: U.S. SENATOR PATRICK LEAHY (D-VT) HOLDS HEARING ON "THE **MICROSOFT** SETTLEMENT: A LOOK TO THE FUTURE."

SPEAKER:
U.S. SENATOR PATRICK LEAHY (D-VT), CHAIRMAN

LOCATION: WASHINGTON, D.C.

WITNESSES:

CHARLES JAMES, ASSISTANT ATTORNEY GENERAL, ANTITRUST DIVISION, U.S. DEPARTMENT OF JUSTICE
JAY HIMES, ANTITRUST BUREAU CHIEF, OFFICE OF THE ATTORNEY GENERAL
CHARLES RULE, COUNSEL, **MICROSOFT** CORPORATION
LAWRENCE LESSIG, PROFESSOR, STANFORD LAW SCHOOL
MARK COOPER, DIRECTOR OF RESEARCH, CONSUMER FEDERATION OF AMERICA
JONATHAN ZUCK, PRESIDENT, ASSOCIATION OF COMPETITIVE TECHNOLOGY
MATTHEW SZULIK, PRESIDENT AND CEO, RED HAT, INC.
MITCHELL KERTZMAN, PRESIDENT AND CEO, LIBERATE TECHNOLOGIES

BODY:

U.S. SENATE JUDICIARY COMMITTEE HOLDS A HEARING ON THE **MICROSOFT** SETTLEMENT

DECEMBER 12, 2001

SPEAKERS:
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CHAIRMAN
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LEAHY: I just want to do a little housekeeping here. I want to make sure the chairman and ranking member of the Antitrust Subcommittee are here -- Senator Kohl and Senator DeWine -- both of whom have done a superb job for years in handling antitrust matters.

I told Senator DeWine earlier -- now this would probably cause a recall petition for the Republican Party in Ohio, but what a terrific job he did as chairman and what a terrific job Senator Kohl has done as chairman on antitrust matters in pointing out that they're issues of great complexity, very important to everybody here in the Senate. I've look at the proposed settlement the Department of Justice and nine states have transmitted to the District Court. The reason that they planned for the conclusion of what has really been a landmark antitrust litigation. But now, it's going to pass the legal test set out in the Tunney Act if it's going to gain court approval. That test is both simple and broad, and requires an evaluation of whether the proposed settlement is in the public interest.

There is significant difference of opinion over how well the proposed settlement passes this legal test. In fact, the states participating in the litigation against **Microsoft** are evenly split -- nine states joined in the proposed settlement and nine non-settling states presented the court with an alternative remedy.

As the courts wrangle with the technical and complex legal issues at stake in the case, this committee is conducting hearings to educate ourselves and to educate the public about what this proposed settlement really means for our high-tech industry and for all of us who use computers at work, at school, and at home.

Scrutiny of the proposed settlement by this committee during the course of the Tunney Act proceeding is particularly important. The focus of our hearing today is to examine whether the proposed settlement is good public policy and not to go into the legal technicalities.

The questions raised here and views expressed may help inform the court. I plan with Senator Hatch to forward to the court the record of this hearing for consideration as the court goes about the difficult task of completing the Tunney Act proceedings and the remedy solved by the non-settling states.

I am especially concerned that the District Court takes the opportunity seriously to consider the remedy proposal of the non- settling states but to consider them before she makes her final determination on the other parties' proposed settlement.

The insights of the other participants in this complicated and hard-fought case are going to be valuable additions to the comments received in the Tunney Act proceeding. I would hope that it would help inform the evaluation whether the settlement is in the public interest, a matter of which for many people is still an open question.

The effects of this case extend beyond simply the choices available in the software marketplace. The United States has long been the world leader in bringing innovative solutions to software problems, in creating new tools and applications for use on computers and the web, and in driving forward the flow of capital into these new and rapidly growing sectors of the economy.

This creativity is not limited just to Silicon Valley. My own home area, Burlington, Vermont, ranks seventh in the nation in terms of patent filings. Burlington has 38,000 people. It's in a county of about 130,000 people. It is not per capita. This is actual filings -- seven in the nation.

So, whether the settlement proposal will help or hinder this process, and whether the high tech industries will play the important role that they should in our nation's economy, is a larger issue behind the immediate effects of this proposal.

So, with that in mind, I intend to ask the representatives of the settling parties how their resolution of this conflict will serve the ends that the antitrust laws require.

Our courts have developed a test for determining the effectiveness of a remedy in a Sherman Act case: The remedy must end the anti-competitive practices, it must deprive the wrongdoer of the fruits of the wrongdoing and it must ensure that the illegality never recurs.

The Tunney Act also requires that any settlement of such a case serve the public interest. These are all high standards, but they are reasonable ones and people have dealt with them for years. In this case, the D.C. Circuit, sitting en banc and writing unanimously, found that **Microsoft** had engaged in serious exclusionary practices, to the detriment of their competitors and, thus, to all consumers. So, we have to satisfy ourselves that these matters have been addressed and redressed, or if they have not, why not.

I have noted my concern that the procedural posture of this case not jeopardize the opportunity of the non-settling states to have their day in court and not deprive the District Court of the value of their views on appropriate remedies in a timely fashion. In addition, I have two basic areas of concern about the proposed settlement.

First, I find many of the terms of the settlement to be either confusingly vague, subject to manipulation, or worse, both. Mr. Rule raised an important and memorable point when he last testified before this committee in 1997 during the important series of hearings that were convened by Senator Hatch on competition in the digital age, hearings that have shaped a lot of thinking in the Senate.

Testifying about the first **Microsoft**-Justice Department consent decree, Mr. Rule said, quote: "Ambiguities in decrees are typically resolved against the government. In addition, the government's case must rise or fall on the language of the decree; the government cannot fall back on some purported 'spirit' or 'purpose' of the decree to justify an interpretation not clearly supported by the language."

LEAHY: So, we take seriously such counsel, and would worry if ambiguity in the proposed settlement would jeopardize its enforcement.

Secondly, I am concerned that the enforcement mechanism described in the proposed decree lacks the power and the timeliness necessary to inspire confidence in its effectiveness. Particularly in light of the absence of any requirement that the decree be read in broad

remedial terms, it is especially important that we inquire into the likely operation of the proposed enforcement scheme and its effectiveness.

Any lawyer who has litigated cases, and Mr. James, I would certainly include you, any business person knows how distracting litigation of this magnitude can be and appreciates the value that reaching an appropriate settlement can have not only for the parties but also for consumers, who are harmed by anti-competitive conduct, and the economy. I'm the first one to say that we'd like some finality, so everybody involved, all companies, can know what the standards are and all consumers can know what they are.

Because of that, I do not come to this hearing prejudging the merits of this proposed settlement but instead as one who is ready to embrace a good settlement that puts an end to the merry-go-round of **Microsoft** litigation over consent decrees.

But the serious questions that have been raised about the scope, enforceability and effectiveness of this proposed settlement leave me concerned that, if it's approved in its current form, it may simply be an invitation for the next chapter of litigation. I want an end to this thing. I think everybody wants at end to it, but we want an end to it where we know what the rules are going to be. If we don't know what the rules are going to be, as sure as the sun rising in the East, we're going to face these issues again.

On this point, I share the concern of Judge Robert Bork, who warns, in his written submission, that the proposed settlement "contains so many ambiguities and loopholes as to make it unenforceable, and likely to guarantee years of additional litigation".

I look forward to hearing from the Department of Justice and the other witnesses here. I will put into the record a series of letters, one, a letter to myself and Senator Hatch from James Barksdale, another letter to Assistant Attorney General James and Senator Hatch and a letter to Senator Hatch from Assistant Attorney General James, letters to myself and Senator Hatch and Robert Bork, a letter to myself and Ralph Nader with two enclosures, written testimony of the Computing Technology Industry Association; written testimony of Catfish Software, Inc.; and written testimony of Mark Havicek (ph) of Digital Data Resources, Inc.

I yield to Senator Hatch who has been such a support of hearings on this issue earlier.

HATCH: Thank you, Mr. Chairman.

As you know, we conducted a series of hearings, as you've mentioned, in this committee in 1997 and 1998 to examine the policy implications of the competitive landscape of the then burgeoning high- tech economy and industry, which was about to explode with the advent of the Internet.

Those hearings focused on competition in the industry, in general, and, more specifically, complaints that **Microsoft** had been engaged in anti-competitive behavior that threatened competition and innovation to the detriment of consumers. Our goal was, and I believe today is, to determine how best to preserve competition and foster innovation in the high-technology industry.

Although the committee, and I, as its chairman -- then chairman, was criticized by some, I strongly believed then, and continue to believe now, that in a robust economy involving new technologies, effective antitrust enforcement today would prevent the need for heavy-handed government regulations of business tomorrow.

My interest in the competitive marketplace in the high-technology industry was animated by my strong opposition to regulations of the industry, whether by government, or by one or few companies.

As we may remember, the hearings before the Judiciary Committee developed an extensive record of **Microsoft's** conduct, and evidenced various efforts by the company to maintain and extend its operating system monopoly.

These findings, I would note, were reaffirmed by a unanimous, and ideologically diverse Court of Appeals. The **Microsoft** case -- and its ultimate resolution -- present one of the most important developments in antitrust law in recent history, certainly in my memory.

As I have emphasized before, having a monopoly is not illegal under our laws. In fact, in a successful capitalist system, striving to be one should be encouraged, as a matter of fact.

However, anti-competitive conduct intended to maintain or extend this monopoly would harm competition and could possibly be violative of our laws. I believe no one would disagree that the D.C. Circuit Court's decision reaffirmed the fundamental principle that a monopolist -- even a monopolist in a high-tech industry like software -- must compete on the merits to maintain its monopoly, which brings us to today's hearing. We are here to examine the policy implications of the proposed settlement in the government's antitrust litigation against **Microsoft.**

Mr. Chairman, rather than closing the book on the **Microsoft** inquiry, the proposed settlement appears to be only the end of the latest chapter.

The settling parties are currently in the middle of the so-called Tunney Act process before the court. And, the non-settling parties have chosen to further litigate this matter and last week filed their own proposed settlement.

This has been a complex case with significant consequences for **Microsoft,** high-tech entrepreneurs and the American public as well. The proposed settlement between **Microsoft** and the Justice Department and nine of the plaintiff state attorneys general is highly technical.

We have all been studying it, and its impact, with great interest. Each of us has heard from some, including some of our witnesses here today, that the agreement contains much that is very good. Not surprisingly, we have also heard and read much criticism of the settlement. These are complex issues, and I would hope today's hearing will illuminate the many questions that we have.

I should note that about two weeks ago, I sent a set of detailed and extensive questions about the scope, interpretation, and intended effects of the proposed settlement to the Justice Department, naturally seeking further information on my part.

First, I want to commend the department for getting the responses to these questions to me promptly. We received them yesterday. I think the questions, which were made public, and the Department's responses, could be helpful to each member in forming an independent and fair analysis of the proposed settlement.

To that end, and for the benefit of the committee, Mr. Chairman, I would like to make both the questions and the department's answers part of the record for this hearing, so I would ask unanimous consent that they be made part of the record.

As I noted in my November 29 letter to the department, I have kept an open mind regarding this settlement, and continue to do so. I have had questions regarding the practical enforceability of the proposed settlement and whether it will effectively remedy the unlawful practices identified by the D.C. Circuit, and restore competition in the software marketplace.

I am also cognizant of both the limitation of the claims contained in the original Justice Department complaint by the D.C. Circuit, as well as the standards for enforcement under

settled antitrust law.

I believe that further information regarding precisely how the proposed settlement will be interpreted, given D.C. Circuit case law, is necessary to any full and objective analysis of the remedies proposed therein. I hope that this hearing will result in the development of such information that would supplement the questions that I put forth to the Department.

Mr. Chairman, one important and critical policy issue that I would hope we can address today, and that I would like all of our witness to consider as they wait to be empaneled so that they can discuss, is the difficult issue of the temporal relation of antitrust enforcement in new high-technology markets.

It cannot be overemphasized that timing is a critical issue in examining conduct in the so-called "new economy". Indeed, the most significant lesson the **Microsoft** case has taught us is this fact. The D.C. Circuit found this issue noteworthy enough to discuss in the first few pages of its opinion. And I will quote from the unanimous court:

"What is somewhat problematic is that just over six years have passed since **Microsoft** engaged in the first conduct plaintiffs alleged to be anti-competitive. As the record in this case indicates, six years seems like an eternity in the computer industry. By the time the court can assess liability, firms, products, and the marketplace are likely to have changed dramatically. This, in turn, threatens enormous practical difficulties for courts considering the appropriate measure of relief in equitable enforcement actions." The Court goes on to say that "Innovation to a large degree has already rendered the anti-competitive conduct obsolete, although by no means harmless" unquote.

This issue is one that is relevant for this committee to consider as a larger policy matter, as well as how it relates to this case and the proposed settlement we are examining today. Let me just say that one of things that worries me is what are the enforcement capabilities of this settlement agreement? It was only a few years before these matters arose that **Microsoft** had agreed to a consent decree -- to a conduct decree that many feel that they did not live up to.

I think it's a legitimate issue to raise as to how well the agreement that the Justice Department has worked out with **Microsoft** and nine of the plaintiffs, how will it be enforced if anti- competitive conduct continues.

In that regard, let me just raise Mr. Barksdale's letter which I believe you put into the record.

LEAHY: I did, I did.

HATCH: Let me raise it, because he does make some interesting comments in his letter and if I can read them, I think they might be -- at least part of opening up the questions in this matter. I'll just quote a few paragraphs.

He says: "These developments have stiffened my resolve to do all I can to ensure that competition and consumer choice are reintroduced to the industry. It is vitally important that no company can do to a future Netscape that **Microsoft** did to Netscape from 1995 to 1999. It is universally recognized that the 1995 consent decree was ineffective. I respectfully submit that the proposed final judgment, PFJ, is the subject of the hearing would be even less effective, if possible, than the 1995 decree in restoring competition and stopping anti-competitive behavior. Accordingly, Senator Leahy, I'm going to follow your suggestion that I help the committee answer one of the central questions. If the PFJ had been in effect all along, how would it have affected Netscape? More important, how will it affect future Netscapes?"

He describes the impact on future Netscapes as follows and let me just read a couple of paragraphs in this regard: "As discussed in the attached document, the unambiguous conclusion is that the PFJ agreed upon last month by **Microsoft** and the Department of Justice had been in existence in 1994, Netscape would have never been able to obtain the necessary venture capital financing. In fact, the company would have not come into being in the first place. The work of Mark Andresson's team at the University of Illinois in developing the Mosaic browser would likely have remained an academic exercise. An innovative, independent browser company simply could not survive under the PFJ and such would be the effect on any company developing the future technologies as innovative as the browser was in the mid-1990s."

He goes on to characterize whether or not **Microsoft** could have developed itself, but let me just read the last two paragraphs of this letter: "If the PFJ's provisions are allowed to go into effect, it is unrealistic to think that anybody would ever secure venture capital financing to compete against **Microsoft.** This would be a tragedy for our nation. It makes a mockery of the notion that the PFJ is, quote, "good for the economy", unquote. If the PFJ goes into effect, it will subject an entire industry to dominance by an unconstrained monopolist, thus snuffing out competition, consumer choice and innovation in perhaps our nation's most important industry. And worse, it will allow them to extend their dominance to more traditional businesses, such as financial services, entertainment, telecommunications and perhaps many others.

Four years ago, I appeared before committee and was able to demonstrate, with the help of the audience, that **Microsoft** undoubtedly had a monopoly. Now it has been proven in the course that **Microsoft** not only having a monopoly, but they have illegally maintained that monopoly through a series of abusive and predatory actions. I submit to the committee that **Microsoft** is infinitely stronger in each of their core businesses than they were four years ago, despite the fact that their principal arguments have been repudiated eight to zero by the federal courts. Now, if you'll keep these thoughts in mind during your hearing, let me send a more detailed analysis of my views as followed".

Well, the importance of that letter is basically, Barksdale was one of the original complainants against **Microsoft** and was one of the very important witnesses before this committee in those years when we were trying to figure out what we're doing here.

And I don't think you can ignore that, so these questions have to be answered that he raises, plus the questions that I had given as well.

So, that's the -- you put that letter in the record?

LEAHY: I have and also I understood you wanted those letters (inaudible).

HATCH: I appreciate it.

Let me just say, Mr. Chairman, I'm grateful that you're continuing the committee's important role in high technology policy matters, and I as I would expect you to do, because I know that you take a great interest in these matters, as do, I think, every individual person on this committee and as does every individual person on the committee.

HATCH: I certainly look forward to hearing our witnesses today and I'm going to keep an open mind on where we're going here and hopefully they can resolve these matters in a way that is beneficial to everybody, including those who are against **Microsoft and Microsoft** itself.

Thank you, Mr. Chairman.

LEAHY: Thank you.

Senator Kohl?

KOHL: Mr. Chairman, we thank you for holding this hearing here today. This is a crucial time for competition in the high tech sector of our economy. After spending more than three years pursuing its groundbreaking antitrust case against **Microsoft,** the government has announced a settlement.

But the critical question remains, will this settlement break **Microsoft's** stranglehold over the computer software industry and restore competition in this vital sector of our economy. I have serious doubts that it will.

An independent federal court, both a trial court and a court of appeals found that **Microsoft** broke the law and that its violation should be fixed. This antitrust case was as big as they come.

Microsoft crushed a competitor, illegally tried to maintain its monopoly and stifled innovation in this market. Now, after all these years of litigation, of charges and countercharges, this settlement leaves us wondering, "Did we really accomplish anything?" Or, in the words of the old song, "Is that all there is?"

Does this settlement debate a Supreme Court mandate that it must deny the antitrust violator the fruits of its illegal conduct? It seems to me and to many, including nine of the states that joined the federal government in suing **Microsoft,** that this settlement agreement is not strong enough to do the job to restore competition to the computer software industry.

It contains so many loopholes; qualifications and exceptions that many worry that **Microsoft** will easily be able to evade its provisions.

Today, for the vast majority of computer users, the first thing they see when they turn on their machine is the now familiar **Microsoft** logo placed on the **Microsoft** start menu. And all of their computer operations take place through the filter of **Microsoft's** Windows operating system.

Microsoft's control over the market is so strong that today, more than 95 percent of all personal computers run under Windows operating system, a market share high enough to constitute a monopoly under antitrust law.

Its share of the Internet browsing market is now over 85 percent and reported a profit margin of 25 percent in the most recent quarter, a very high number in challenging economic times.

Microsoft has the power to dictate terms to manufacturers who wish to gain access to the Windows operating system and the ability to leverage its dominance into other forms of computer software. **Microsoft** has never been shy about using its market power.

Are we here today really confident that in five years, this settlement will have had any appreciable impact on these facts of life in the computer industry? I am not.

We stand today on the threshold of writing the rules of competition in the digital age. We have two options. One option involves one dominate company controlling the computer desktop facing minor restraints that expire in five years, but acting as a gatekeeper to 95 percent of all personal computer users.

The other mile is the flowering of innovation and new products that resulted from the breakup from the AT&T telephone monopoly nearly 20 years ago. From cell phones to faxes, from long distance price wars to the development of the Internet itself, the end of the telephone monopoly brought an explosion of new technologies and services that benefit

millions of consumers every day. We should insist on nothing less in this case.

In sum, any settlement in this case should make the market for computer software as competitive as the market for computer hardware is today. While there is nothing wrong with setting, of course, we should insist on a settlement that has an immediate, substantial and permanent impact on restoring competition in this industry.

I thank our witnesses for testifying today and we look forward to hearing your views.

LEAHY: Thank you.

Senator DeWine?

DEWINE: Mr. Chairman, thank you very much for holding this very important hearing concerning the Department of Justice's proposed final judgment in its case against **Microsoft.**

Mr. Chairman, as we examine this judgment and attempt to imagine what it will mean for the future of competition in this market, we must keep in mind the serious nature of this case.

According to the D.C. Circuit Court, **Microsoft** did, in fact, violate our antitrust laws. Their behavior hurt the competitive marketplace. This is something that we must keep in mind as we examine the proposed final judgment.

This hearing is particularly important at this time, because federal law does require the District Court to examine the proposed settlement and determine if it is, in fact, in the public interest.

Federal law clearly allows the public to be heard on such matters. I believe that this forum today will further that process of public discussion.

The Court of Appeals in this case, relying on established Supreme Court case law, explained when appropriate remedy in antitrust case, such as this one, must seek to accomplish. It should unfetter the market and anti-competitive conduct, terminate the illegal monopoly and deny the defendant the fruits of its violations.

It's important, Mr. Chairman, that we examine where the proposed decree would, in fact, accomplish these goals. There seems to be a great deal of disagreement about what the competitive impact of the decree will be. While the proposed settlement, correctly, I believe, focuses primarily on the market for middleware, there has been a great deal of concern raised about the mechanism for enforcing such a settlement. Specifically, I think we need to discuss further whether the public interest would be better served with a so-called special master or some sort of administrative mechanism or whether the Justice Department can be more effective in enforcing the decree on its own.

In addition to the Department of Justice's proposed final judgment, we also have the benefit of another remedy's proposal which has been submitted to the court by nine states that did not join with the antitrust division's proposal. I would like to hear from our witnesses about the role they believe this alternative proposal should play in the ongoing Tunney Act proceedings.

As I mentioned early, Mr. Chairman, the Court of Appeals directed that any remedies should seek to deny **Microsoft** the fruits of its illegal activities. One clear benefit **Microsoft** derives from its violations was the effective destruction of Netscape as a serious competitor and a decrease in Java's market presence.

It's obviously impossible to go back in time and resurrect the exact market structure that

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existed, but it is important to discuss how the proposed settlement deals with this problem.

I'd also like to note for the record that **Microsoft** will be represented today by one of their outside counsel, Rick Rule, rather than an actual employee of the company. Mr. Rule is an outstanding antitrust lawyer. He is well qualified to testify on this issue and we certainly look forward to hearing his testimony today.

However, Mr. Chairman, I must say that I am disappointed that **Microsoft** chose not to send an actual officer of the company because it does not appear to represent, frankly, the fresh start that I think we're all hoping to begin today.

Finally, I would like to thank you, Mr. Chairman, Ranking Member Hatch and Antitrust Subcommittee Chairman Kohl for all of your hard work in putting this hearing together and all of your work on this issue generally, over the last year.

I look forward to the testimony of our witnesses today and the committee's continuing oversight of this very important issue.

LEAHY: Mr. James, there's a vote on the floor. I think there's about two or three minutes left in the roll call vote. We're going to suspend while we go to vote, but I think...

JAMES: I have a really brief statement. Could I make that before you adjourn?

LEAHY: You can.

JAMES: Let me just say that at this hearing and the accompanying media spectacle indicate that **Microsoft** case is a subject of significant public interest and debate. Some argue that the case itself never should have been filed to begin with. Now, after nearly four years of litigation, **Microsoft,** the Department of Justice and nine states, have reached a settlement.

I just want to commend the parties for their tireless effort and countless hours in reaching the compromise. Settlement is nearly always preferable to litigation and regulation by the market is nearly always better than regulation by litigation or the government, for that matter.

As far as what the public thinks, just this week a nationwide survey indicated U.S. government and **Microsoft** agreed to settle the antitrust case, however, nine state AGs argued that the antitrust case against **Microsoft** should continue. Which statement do you agree with?

U.S. economy and consumers would be better off id the issue where we settle as soon as possible, 70 percent; the court should continue to investigate whether **Microsoft** should be punished for its business activities, 24 percent. Not that the public is always determinative, but I thought that would be an interesting observation to add.

Thank you very much, Mr. Chairman.

LEAHY: I think, Mr. James, I think you'd know from the comments that we're across the board here. Everybody, or the majority of the people favor a settlement, but I must say that I don't think the majority of the people favor any settlement. They favor a good settlement and that's what the questions will be directed at and that's why nine attorneys general have expressed concern. Nine agreed with the settlement, nine disagreed with the settlement. These are all very good, very talented people.

So, in your testimony when we come back, you've heard a number of the questions that have been raised and we look forward to you responding to them.

We'll stand in recess while we vote.

(RECESS)

LEAHY: Sorry for that.

LEAHY: Mr. James, I should put on for the record, Mr. James has served as the assistant attorney general for the antitrust division since June 2001. He previously served as deputy assistant attorney general for the Antitrust Division for the first Bush administration from 1989 to '92. He served as acting assistant attorney general for several months in '92.

He was then the head of the antitrust practice of Jones Day Reavis & Pogue in Washington. Not knowing what the Senate schedule might be, Mr. James, we'll put your whole statement in the record, of course. I wonder if you might summarize it, but also with some reference to the charge made in the letter to Senator Hatch and myself by Mr. Barksdale, who said had this been the ground rules -- we never would have been able to get Netscape off the ground had it been the ground rules at the time they began Netscape, they would have never been able to create Netscape. If that is accurate, of course, we've got a real problem.

So, Mr. James, it's all yours.

JAMES: Thank you, Senator Leahy and good morning to you and members of the committee.

I'm pleased to appear before you today to discuss the proposed settlement of our still pending case against **Microsoft** Corporation.

With me today are Deborah Majoris (ph), my deputy, and Phil Malone (ph), who has been the lead staff lawyer on the **Microsoft** case from the very beginning. I note their presence here because they were the ones who responded to the judge's order that we negotiate around the clock and I think they've recovered now.

As you know, on November 2, the department and nine states entered into the proposed settlement. We're in the midst of the Tunney Act period, as you know, and that will end at the end of January at which point the District Court will determine whether the settlement is in the public interest. We think that it is.

I'm somewhat limited in what I can say about the case because of the pendency of the Tunney Act proceeding, but of course, I'm happy to discuss this with the committee for the purpose of public explication.

When thinking about the **Microsoft** case, from my perspective, it's always important to distinguish between **Microsoft,** the public spectacle and **Microsoft,** the actual legal dispute. We look, in particular, to what the department alleged in its complaint and how the court ruled on those allegations.

The antitrust division complaint had four counts: attempted monopolization of browser market in violation of Section II; individual and competitive acts; and a course of conduct to maintain the operating system monopoly in violation of Section II of the Sherman Act; tying it's own browser to the operating system in violation of Section I; and exclusive dealing in violation of Section I.

I would note that a separate monopoly leveraging claim brought by the states was thrown out prior to trial and that the states at one time had alleged in their complaint monopolization of **Microsoft** Office market and that was eliminated by the states through an amendment.

There was, of course, a trial before Judge Jackson, at the conclusion of which Judge Jackson

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found for the government on everything but exclusive dealing and ordered **Microsoft** to be split into a separate operating system and applications businesses after a one year transitional period under interim conduct remedies.

On appeal, however, only the monopoly maintenance claims survived unscathed. The attempt at monopoly claim was dismissed. The time claim was reversed and remanded for further proceedings under a much more rigorous standard and the remedy was vacated with the court ordering remedial hearings before a new judge to address the fact that liability findings had been, in their words, drastically curtailed.

Even the monopoly maintenance claim was cut back in the Court of Appeals decision. The Court of Appeals found for **Microsoft** on some of the specific practice and rules against the government on the so- called "course of conduct theory" of liability.

I recount all of this history to make two basic points that I think are important as we discuss the settlement.

First, the case, even as initially framed by the Department of Justice, was a fairly narrow challenge. It was never a direct assault on the acquisition of the operating system monopoly itself.

Second, and perhaps much more important, the case that emerged from the Court of Appeals was much narrower, still focusing exclusively on the middleware threat to the operating system monopoly and specific practices, not a course of conduct found to be any competitor.

The Court of Appeals decision determines the reality of the case as we found it in the department when I first arrived there in June as you noted. The conduct found to be unlawful by the court was the sole basis of relief.

It's probably worth talking just briefly about the monopoly maintenance claim. The claim alleges that **Microsoft** engages in various anti-competitive practices, the NT, the development of rival web browsers and Java. These products came to be known as middleware and was thought to pose a threat to the operating system monopoly because they had the potential to become platforms for other software applications.

The court noted that the middleware threat was nascent, that is to say that no one could predict when, if ever, enough applications would be written to middleware for it to significantly displace the operating system monopoly.

A few comments about the settlement itself. In general terms, our settlement has several important points that we think fully and demonstrably remedy the middleware issues that were at the heart of the monopoly maintenance claims,

In particular, are our decree contains a very broad definition of middleware that specifically includes a forms of platform software that have been identified as potential operating system threats today and likely to emerge as operating system threats in the future, in the broadest terms types of contractual restrictions and exclusionary arrangements the Court of Appeals found to be unlawful.

The defense is in those prohibitions where the appropriate nondiscrimination and non-retaliation provisions and it creates an environment which middleware developers can create programs that compete with **Microsoft** on a function -- like function basis to a regime of mandatory API documentation and disclosure.

The most simple terms we believe our remedy will permit is the development and deployment of middleware products without fear of retaliation or economic disadvantage. That is what we believe and what the court found that consumers actually lost through **Microsoft's** unlawful

conduct and that is what we think the consumers will gain through our remedy.

With specific reference to what Mr. Barksdale said, if I may. I've not reviewed Mr. Barksdale's letter. I know that in this particular situation with so much at stake in this particular settlement that I've seen lots of hyperbolic statements. I certainly wouldn't necessarily characterize his in that vein without having read it in some detail.

I would note, however...

LEAHY: Mr. James, we're going to give you an opportunity to do that, because I want you to look at it. You can feel free to call it hyperbolic or however, but I would ask that you and your staff look at his letter, which does raise some serious questions and I would like to see what response you have for the record.

JAMES: I will be happy to do so.

And with that, I'd be happy to answer your questions.

LEAHY: Did you have more you wanted to say on the letter before you...

JAMES: No, sir. I'm happy to respond to what you folks want to talk about.

LEAHY: The Department of Justice has been involved in litigation against **Microsoft** for more than 11 years. I am one of those who had hoped throughout that that the parties might come to some conclusion. I think that it's in the best interest if you can have a fair conclusion; it's the best interests of the consumers, the government, **Microsoft,** competitors and everybody else.

I have no problem with that, but that presupposes the right kind of settlement. Over the course of those 11 years, the parties entered into one consent decree and that just ended up with a whole lot more litigation over the terms of that consent decree.

I mention that because you take this settlement and its already being criticized by some for the vagueness of its terms and its loopholes. Judge Robert Bork warned that it's and I think I'm quoting him correctly, "likely to guarantee years of additional litigation".

Now, what kind of assurances can you give or what kind of predictions can you give that if this settlement is agreed to by the courts, that we're going to see an end to this litigation, we're going to have to stop this kind of merry go round of **Microsoft** litigation concerning compliance or even the meanings of the consent decrees. I notice a lot of people in this room on both sides of issue. I have a feeling they are here solely because of their interest in government and not because and not because the meter is running.

A lot of us would like to see this thing end, but why do you feel that this decree, this settlement is so good that it's going to end?

JAMES: Well, Senator, that's certainly a legitimate question and I understand the spirit in which it was asked. One, I think, the facts of life is that one of the reasons we have so many antitrust lawyers and perhaps why there are so many of them in this room, is that firms with substantial market positions very often are the subject of appropriate antitrust scrutiny and so it is with **Microsoft** and so it should be.

Our settlement here is a settlement that resolves a fairly complex piece of litigation. It, by it's terms, is going to be a complex settlement in as much as it does cover a broad range of activities and has to look into the future prospectively in a manner that benefits consumers. Some of that consumer benefit certainly will come from the development of competing products. Some of that consumer benefit, however, will come from competition from

Microsoft as it moves into other middleware products, et cetera.

We think that the terms of the decree are certainly enforceable. I think so much of what has been called a loophole are things that are carve-outs necessary to facilitate pro-competitive behavior and we certainly think that the enforcement power embodied in this decree, I would say an unprecedented level of enforcement power, three tiers of enforcement power, are sufficient to let the Department of Justice...

LEAHY: But keep in mind that usually these kinds of decrees, if it's not specifically laid out, the courts tend to decide the vague questions against the government, not for. Fortune Magazine called it and said even the loopholes have loopholes, a pretty strong statement from a very pro-business magazine.

The settlement limits the types of retaliation **Microsoft** can take against PC manufacturers that want to carry or promote non-**Microsoft** software, but some would say that gives a green light to other types of retaliation.

Now, I don't know why doesn't the settlement ban all types of retaliation. It has no -- the Court of Appeals, it said twice you commingle the browser and operating system code you violate Section II of the Sherman Act. The proposed settlement contains no prohibit on commingling code. There is no provision barring the commingling of browser code with the operating code.

So, you've got areas where they can retaliate. You don't have the barring of this commingling of code. I mean, are these -- Fortune Magazine, Judge Bork and others justified in thinking there are too many loopholes here, notwithstanding the levels of enforcement.

JAMES: Let me take your points in order -- first on the subject of retaliation.

Retaliation is a defined term in this decree. It's a term that we are using to define a sort of conduct that **Microsoft** can engage in when it engages in ordinary commercial transactions.

I don't think that there is any scope in the bounds of this case to prohibit **Microsoft** from engaging in any form of collaborative conduct with anyone in the computer industry.

Certainly, the types of collaborative conduct that are permitted, the so-called "loopholes", are the type of conduct that is permitted under standard Supreme Court law embodied in decisions like broadcast music and NCAA, also embodied in the Federal Trade Commission-Department of Justice joint venture guidelines that sanction forms of conduct, so that we think that antitrust lawyers certainly can understand these types of issues and that we think the courts can understand these types of issues.

JAMES: Secondly, with regard to your more particular point about commingling code -- it's certainly the case that the Court of Appeals following upon the District Court decision found that **Microsoft** had engaged in an act of monopolization in that it commingled code for the purpose of preventing the **Microsoft** browser from being removed from the desktop. That's certainly the finding of the Court of Appeals.

Now, in the process of going through my preparations for this hearing, I went back and looked at the Department of Justice position with regards to this throughout the course of the case and even in the contempt proceeding involving the former (inaudible), it has always and consistently been the Department of Justice's contention that it did not want to force **Microsoft** to remove code from the operating system. They said that over and over again in every brief that's been filed in this case.

What the Department of Justice wanted was an appropriate as a remove functionality that would give consumers the choice between middleware functionalities. That is exactly the

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remedy we have here and we think it's an effective remedy.

We've gone beyond that particular aspect of this by including into our decree a specific provision that deals with the question of defaults, in other words, the extent to which a **Microsoft** middleware -- a non-**Microsoft** middleware product can take over and be (inaudible) both automatically in place of a **Microsoft** middleware product. That's something that was not in the earlier decree. It's a step beyond what was included in Judge Jackson's order.

We think that we have addressed the product integration aspects of the **Microsoft** monopoly made in this claim in exactly the terms that the department has always pursued with regard to that particular issue and we're completely satisfied with that aspect of the relief.

LEAHY: Well, I will have a follow up on -- as you probably expect that my time is up and I want to yield to Senator DeWine. Actually, I have a follow up on the retaliation also, but I do appreciate your answer.

Senator DeWine?

DEWINE: Thank you, Mr. Chairman.

This case has certainly been very controversial and inspired a great deal of discussion regarding the effectiveness of the antitrust laws, especially within the high tech industry.

Netscape, for example, vocally opposed **Microsoft** during this litigation and many of Netscape's complaints really were validated by the courts. And yet, Netscape ended up losing battle.

This sort of result has led some to question whether our antitrust laws can be effective in this particular industry and I personally believe the antitrust laws are essential to promoting competition within the industry and throughout the country.

But I would like to hear what your views are on this subject. What lessons do you think this case teaches us in regards to that and what do we say to people like Netscape?

JAMES: Well, it's certainly the case that our judicial system very often can provide a crude tool for redressing particular issues quickly. I would note that this particular case was litigated on a very fast track and the people at the Department of Justice ought to be really commended for pushing this case along at even the speed that it's taken, considering the comparable speed of other cases.

I think, however, that the case stands for an important proposition and that is that the Department of Justice is up to meeting the challenge, that it has the tools at its disposal to investigate unlawful conduct, to understand and appreciate the implications of what complex technical matters involve, to bring the resources to bear in order to litigate these cases to a successful conclusion and, where appropriate, to reach a settlement that's in the public interest.

One of the things that I think is an important issue to note here is that there is certainly a time difference between litigating a matter of individual liability and litigating a matter involving compliance with a term of a decree.

We think that the enforcement powers that are involved here are appropriate ones. We think that enforcement by the Department of Justice is the appropriate way to proceed in these matters and we're confident that this provides the sort of best mechanism for dealing with a complex matter in complex circumstances.

DEWINE: One provision of the proposed final judgment requires **Microsoft** to allow consumers or computer manufacturers to enable access to competing products. However, to qualify for these protections, it must have had a million copies distributed in the United States within the previous year.

This would seem to me to run contrary to traditional antitrust philosophy promoting new competition. Why are these protections limited to larger competitors?

JAMES: I'm actually glad you asked that question, Senator, because that's one of the prevailing, I think, misconceptions of the decree.

The provisions of the decree that require **Microsoft** to allow a OEM placed middleware product on the desktop apply without regard to whether or not that product has been distributed to 1 million people. That is an absolute requirement.

The million-copy distribution provision relates solely to the question of when **Microsoft** must undertake these affirmative obligations to create defaults, for example, for a middleware product, to provide other types of assistance to someone who has developed that product.

The fact of the matter is that this is something that requires a great deal of work, particularly these complex matters of setting defaults, which is very important to the competitive circumstances here. It would be very difficult to impose upon **Microsoft** the responsibility for making these alterations to the operating system and making them for every subsequent release of the operating system to be automatic in the case of any software company that shows up and says, "I have a product that competes".

But I want to be very clear here, Senator. Every qualifying middleware product without regard to how many copies its distributed, an OEM can place that product on the desktop immediately without regard to this 1 million threshold. And quite frankly, in today's world, 1 million copies distributed is not a substantial matter. I think in the last year I might have gotten 1 million copies of AOL 5.0 in the mail.

So, I don't think that that's really a very large impediment.

DEWINE: Can I ask one last question?

You've mentioned in a number of provisions the settlement will (inaudible) beyond the four corners of a case. But **Microsoft** agreed to these conditions anyway. What are they and what is the goal of these provisions?

JAMES: Well, I think one of the most important one is the default provision. As of the time of our original case, these middleware products were fairly simple, operating in a fairly simple way. You went -- you clicked onto that product, you evoked that product and then you used it in whatever way was appropriate.

In today's world, software has changed. We see what they call a more "seamless user interface user experience", and it's necessary for people to operate deeply within the operating system on an integrated basis.

There were allegations that **Microsoft** overrode consumer choice in these default mechanisms in the case. With regard to each and every one of those instances alleged by the Justice Department, the Justice Department lost. The court found that count for **Microsoft.**

Notwithstanding that as a matter of fencing in and improving the nature of this decree, we have included into this issue the subject of defaults.

Another important area, I think, is a question of server interoperability and that's a very, very

important issue as we see going forward. If you go back and read the complaint in this case, you will find the word "server" almost virtually never appears. There's no sort of very specific allegations that go to this.

We thought that this was an important alternative platform issue. We thought it was important to stretch for relief in this area and we did so and got, I think, relief that is very effective in preserving this as people go into an environment of more distributive web processing.

So, we think that that's a very powerful thing and I think these are two issues that the Department of Justice would have had a very, very difficult time sustaining in court to the extent that the court was inclined to limit us to the proof that we put forward, so I think these are very positive manifestations of the settlement.

DEWINE: Thank you, Mr. Chairman.

LEAHY: We're checking one -- and I mentioned this to Senator Kohl and Senator Sessions and Senator Cantwell (inaudible) been here to answer questions. We're finding out from the floor (inaudible) there may have been a (inaudible). Any senator has a right under Senate rules to object to committees meeting more than two hours after the Senate goes in session. We're on the farm bill and a number of appropriations and other central matters so that I've been told that a senator has objected, as every senator has a right to do, to its continuance.

And as a result, the good senator said they want us to, contrary to what is going on in the Senate floor, we have to respect the rules of the Senate. I do, and we're going to have to recess this hearing at this time. I'm going to put into the record the statements of all those who have come here to testify.

Senator Hatch and I will try and find a time we might reconvene this hearing because both Senator Hatch and I feel this is a very important hearing. Statements will be placed in the record. The record will be open for questions that might be submitted.

I apologize to everybody. We did not anticipate this. With 100 senators, every so often somebody exercises that rule. I emphasize, senators have the right to exercise that rule, especially when we're in the last three weeks of the session. I think we're going to break for Christmas Day, but we're in the last three weeks of this session and I think senator (inaudible) wants to make sure senators pay attention to (inaudible).

HATCH: Mr. Chairman?

LEAHY: Senator Hatch, we really technically out of time.

HATCH: Mr. Chairman, we are out of time. Any Senator can invoke a two-hour rule and a senator has done that. Fortunately, I think it was against the finance committee markup today, but we reported out to bill anyway right within the time constraint. That's where I went.

But both Senator Leahy and I apologize to the witnesses who put such an effort in being here today, because this is an important hearing. These are important matters for both sides, to all sides, I should say. There are not just two sides here, and these matters have a great bearing on just how positively impactful the United States is going to be in these areas.

So, I hope that we can reconvene within a relatively short period of time and continue this hearing, because it is a very, very important hearing and we apologize to you that this happened.

LEAHY: It's out of our hands, but I would normally recess until tomorrow, but tomorrow we

have this time for an executive committee meeting of the Judiciary Committee to do as we've done many times already, to vote out a large number of judges.

So, with that, we stand recessed.

(UNKNOWN): Mr. Chairman, just a matter of procedure. I am troubled by what I understand to be a decision to send this transcript to the court as an official document from Congress in the middle of a litigation that's ongoing. I would think that anybody's statement that they gave could be sent to the court. Any senator can write a letter to the court.

LEAHY: I appreciate -- we need to be...

(UNKNOWN): I haven't studied it fully, but as a (inaudible) it troubles me to have a...

LEAHY: That record is open to anybody who wants to send anything in. Senator Hatch and I have made that decision and that will be the decision of the committee.

We stand in recess.

(UNKNOWN): I will be recorded as objecting.

END

NOTES:
???? - Indicates Speaker Unknown
-- - Indicates could not make out what was being said. off mike - Indicates could not make out what was being said.

PERSON: PATRICK J LEAHY (94%); EDWARD M KENNEDY (72%); JOSEPH R BIDEN (57%); DIANNE FEINSTEIN (56%); RICHARD J DURBIN (55%); MIKE DEWINE (55%); ORRIN G HATCH (54%); STROM THURMOND (54%); JOHN EDWARDS (54%); ARLEN SPECTER (53%); JON L KYL (53%); JEFF SESSIONS (52%); MITCH MCCONNELL (51%); HERB KOHL (50%); RICHARD MICHAEL DEWINE (50%);

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ATTACHMENT 7

TO THE

DECLARATION OF BRIAN DAUTCH

FRIED FRANK HARRIS SHRIVER & JACOBSON

Charles F. (Rick) Rule is a partner resident in Fried Frank's Washington, DC and New York offices and head of the firm's antitrust practice. He joined the firm in 2001.

Mr. Rule's practice focuses on providing U.S. and international antitrust advice to a variety of high-profile corporations, counseling, structuring joint ventures (including business-to-business exchanges) and representing major corporations in connection with investigations by the U.S. Department of Justice, the Federal Trade Commission and the European Commission.

Mr. Rule has represented clients such as Eli Lilly & Company, Microsoft Corporation, US Airways Inc., WorldCom, Inc., the National Basketball Association, Goodyear Tire and Rubber Co., and Air Products and Chemicals, Inc. He has also been involved in the antitrust clearance of some of the highest-profile mergers in recent years, including advising NYNEX in its merger with Bell Atlantic (now known as Verizon Communications) and serving as Exxon's lead counsel in its successful merger with Mobil Oil Corporation (now known as ExxonMobil Corporation).

Mr. Rule served as William Baxter's special assistant, in 1982, in the Antitrust Division of the Department of Justice. He served as acting head of the Division for almost half of 1985 and was appointed to the job permanently in late 1986, becoming the youngest person ever to be confirmed to the position of Assistant Attorney General in charge of the Antitrust Division. Mr. Rule continued as the Assistant Attorney General through the remainder of the Reagan Administration and for the first several months of the George Bush, Sr. Administration. He received the Edmund J. Randolph Award from the Department of Justice in 1988. Following his departure from the Justice Department in 1989, Mr. Rule was a partner and head of the antitrust practice at the Washington, DC law firm of Covington & Burling.

Mr. Rule has served as a distinguished adjunct professor of law at

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American University's Washington College of Law. He was the inaugural chair of the Corporations, Securities and Antitrust Practice Group of the Federalist Society, and, from 1989-91, was chair of the Economics Committee of the ABA Antitrust Section. He is currently a member of the Advisory Board of BNA's Antitrust & Trade Regulation Report and also a member of the advisory boards of the Washington Legal Foundation and the Landmark Legal Foundation.

Mr. Rule is included among the world's leading antitrust lawyers in the *Chambers Global 2000-2001* listing. His biography appears in *Who's Who in America, Who's Who in the East, Who's Who in American Law* and similar publications.

Mr. Rule has written extensively and is a frequent lecturer on a variety of antitrust and regulatory topics, and he contributes a regular column on antitrust issues to the *Daily Deal*. (See attached publications list.)

Mr. Rule received his JD in 1981 from the University of Chicago Law School and his BA, *summa cum laude*, in 1978 from Vanderbilt University. He served as a law clerk for Chief Judge Daniel M. Friedman of the old United States Court of Claims (now the Court of Appeals for the Federal Circuit). He is on the Visiting Committee for the University of Chicago Law School. He is admitted to the bar in the District of Columbia.

Alphabetical Attorney Listing Attorney Database

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ATTACHMENT 8

TO THE

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The New York Times

States Biding for Time to Study Microsoft Settlement Plan

By STEPHEN LABATON

WASHINGTON, Nov. 1 — The 18 states involved in the government's landmark antitrust lawsuit against Microsoft rebuffed repeated requests today by Microsoft and the Justice Department to join the tentative settlement they reached a day earlier.

Concluding a series of meetings in Washington and cross-country telephone calls, the state prosecutors instead agreed among themselves to ask the federal judge overseeing the case for time to examine the details of the proposed deal.

The judge, Colleen Kollar-Kotelly of Federal District Court for the District of Columbia, has ordered the lawyers in the case to appear before her on Friday morning to report progress in the mediation proceedings that she set up five weeks ago.

Today Microsoft and senior Justice Department officials engaged with a mediator in shuttle diplomacy, vigorously pressing the states to adopt the agreement, people involved in the case said.

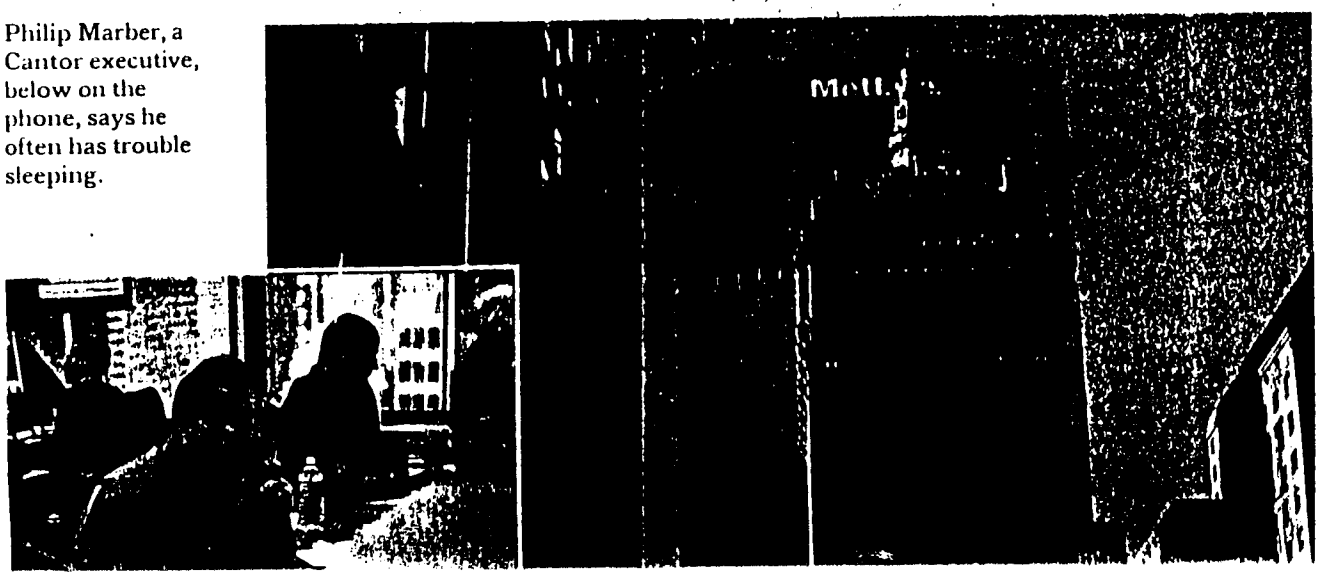
Under that pressure, leaders of the group struggled to hold together a fragile alliance that was being led from Washington by Tom Miller, the attorney general of Iowa, and Richard Blumenthal, the attorney general of Connecticut. Working from the headquarters here of the National Association of Attorneys General, the two were joined by lower-level lawyers from other states, including New York and California.

After a conference call this afternoon, the states agreed to have their newly hired lawyer, Brendan Sullivan, ask the judge for more time to consider the request. The decision was described as unanimous. Pressing hardest for the delay were representatives from California, Connecticut, Massachusetts, Ohio and Wisconsin, according to one lawyer involved in the case.

Participants described the state officials as wary of accepting a deal before scrutinizing the text of any proposed consent decree, particularly in light of the history of the case. "The last time I saw a public policy issue as important and difficult as Microsoft decided under impossible time constraints and without a chance for adequate public review was when California passed its electricity deregulation bill," said Bill Lockyer, the California attorney general. "I'm not about to stand by and see that happen again."

It was an inartfully drawn consent de-

Continued on Page 4



Philip Marber, a Cantor executive, below on the phone, says he often has trouble sleeping.

Berkshire Set To Acquire Apparel Giant

$835 Million to Be Paid For Fruit of the Loom

By DAVID BARBOZA

CHICAGO, Nov. 1 — Berkshire Hathaway, the holding company and investment

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TECHNOLOGY

States Biding for Time in Microsoft Settlement Plan

Continued From First Business Page

cree in 1994 that became the center of the initial lawsuit filed by the Justice Department against Microsoft. In that case, Microsoft was accused of violating the terms of the decree by integrating its Internet Explorer browser software into its Windows operating system. The company replied that it had done nothing improper because the decree did not explicitly constrain it from such integration.

The state prosecutors today faced a difficult legal calculation. Several of them were described as being skeptical of the proposed deal but also uncertain whether they would be able to proceed as a group at odds with the federal government.

A break between the states and the Justice Department would throw the case into uncharted and possibly stormy legal waters. No agreement can take effect without the approval of a federal judge, and it is impossible to predict how Judge Kollar-Kotelly might react to the concerns of the states.

Nor is it certain whether her approval of a settlement would prevent the states from proceeding with their own antitrust lawsuit against Microsoft. To approve the proposed deal struck with the Justice Department, Judge Kollar-Kotelly would have to find that it was in the public interest.

Today's developments capped a remarkable week of behind-the-scenes negotiations in Washington. For Microsoft, the main negotiator has been Charles F. Rule of Fried, Frank, Harris, Shriver & Jacobson, a former assistant attorney general in charge of antitrust during the Reagan administration, where he got to know a young colleague working on antitrust issues at the Federal Trade Commission named Charles A. James. Mr. James, the current head of the antitrust division, is leading the federal government's effort to settle the case.

News of the proposed settlement between Microsoft and the Justice Department propelled the company's stock and contributed to a broader rally in the markets. Microsoft shares rose 6.4 percent, or $3.69, to $61.84.

Stacey Cramp/Legal Times

Charles A. James, the head of the Justice Department's antitrust division, is leading the government's effort to settle the Microsoft case.

Some of Microsoft's largest competitors voiced bitter disappointment about the terms of the proposed deal and asserted that the company had used its political influence with a Republican administration to try to quickly put an end to the case.

The rivals said that during court hearings that will be required on the proposed settlement, they intended to provide evidence of what they say was an improper discussion between a senior aide to Attorney General John Ashcroft who had been a top official in the Republican Party and a Republican lobbyist for AOL-Time Warner that demonstrated Microsoft's political muscle. In a statement issued today, Representative John Conyers Jr., Democrat of Michigan, also indicated he would be examining that incident, word of which has been circulating widely in recent days among lawyers, lobbyists and executives following the case.

The aide to Mr. Ashcroft, David Israelite, had been the political director of the Republican National Committee, which received hundreds of thousands of dollars from Microsoft during the 2000 presidential campaign. Mr. Israelite, now Mr. Ashcroft's deputy chief of staff, has recused himself from any involvement in the Microsoft antitrust case because he owns 100 shares of Microsoft stock.

The lobbyist involved in the discussion was said to be Wayne Berman, who is also a top Republican fundraiser.

According to the notes of a person briefed about the conversation on Oct. 9, the day it is said to have occurred, Mr. Israelite called Mr. Berman.

"Are you guys behind this business of the states hiring their own lawyers in the Microsoft case?" Mr. Israelite asked Mr. Berman in the predawn conversation, according to the notes. "Tell your clients we wouldn't be too happy about that."

Mr. Israelite purportedly told the AOL lobbyist that the Supreme Court would probably deny a Microsoft appeal later in the day, as the court in fact did, clearing the way for the Justice Department to push hard for a settlement with the company. According to people who were later briefed on the conversation by an AOL executive, Mr. Israelite then complained that AOL, a leading Microsoft rival, had been trying to "radicalize" the states to oppose a settlement.

In recent interviews, both Mr. Israelite and Mr. Berman denied that they had had any conversations about the Microsoft case or that they had talked at all that day.

"I find it offensive if someone has suggested that I violated the terms of my recusal, because I take that very seriously," Mr. Israelite said.

But an AOL executive said he was notified by Mr. Berman about his conversation with Mr. Israelite on Oct. 9, the day it was said to have occurred. Nevertheless, this executive and others at AOL said that upon re-examination of Mr. Berman's initial description of the conversation with Mr. Israelite, the company concluded that the account of the conversation might not have been reliable enough to justify filing an ethics complaint.

But other industry executives and lobbyists said they thought the conversation had occurred and would ask Judge Kollar-Kotelly to order an inquiry. Today Edward J. Black, president of the Computer and Communications Industry Association, a trade group whose members include many of Microsoft's corporate adversaries, said he and other groups would be raising the incident as part of a court proceeding to consider the merits of the settlement.

"Something is very rotten here," Mr. Black said. "Israelite is a recused official. He holds Microsoft stock. He raised a lot of money from Microsoft. He steered money into critical states that helped win the election. And then he takes action to help facilitate getting Microsoft out of trouble in an enforcement action."

ntitrust Deal Is Called Big Victory for Microsoft

By STEVE LOHR

After more than three years of litigation, repeated courtroom setbacks and failed settlely on whether an appeals court ruling in June was interpreted broadly or narrowly.

Some legal scholars pointed to the precedents establishing the standard that monopoly remedies should eliminate the monopoly, deny with innovation.' "

The tentative settlement would prohibit Microsoft from entering into pricing deals and contracts with personal computer makers that effectively force them to favor Microsoft prod-

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ATTACHMENT 9

TO THE

DECLARATION OF BRIAN DAUTCH

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Washington, DC 20515	Washington, DC 20510

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U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page** 2

1. Registrant Name
Barbour Griffith & Rogers

2. Registrant Address ☐ Check if different than previously reported
Address **1275 Pennsylvania Avenue, N.W.** **Tenth Floor**
City **Washington** State/Zip (or Country) **DC 20004**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Will Milligan	**(202)-661-6320**	**wmilligan@bgrdc.com**	**5357-416**

7. Client Name ☐ Self
Microsoft Corporation

6. House ID #
31564040

TYPE OF REPORT

8. Year **1999** Midyear (January 1-June 30) ☒ OR Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$300,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **8/5/99**

Printed Name and Title **G.O. Griffith, Jr. - Managing Partner**

MTC-00030631_0796

Registrant Name: **Barbour Griffith & Rogers**

Client Name: **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **CPI** (one per page)

16. Specific Lobbying issues
H.R.775, Y2K Act,
S.314, Small Business Year 2000 Readiness Act,
In connection with the Justice Department's Antitrust inquiry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Barbour, Haley		**No**
Griffith, Jr., G.O.		**No**
Monroe, Loren		**No**
Rogers, Ed		**No**
Thompson, Brent		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **8/5/99**

Printed Name and Title **G.O. Griffith, Jr. - Managing Partner**

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ATTACHMENT 10

TO THE

DECLARATION OF BRIAN DAUTCH

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00 FEB 11 P 2:16
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page** 2

1. Registrant Name **Barbour Griffith & Rogers**		
2. Registrant Address ☐ Check if different than previously reported Address **1275 Pennsylvania Avenue, N.W.** **Tenth Floor** City **Washington** State/Zip (or Country) **DC 20004**		
3. Principal Place of Business (if different from line 2) City State/Zip (or Country)		
4. Contact Name **Evan Rikhye**	Telephone E-mail (optional) **202-333-4936**	5. Senate ID # **5357-416**
7. Client Name ☐ Self **Microsoft Corporation**		6. ~~House ID #~~ **31564040**

TYPE OF REPORT 8. Year 1999 Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$320,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **01/13/2000**

Printed Name and Title **G.O. Griffith, Jr. - Managing Partner**

MTC-00030631_0799

Registrant Name: **Barbour Griffith & Rogers**

Client Name: **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **LAW** *(one per page)*

16. Specific Lobbying issues
H.R.775, Y2K Act,
S.314, Small Business Year 2000 Readiness Act,
In connection with the Justice Department's Antitrust inquiry.

17. House(s) of Congress and Federal agencies contacted ☒ Check if None

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **01/13/2000**

Printed Name and Title **G.O. Griffith, Jr - Managing Partner**

MTC-00030631_0800

ATTACHMENT 11

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER

2000 AUG 11 PM 2:26

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
Barbour Griffith & Rogers, Inc.

2. Address ☐ Check if different than previously reported
1275 Pennsylvania Avenue, N.W. **Washington**
Tenth Floor **DC 20004**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Evan Rikhye	**202-333-4936**		**5357-416**

7. Client Name ☐ Self	6. House ID #
Microsoft Corporation	**31564040**

TYPE OF REPORT 8. Year **2000** Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date ____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$300,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **8/12/2000**

Printed Name and Title **G.O. Griffith, Jr. - Chief Operating Officer**

MTC-00030631_0802

Registrant Name: **Barbour Griffith & Rogers, Inc.**

Client Name: **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **IMM** ____ (one per page)

16. Specific Lobbying issues
H.R. 3767, Visa Waiver Permanent Program Act ,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		**No**
Rogers, Ed		**No**
Barbour, Haley		**No**
Monroe, Loren		**No**
Thompson, Brent		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **8/12/2000**

Printed Name and Title **G.O. Griffith, Jr. - Chief Operating Officer**

MTC-00030631_0803

Registrant Name: Barbour Griffith & Rogers, Inc.

Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code LAW (one per page)
16. Specific Lobbying issues
Monitor the Justice Department's Antitrust inquiry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		No
Rogers, Ed		No
Barbour, Haley		No
Monroe, Loren		No
Thompson, Brent		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/12/2000

Printed Name and Title G.O. Griffith, Jr. - Chief Operating Officer

MTC-00030631_0804

Registrant Name: Barbour Griffith & Rogers, Inc.

Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)
16. Specific Lobbying issues
H.R. 4444, US-China Trade Relations Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		No
Rogers, Ed		No
Barbour, Haley		No
Thompson, Brent		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature [signature] Date 8/12/2000

Printed Name and Title G.O. Griffith, Jr. - Chief Operating Officer

Signature [signature] Date 8/12/2000

MTC-00030631_0805

ATTACHMENT 12

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

01 FEB 13 AM 11:09

(4)

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
Barbour Griffith & Rogers, Inc.

2. Address ☐ Check if different than previously reported
1275 Pennsylvania Avenue, N.W. **Washington**
Tenth Floor **DC 20004**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Evan Rikhye	**202-333-4936**		**5357-416**

7. Client Name ☐ Self	6. House ID #
Microsoft Corporation	**31564040**

TYPE OF REPORT

8. Year **2000** Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$240,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **2/14/2001**

Printed Name and Title **G.O. Griffith, Jr. - Chief Operating Officer**

MTC-00030631_0807

Registrant Name: Barbour Griffith & Rogers, Inc.

Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **LAW** (one per page)

16. Specific Lobbying issues
Monitor the Justice Department's Antitrust inquiry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		**No**
Rogers, Ed		**No**
Barbour, Haley		**No**
Monroe, Loren		**No**
Thompson, Brent		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **2/14/2001**

Printed Name and Title **G.O. Griffith, Jr. - Chief Operating Officer**

MTC-00030631_0808

Registrant Name: **Barbour Griffith & Rogers, Inc.**

Client Name: **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TRD** (one per page)

16. Specific Lobbying issues
H.R. 4444, US-China Trade Relations Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		**No**
Rogers, Ed		**No**
Barbour, Haley		**No**
Thompson, Brent		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **2/14/2001**

Printed Name and Title **G.O. Griffith, Jr. / Chief Operating Officer**

MTC-00030631_0809

Registrant Name: Barbour Griffith & Rogers, Inc.

Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)
16. Specific Lobbying issues
H.R. 4444, US-China Trade Relations Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Griffith, Jr., G.O.		No
Rogers, Ed		No
Barbour, Haley		No
Thompson, Brent		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/14/2001

Printed Name and Title G.O. Griffith, Jr. - Chief Operating Officer

MTC-00030631_0810

ATTACHMENT 13

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER

2001 AUG 14 PM 12:40

CLERK OF THE FILES
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

2

1. Registrant Name
Barbour Griffith & Rogers, Inc.

2. Registrant Address [ ] Check if different than previously reported
Address **1275 Pennsylvania Avenue, N.W.** **Tenth Floor**
City **Washington** State/Zip (or Country) **DC 20004**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name **Evan Rikhye** Telephone **202-333-4936** E-mail (optional)

5. Senate ID # **5357-416**

6. House ID # **31564040**

7. Client Name [ ] Self
Microsoft Corporation

TYPE OF REPORT 8. Year **2001** Midyear (January 1-June 30) [X] **OR** Year End (July 1-December 31) [ ]

9. Check if this filing amends a previously filed version of this report [ ]

10. Check if this is a Termination Report [ ] >> Termination Date

11. No Lobbying Activity [ ]

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 [ ]

$10,000 or more [X] >> $ **$220,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 [ ]

$10,000 or more [ ] >> $
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

[ ] **Method A.** Reporting amounts using LDA definitions only

[ ] **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

[ ] **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature Date **8/14/2001**

Printed Name and Title **G.O. Griffith, Jr. - Chief Operating Officer**

MTC-00030631_0812

ATTACHMENT 14

TO THE

DECLARATION OF BRIAN DAUTCH

Registrant Name: Barbour Griffith & Rogers, Inc.

Client Name: Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code LAW (one per page)
16. Specific Lobbying issues
Monitor the Justice Department's Antitrust inquiry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Barbour, Haley		**No**
Griffith, Jr., G.O.		**No**
Monroe, Loren		**Yes**
Rogers, Ed		**No**
Thompson, Brent		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature [signature] Date 8/14/2001

Printed Name and Title G.O. Griffith, Jr. - Chief Operating Officer

MTC-00030631_0814

SECRETARY OF THE SENATE
CLERK OF THE HOUSE OF REPRESENTATIVES

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES
'98 FEB -9 AM 11:52

31698027

2 For Official Use

LOBBYING REPORT

Lobbying Disclosure Act (Section 5)

1. Year 1997

2. Report type *(check all that apply)* Midyear (January 1- June 30) ☐ Year End (July 1- December 31) ☒
Amended report ☐ Termination report ☐
No activity *(registration to remain in effect)* ☐

REGISTRANT

3. Name of Registrant Clark & Weinstock

4. Telephone number and contact name
(212) 953-2550 Contact Anthony Ewing

CLIENT *Lobbying firms file separate reports for each client. An organization employing in-house lobbyists indicates "Self."*

5. Name of Client Microsoft Corporation

INCOME OR EXPENSES *Answer line 6 or line 7 as applicable.*

6. LOBBYING FIRMS. Income from the client during the reporting period, other than income unrelated to lobbying activities, was:

Less than $10,000 ☐ $10,000 or more ☒

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of all income from the client during this reporting period. Include any payments by any other entity for lobbying activities on behalf of the client. Exclude income unrelated to lobbying activities.

Income $ 80,000 Total for year *(if Year End report)* $ 80,000

7. ORGANIZATIONS EMPLOYING IN-HOUSE LOBBYISTS. Expenses incurred in connection with lobbying activities during the reporting period were:

Less than $10,000 ☐ $10,000 or more ☐

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of the total amount of all lobbying expenses incurred by the registrant and its employees during this reporting period.

Expenses $_____ Total for year *(if Year End report)* $_____

Optional Expense Reporting Methods

A. Registrants that report lobbying expenses under section 6033(b)(8) of the Internal Revenue Code may provide a good faith estimate of the applicable amounts that would be required to be disclosed under section 6033(b)(8) for the semiannual reporting period, and may consider as lobbying activities only those defined under section 4911(d) of the Internal Revenue Code. If selecting this method, check box and (i) enter estimated amounts on the "Expenses" line above; or (ii) attach a copy of the IRS Form 990 that includes this reporting period. ☐

B. Registrants subject to section 162(e) of the Internal Revenue Code may make a good faith estimate of all applicable amounts that would not be deductible under section 162(e) for the semiannual reporting period, and may consider as lobbying activities only those activities the costs of which are not deductible pursuant to section 162(e). If selecting this method, check box and enter estimated amounts on the "Expenses" line above. ☐

MTC-00030631_0815

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corporation

LOBBYING ISSUES. On line 8 below, enter the code for *one* general lobbying issue area in which the registrant engaged in lobbying activities for the client during this reporting period *(select applicable code from list in the instructions and on the reverse side of Form LD-2, page 1)*. For that general issue area *only*, complete lines 9 through 12. If the registrant engaged in lobbying activities for the client in more than one general issue area, use one Lobbying Report Addendum page for each additional general issue area.

8. General lobbying issue area code (enter *one*) CPI

9. Specific lobbying issues *(include bill numbers and specific executive branch actions)*

Support for Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, and other matters affecting the computer-software industry.

10. Houses of Congress and Federal agencies contacted

U. S. House of Representatives
U. S. Senate

11. Name and title of each employee who acted as a lobbyist

Vin Weber, Partner
Andrew Goldman, Managing Director
Deirdre Stach, Director
Ed Kutler, Managing Director
Kent Knutson, Director

12. *For registrants identifying foreign entities in the Lobbying Registration (Form LD-1, line 12) or any updates:* Interest of each such foreign entity in the specific lobbying issues listed on line 9 above

This report includes -0- Addendum pages.

Signature [signature] Date 2/6/98

Printed Name and Title Harry W. Clark III, Managing Partner

MTC-00030631_0816

ATTACHMENT 15

TO THE

DECLARATION OF BRIAN DAUTCH

SECRETARY OF THE SENATE
CLERK OF THE HOUSE OF REPRESENTATIVES

RECEIVED
98 AUG -6 AM 11:00
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

31698027

2 For Official Use

LOBBYING REPORT

Lobbying Disclosure Act (Section 5)

1. Year 1998

2. Report type *(check all that apply)* Midyear (January 1- June 30) ☑ Year End (July 1- December 31) ☐
Amended report ☐ Termination report ☐
No activity *(registration to remain in effect)* ☐

REGISTRANT

3. Name of Registrant Clark & Weinstock Inc.

4. Telephone number and contact name
(212)953-2550 Contact Anthony Ewing

CLIENT *Lobbying firms file separate reports for each client. An organization employing in-house lobbyists indicates "Self."*

5. Name of Client Microsoft Corporation

INCOME OR EXPENSES *Answer line 6 or line 7 as applicable.*

6. LOBBYING FIRMS. Income from the client during the reporting period, other than income unrelated to lobbying activities, was:

Less than $10,000 ☐ $10,000 or more ☒

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of all income from the client during this reporting period. Include any payments by any other entity for lobbying activities on behalf of the client. Exclude income unrelated to lobbying activities.

Income $ 160,000 Total for year *(if Year End report)* $_____

7. ORGANIZATIONS EMPLOYING IN-HOUSE LOBBYISTS. Expenses incurred in connection with lobbying activities during the reporting period were:

Less than $10,000 ☐ $10,000 or more ☐

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of the total amount of all lobbying expenses incurred by the registrant and its employees during this reporting period.

Expenses $_____ Total for year *(if Year End report)* $_____

Optional Expense Reporting Methods

A. Registrants that report lobbying expenses under section 6033(b)(8) of the Internal Revenue Code may provide a good faith estimate of the applicable amounts that would be required to be disclosed under section 6033(b)(8) for the semiannual reporting period, and may consider as lobbying activities only those defined under section 4911(d) of the Internal Revenue Code. If selecting this method, check box and (i) enter estimated amounts on the "Expenses" line above; or (ii) attach a copy of the IRS Form 990 that includes this reporting period. ☐

B. Registrants subject to section 162(e) of the Internal Revenue Code may make a good faith estimate of all applicable amounts that would not be deductible under section 162(e) for the semiannual reporting period, and may consider as lobbying activities only those activities the costs of which are not deductible pursuant to section 162(e). If selecting this method, check box and enter estimated amounts on the "Expenses" line above. ☐

MTC-00030631_0818

Registrant Name Clark & Weinstock Inc.

Client Name Microsoft Corporation

LOBBYING ISSUES. On line 8 below, enter the code for *one* general lobbying issue area in which the registrant engaged in lobbying activities for the client during this reporting period *(select applicable code from list in the instructions and on the reverse side of Form LD-2, page 1)*. For that general issue area *only*, complete lines 9 through 12. If the registrant engaged in lobbying activities for the client in more than one general issue area, use one Lobbying Report Addendum page for each additional general issue area.

8. General lobbying issue area code (enter *one*) CPI

9. Specific lobbying issues *(include bill numbers and specific executive branch actions)*

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, and other matters affecting the computer software industry.
(HR3736, S.1723, S.2107)
(HR2368, HR2372, HR2991)

10. Houses of Congress and Federal agencies contacted

U.S. House of Representatives
U.S. Senate

11. Name and title of each employee who acted as a lobbyist

Vin Weber, Partner
Andrew Goldman, Managing Director
Ed Kutler, Managing Director
Deirdre Stach, Director
Kent Knutson, Director
Mimi Simoneaux, Director

12. *For registrants identifying foreign entities in the Lobbying Registration (Form LD-1, line 12) or any updates*: Interest of each such foreign entity in the specific lobbying issues listed on line 9 above

This report includes 0 Addendum pages.

Signature [signature] Date 8/4/98

Printed Name and Title Harry W. Clark, Managing Partner

MTC-00030631_0819

ATTACHMENT 16

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
98 FEB 17 PM 12:56
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT //

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

1. Registrant Name
Clark & Weinstock Inc.

2. Address ☒ Check if different than previously reported
1775 I Street, NW, Washington, DC 20006

3. Principal Place of Business (if different from line 2)
City: New York State/Zip (or Country) NY

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Anthony Ewing	(212) 953-2550		9443-381

7. Client Name ☐ Self
Microsoft Corporation

6. House ID #
31698027

TYPE OF REPORT 8. Year 1998 Midyear (January 1-June 30) ☐ OR Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☒

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 220,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature_____

Printed Name and Title_____

MTC-00030631_0821

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry. (HR. 3736, 2368, 2372, 2991, 695, 947, 1689; S. 2067, 405, 1260, 507, 1723; House/Senate Treasury Appropriations Act of 1999; Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1999; Department of Commerce, Justice and State, The Judiciary and Related Agencies Appropriations for FY 1999).

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name		Covered Official Position (if applicable)
Ed Kutler	8/95 - 8/97	Assistant to the Speaker of the House Of Representatives, Rep. Newt Gingrich(R-GA)
Mimi Simoneaux	1/96 - 1/97	Legislative Asst. for Rep. Billy Tauzin(R-LA)
	1/97 - 2/98	Legislative Dir. for Rep. Billy Tauzin(R-LA)
Andrew Goldman		
Deirdre Stach		
Vin Weber		

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0822

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kent Knutson

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

gnature Harry W. Clark III Date 2/11/99

inted Name and Title Harry W. Clark III, Managing Partner

LLL (Rev. 6/98)

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific lobbying issues

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry. (HR. 3736, 2368, 2372, 2991, 695, 947, 1689; S. 2067, 405, 1260, 507, 1723; House/Senate Treasury Appropriations Act of 1999; Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1999; Department of Commerce, Justice and State, The Judiciary and Related Agencies Appropriations for FY 1999).

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name		Covered Official Position (if applicable)
Ed Kutler	8/95 - 8/97	Assistant to the Speaker of the House Of Representatives, Rep. Newt Gingrich(R-GA)
Mimi Simoneaux	1/96 - 1/97	Legislative Asst. for Rep. Billy Tauzin(R-LA)
	1/97 - 2/98	Legislative Dir. for Rep. Billy Tauzin(R-LA)
Andrew Goldman		
Deirdre Stach		
Vin Weber		

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0824

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kent Knutson

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

gnature Harry W. Clark III Date 2/11/99

d Name and Title Harry W. Clark III, Managing Partner

LD-2 (Rev. 6/98)

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific lobbying issues

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry. (HR. 3736, 2368, 2372, 2991, 695, 947, 1689; S. 2067, 405, 1260, 507, 1723; House/Senate Treasury Appropriations Act of 1999; Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1999; Department of Commerce, Justice and State, The Judiciary and Related Agencies Appropriations for FY 1999).

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name		Covered Official Position (if applicable)
Ed Kutler	8/95 - 8/97	Assistant to the Speaker of the House Of Representatives, Rep. Newt Gingrich(R-GA)
Mimi Simoneaux	1/96 - 1/97	Legislative Asst. for Rep. Billy Tauzin(R-LA)
	1/97 - 2/98	Legislative Dir. for Rep. Billy Tauzin(R-LA)
Andrew Goldman		
Deirdre Stach		
Vin Weber		

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature_____ Date_____

Printed Name and Title_____

MTC-00030631_0826

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kent Knutson

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

gnature [signature] Date 2/11/99

d Name and Title Harry W. Clark III, Managing Partner

-2 (Rev. 6/98)

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific lobbying issues

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry. (HR. 3736, 2368, 2372, 2991, 695, 947, 1689; S. 2067, 405, 1260, 507, 1723; House/Senate Treasury Appropriations Act of 1999; Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1999; Department of Commerce, Justice and State, The Judiciary and Related Agencies Appropriations for FY 1999).

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name		Covered Official Position (if applicable)
Ed Kutler	8/95 - 8/97	Assistant to the Speaker of the House Of Representatives, Rep. Newt Gingrich(R-GA)
Mimi Simoneaux	1/96 - 1/97	Legislative Asst. for Rep. Billy Tauzin(R-LA)
	1/97 - 2/98	Legislative Dir. for Rep. Billy Tauzin(R-LA)
Andrew Goldman		
Deirdre Stach		
Vin Weber		

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0828

Registrant Name Clark & Weinstock Inc. *Client Name* Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kent Knutson

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

gnature Harry W. Clark III Date 2/11/99

d Name and Title Harry W. Clark III, Managing Partner

MTC-00030631_0829

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code BUD (one per page)

16. Specific lobbying issues

Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry. (HR. 3736, 2368, 2372, 2991, 695, 947, 1689; S. 2067, 405, 1260, 507, 1723; House/Senate Treasury Appropriations Act of 1999; Foreign Operations, Export Financing, and Related Programs Appropriations Act of 1999; Department of Commerce, Justice and State, The Judiciary and Related Agencies Appropriations for FY 1999).

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name		Covered Official Position (if applicable)
Ed Kutler	8/95 - 8/97	Assistant to the Speaker of the House Of Representatives, Rep. Newt Gingrich(R-GA)
Mimi Simoneaux	1/96 - 1/97	Legislative Asst. for Rep. Billy Tauzin(R-LA)
	1/97 - 2/98	Legislative Dir. for Rep. Billy Tauzin(R-LA)
Andrew Goldman		
Deirdre Stach		
Vin Weber		

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0830

Registrant Name Clark & Weinstock Inc. Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kent Knutson

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature Harry W. Clark III Date 2/11/99

Typed Name and Title Harry W. Clark III, Managing Partner

LD-2 (Rev. 6/98)

ATTACHMENT 17

TO THE

DECLARATION OF BRIAN DAUTCH

RECEIVED
LEGISLATIVE RESOURCE CENTER
99 AUG 11 AM 10:51
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

LOBBYING REPORT

6

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

1. Registrant Name
Clark & Weinstock

2. Address ☐ Check if different than previously reported
1775 I Street, NW Suite 700, Washington, DC 20006

3. Principal Place of Business (if different from line 2)
City: New York State/Zip (or Country) NY 10017

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Cheryl Faunce	(202) 261-4005	cfaunce@cwdc.com	9443-381

7. Client Name ☐ Self
Microsoft Corp

6. House ID #
316-98027

TYPE OF REPORT 8. Year 1999 Midyear (January 1-June 30) ☒ OR Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 220,000.00
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. *See instructions for description of options.*

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature_____

Printed Name and Title Vic Fazio - Partner

MTC-00030631_0833

Registrant Name Clark & Weinstock Client Name Microsoft Corp.

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code BUD (one per page)

16. Specific lobbying issues

H.R. 2490, Treasury and General Government Appropriations Act, 2000,
H.R. 2606, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S. 1217, Departments of Commerce, State, and Justice, the Judiciary and Related Agencies Appropriations Act, 2000,
S. 1234, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
S. 1282, Treasury and General Government Appropriations Act, 2000,
Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bainwol, Mitch	Ch of Staff, Sen. Mack Ch of Staff, Sen. Rep. Conf	☒
Goldman, Andrew		☐
Kutler, Ed	Asst. to the Speaker, U.S. House of Reps.	☐
Simoneaux, Mimi	Leg. Dir. for Rep. Tauzin	☐
Stach, Deirdre		☐
Stuart, Sandi	Asst. Sec. of Defense (DOD)	☒
Weber, Vin		☐
Fazio, Vic (Exec. Branch Only)	Member, U.S. House of Reps.	☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/99

Printed Name and Title Vic Fazio - Partner

MTC-00030631_0834

Registrant Name Clark & Weinstock Client Name Microsoft Corp.

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

H.R. 2490, Treasury and General Government Appropriations Act, 2000,
H.R. 2606, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S. 1217, Departments of Commerce, State, and Justice, the Judiciary and Related Agencies Appropriations Act, 2000,
S. 1234, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
S. 1282, Treasury and General Government Appropriations Act, 2000,
Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bainwol, Mitch	Ch of Staff, Sen. Mack Ch of Staff, Sen. Rep. Conf	☒
Goldman, Andrew		☐
Kutler, Ed	Asst. to the Speaker, U.S. House of Reps.	☐
Simoneaux, Mimi	Leg. Dir. for Rep. Tauzin	☐
Stach, Deirdre		☐
Stuart, Sandi	Asst. Sec. of Defense (DOD)	☒
Weber, Vin		☐
Fazio, Vic (Exec. Branch Only)	Member, U.S. House of Reps.	☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/99

Printed Name and Title Vic Fazio - Partner

MTC-00030631_0835

Registrant Name Clark & Weinstock Client Name Microsoft Corp.

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific lobbying issues

H.R. 2490, Treasury and General Government Appropriations Act, 2000,
H.R. 2606, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S. 1217, Departments of Commerce, State, and Justice, the Judiciary and Related Agencies Appropriations Act, 2000,
S. 1234, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
S. 1282, Treasury and General Government Appropriations Act, 2000,
Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bainwol, Mitch	Ch of Staff, Sen. Mack Ch of Staff, Sen. Rep. Conf	☒
Goldman, Andrew		☐
Kutler, Ed	Asst. to the Speaker, U.S. House of Reps.	☐
Simoneaux, Mimi	Leg. Dir. for Rep. Tauzin	☐
Stach, Deirdre		☐
Stuart, Sandi	Asst. Sec. of Defense (DOD)	☒
Weber, Vin		☐
Fazio, Vic (Exec. Branch Only)	Member, U.S. House of Reps.	☒

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/99

Printed Name and Title Vic Fazio - Partner

MTC-00030631_0836

Registrant Name Clark & Weinstock Client Name Microsoft Corp.

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific lobbying issues

H.R. 2490, Treasury and General Government Appropriations Act, 2000,
H.R. 2606, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S. 1217, Departments of Commerce, State, and Justice, the Judiciary and Related Agencies Appropriations Act, 2000,
S. 1234, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
S. 1282, Treasury and General Government Appropriations Act, 2000,
Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bainwol, Mitch	Ch of Staff, Sen. Mack Ch of Staff, Sen. Rep. Conf	☒
Goldman, Andrew		☐
Kutler, Ed	Asst. to the Speaker, U.S. House of Reps.	☐
Simoneaux, Mimi	Leg. Dir. for Rep. Tauzin	☐
Stach, Deirdre		☐
Stuart, Sandi	Asst. Sec. of Defense (DOD)	☒
Weber, Vin		☐
Fazio, Vic (Exec. Branch Only)	Member, U.S. House of Reps.	☒

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/99

Printed Name and Title Vic Fazio - Partner

MTC-00030631_0837

Registrant Name Clark & Weinstock Client Name Microsoft Corp.

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific lobbying issues

H.R. 2490, Treasury and General Government Appropriations Act, 2000,
H.R. 2606, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S. 1217, Departments of Commerce, State, and Justice, the Judiciary and Related Agencies Appropriations Act, 2000,
S. 1234, Foreign Operations, Export Financing, and Related Programs Appropriations Act, 2000,
S. 1282, Treasury and General Government Appropriations Act, 2000,
Support of Microsoft's position across a wide range of issues, including intellectual property rights, taxes, encryption, fast track trade authority, normal trade relations, internet tax freedom, and other matters affecting the computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bainwol, Mitch	Ch of Staff, Sen. Mack Ch of Staff, Sen. Rep. Conf	☒
Goldman, Andrew		☐
Kutler, Ed	Asst. to the Speaker, U.S. House of Reps.	☐
Simoneaux, Mimi	Leg. Dir. for Rep. Tauzin	☐
Stach, Deirdre		☐
Stuart, Sandi	Asst. Sec. of Defense (DOD)	☒
Weber, Vin		☐
Fazio, Vic (Exec. Branch Only)	Member, U.S. House of Reps.	☒

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature V. H. Fazio Date 8/9/99

Printed Name and Title Vic Fazio - Partner

Form LD-2 (Rev.6/98) Page 6 of 6

MTC-00030631_0838

ATTACHMENT 18

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

HAND DELIVERED

00 AUG 10 PM 5:02

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
Clark & Weinstock

2. Address ☐ Check if different than previously reported
1775 I Street NW, Ste 700 **Washington, DC 20006**

3. Principal Place of Business (if different from line 2)
City **New York,** State/Zip (or Country) **NY 10017**

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Lisa Simpson	**202-261-4025**	**lisa@cwdc.com**	**9443-381**

7. Client Name ☐ Self
Microsoft Corp

6. House ID #
316-98027

TYPE OF REPORT 8. Year **2000** Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$280,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

gnature _____ Date **8/11/2000**

.ated Name and Title **Vin Weber - Partner**

MTC-00030631_0840

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
See attached page.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kutler, Ed		No
Simoneaux, Mimi		No
Stach, Deirdre		No
Weber, Vin		No
Fazio, Vic	Member, U.S. House of Representatives	No
Stuart, Sandi	Asst. Sec. of Defense, Legislative Branch Only	No
	—	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/11/2000

Printed Name and Title Vin Weber - Partner

MTC-00030631_0841

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

m	Description	Data
16	Lobbying Issues	Lobbied the following legislation dealing with digital signatures: * H.R. 1572, To require the adoption and utilization of digital signatures by Federal agencies and to encourage the use of digital signatures in private sector electronic transactions. * H.R. 1685, To provide for the recognition of electronic signatures for the conduct of interstate and foreign commerce, to restrict the transmission of certain electronic mail advertisements, to authorize the Federal Trade Commission to prescribe rules to protect the privacy of users of commercial Internet websites, to promote the rapid deployment of broadband Internet services, and for other purposes. * H.R. 1714, To facilitate the use of electronic records and signatures in interstate or foreign commerce. Educated members of Congress regarding Microsoft's position on instant messaging. Educated members of Congress regarding various Internet privacy issues. Lobbied the following legislation dealing with clarifying hyperlinks to the Internet: * S. 247, A bill to amend title 17, United States Code, to reform the copyright law with respect to satellite retransmissions of broadcast signals, and for other purposes. * H.R. 768, To amend title 17, United States Code, to reform the copyright law with respect to satellite retransmissions of broadcast signals, and for other purposes. * H.R. 1027, To provide for the carriage by satellite carriers of local broadcast station signals, and for other purposes. * H.R. 1554, To amend the provisions of title 17, United States Code, and the Communications Act of 1934, relating to copyright licensing and carriage of broadcast signals by satellite.

MTC-00030631_0842

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code GOV (one per page)

16. Specific Lobbying issues
Informed members of Congress regarding Microsoft's position on the Department of Justice's antitrust suit.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kutler, Ed		**No**
Simoneaux, Mimi		**No**
Stach, Deirdre		**No**
Weber, Vin		**No**
Fazio, Vic	**Member, U.S. House of Representatives**	**No**
Stuart, Sandi	**Asst. Sec. of Defense, Legislative Branch Only**	**No**
	—	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/11/2000

Printed Name and Title Vin Weber - Partner

MTC-00030631_0843

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

OBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant .gaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific Lobbying issues
Lobbied the following legislation dealing with H1-B visas:
*** S. 1563, A bill to establish the Immigration Affairs Agency within the Department of Justice, and for other purposes.**
*** H.R. 2687, To amend the Immigration and Nationality Act to establish a 5-year pilot program under which certain aliens completing a postsecondary degree in mathematics, science, engineering, or computer science are permitted to change nonimmigrant classification in order to remain in the United States for a 5-year period for the purpose of working in one of those fields.**
*** H.R. 3983, To amend the Immigration and Nationality Act to promote a fairer and more efficient means for using highly skilled workers, to improve the collection and use of H-1B nonimmigrant fees, and for other purposes.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kutler, Ed		No
Simoneaux, Mimi		No
Stach, Deirdre		No
Weber, Vin		No
Fazio, Vic	Member, U.S. House of Representatives	No
Stuart, Sandi	Asst. Sec. of Defense, Legislative Branch Only	No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

.gnature _____ Date 8/11/2000

.inted Name and Title Vin Weber - Partner

MTC-00030631_0844

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

OBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant ıgaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific Lobbying issues

Lobbied the following legislation dealing with Permanent Normal Trade Relations (PNTR) with China:
*** H.J. Res. 57, Disapproving the extension of nondiscriminatory treatment (normal trade relations treatment) to the products of the People's Republic of China.**
*** S. 2115, A bill to ensure adequate monitoring of the commitments made by the People's Republic of China in its accession to the World Trade Organization and to create new procedures to ensure compliance with those commitments.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate

Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kutler, Ed		No
Simoneaux, Mimi		No
Stach, Deirdre		No
Weber, Vin		No
Fazio, Vic	Member, U.S. House of Representatives	No
Simpson, Lisa		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

ɜnature _____ Date 8/11/2000

..nted Name and Title Vin Weber - Partner

MTC-00030631_0845

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

nformation Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client
Bainwol, Mitch

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, **or** controls, **or** is affiliated with the registrant, client, or affiliated organization

ignature Vin Weber Date 8/11/2000

inted Name and Title Vin Weber - Partner

MTC-00030631_0846

ATTACHMENT 19

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

01 FEB -9 PM 2:46

HAND DELIVERED

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

7

1. Registrant Name
Clark & Weinstock

2. Registrant Address ☐ Check if different than previously reported
Address **1775 I Street NW, Ste 700**
City **Washington,** State/Zip (or Country) **DC 20006**

3. Principal Place of Business (if different from line 2)
City **New York,** State/Zip (or Country) **NY 10017**

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Lisa Simpson	**202-261-4025**	**lisa@cwdc.com**	**9443-381**

7. Client Name ☐ Self	6. ~~House ID #~~
Microsoft Corp	**316-98027**

TYPE OF REPORT

8. Year **2000** Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$280,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **2/9/01**

Printed Name and Title **Vin Weber - Partner**

MTC-00030631_0848

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
See attached page.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Fazio, Vic	**Member, U.S. House of Representatives**	**No**
Kutler, Ed		**No**
Simoneaux, Mimi		**No**
Stach, Deirdre		**No**
Stuart, Sandi	**Asst. Sec. of Defense, Legislative Branch Only**	**No**
Urban, Anne	**Legislative Director, Sen. Robert Kerrey**	**Yes**
Weber, Vin		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0849

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Item	Description	Data
5	Lobbying Issues	Lobbied the following legislation dealing with digital signatures: * H.R. 1572, To require the adoption and utilization of digital signatures by Federal agencies and to encourage the use of digital signatures in private sector electronic transactions. * H.R. 1685, To provide for the recognition of electronic signatures for the conduct of interstate and foreign commerce, to restrict the transmission of certain electronic mail advertisements, to authorize the Federal Trade Commission to prescribe rules to protect the privacy of users of commercial Internet websites, to promote the rapid deployment of broadband Internet services, and for other purposes. * H.R. 1714, To facilitate the use of electronic records and signatures in interstate or foreign commerce. Educated members of Congress regarding Microsoft's position on instant messaging. Educated members of Congress regarding various Internet privacy issues. Lobbied the following legislation dealing with clarifying hyperlinks to the Internet: * S. 247, A bill to amend title 17, United States Code, to reform the copyright law with respect to satellite retransmissions of broadcast signals, and for other purposes. * H.R. 768, To amend title 17, United States Code, to reform the copyright law with respect to satellite retransmissions of broadcast signals, and for other purposes. * H.R. 1027, To provide for the carriage by satellite carriers of local broadcast station signals, and for other purposes. * H.R. 1554, To amend the provisions of title 17, United States Code, and the Communications Act of 1934, relating to copyright licensing and carriage of broadcast signals by satellite. Educated members of Congress on the competition in the software market.

MTC-00030631_0850

Registrant Name: **Clark & Weinstock**

Client Name: **Microsoft Corp**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **GOV** (one per page)

16. Specific Lobbying issues
Informed members of Congress regarding Microsoft's position on the Department of Justice's antitrust suit.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Fazio, Vic	**Member, U.S. House of Representatives**	**No**
Kutler, Ed		**No**
Simoneaux, Mimi		**No**
Stach, Deirdre		**No**
Stuart, Sandi	**Asst. Sec. of Defense, Legislative Branch Only**	**No**
Urban, Anne	**Legislative Director, Sen. Robert Kerrey**	**Yes**
Weber, Vin		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **2/9/01**

Printed Name and Title **Vin Weber - Partner**

MTC-00030631_0851

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. *Specific Lobbying issues*
Lobbied the following legislation dealing with H1-B visas:
*** S. 1563, A bill to establish the Immigration Affairs Agency within the Department of Justice, and for other purposes.**
*** H.R. 2687, To amend the Immigration and Nationality Act to establish a 5-year pilot program under which certain aliens completing a postsecondary degree in mathematics, science, engineering, or computer science are permitted to change nonimmigrant classification in order to remain in the United States for a 5-year period for the purpose of working in one of those fields.**
*** H.R. 3983, To amend the Immigration and Nationality Act to promote a fairer and more efficient means for using highly skilled workers, to improve the collection and use of H-1B nonimmigrant fees, and for other purposes.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Fazio, Vic	**Member, U.S. House of Representatives**	**No**
Kutler, Ed		**No**
Simoneaux, Mimi		**No**
Stach, Deirdre		**No**
Stuart, Sandi	**Asst. Sec. of Defense, Legislative Branch Only**	**No**
Urban, Anne	**Legislative Director, Sen. Robert Kerrey**	**Yes**
Weber, Vin		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0852

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TRD** (one per page)

16. Specific Lobbying issues
Lobbied the following legislation dealing with Permanent Normal Trade Relations (PNTR) with China:
*** H.J. Res. 57, Disapproving the extension of nondiscriminatory treatment (normal trade relations treatment) to the products of the People's Republic of China.**
*** S. 2115, A bill to ensure adequate monitoring of the commitments made by the People's Republic of China in its accession to the World Trade Organization and to create new procedures to ensure compliance with those commitments.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Fazio, Vic	**Member, U.S. House of Representatives**	**No**
Kutler, Ed		**No**
Simoneaux, Mimi		**No**
Simpson, Lisa		**No**
Stach, Deirdre		**No**
Urban, Anne	**Legislative Director, Sen. Robert Kerrey**	**Yes**
Weber, Vin		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **2/9/01**

Printed Name and Title **Vin Weber - Partner**

MTC-00030631_0853

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client
Simoneaux, Mimi

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, **or** controls, **or** is affiliated with the registrant, client, or affiliated organization

Signature Vin Weber Date 2/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0854

ATTACHMENT 20

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER

2001 AUG 13 AM 11:48

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

9

1. Registrant Name
   Clark & Weinstock

2. Registrant Address ☐ Check if different than previously reported
   Address **1775 I Street NW, Ste 700**
   City **Washington,** State/Zip (or Country) **DC 20006**

3. Principal Place of Business (if different from line 2)
   City **New York,** State/Zip (or Country) **NY 10017**

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Lisa Simpson	**202-261-4025**	**lisa@cwdc.com**	**9443-381**

7. Client Name ☐ *Self*	6. House ID #
Microsoft Corp	**316-98027**

TYPE OF REPORT

8. Year **2001** Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$240,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **8/9/01**

Printed Name and Title **Vin Weber - Partner**

MTC-00030631_0856

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
See attached page.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Department of Commerce
Department of Treasury
Executive Office of the President
House of Representatives
Office of the Vice President
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bieron, Brian	**Policy Director, House Rules Committee**	**Yes**
Fazio, Vic		**No**
Gribbin, Dave		**Yes**
Kutler, Ed		**No**
Mathews, Jim		**Yes**
Morrison, Timothy	**Associate Director, Presidential Personnel**	**Yes**
Stach, Deirdre		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0857

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Item	Description	Data
16	Lobbying Issues	Help develop strategy and company policies on privacy law, including matters related to Windows XP and .NET and instant messaging through the following legislation: H.R. 1017, Anti-spamming Act of 2001, to prohibit unsolicited e-mail know as spam S. 2606, Consumer Privacy Protection Act S. 197, Spyware Control Privacy Protection Act, to provide for the disclosure of the collection of information through computer software and for other purposes Intellectual Properties issues--providing cyber and intellectual property enformement: Senate Report 107-42 S. 1215, Departments of Commerce, Justice, State, Judiciary and related Agencies Appropriations Act 2002 H.R. 2500, Departments of Commerce, Justice, State, Judiciary and related Agencies Appropriations Act 2002 H. AMDT. 192 Walters Amendment, to provide that none of the funds designated for the Office of the U.S. Trade Representative may be used to initiate a proceeding in the WTO challenging any law or policy of a developing country that promotes access to HIV/AIDS, pharmaceuticals or medical technologies to the population of the country H. AMDT. 194 Walters Amendment 2, to prohibit use of funds to initiate a proceeding in the WTO challenging any law of a country that is not a member of the OECD H. AMDT. 193 Kucinich Amendment, prohibits the use of funds in the bill to initiate a proceeding in the WTO challenging any law of a country that is not a member of the OECD relating to HIV/AIDS pharmaceuticals.

MTC-00030631_0858

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Item	Description	Data
18a	Lobbyist Name	Stuart, Sandi
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	Urban, Anne
18b	Covered Official Position	Legislative Director, Sen. Robert Kerrey
18c	New Lobbyist	No
18a	Lobbyist Name	Weber, Vin
18b	Covered Official Position	
18c	New Lobbyist	No

MTC-00030631_0859

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code GOV (one per page)

16. Specific Lobbying issues
Informed members of Congress regarding Microsoft's position on the Department of Justice's antitrust suit.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bieron, Brian	**Policy Director, House Rules Committee**	**Yes**
Fazio, Vic		**No**
Gribbin, Dave		**Yes**
Kutler, Ed		**No**
Mathews, Jim		**Yes**
Morrison, Timothy	**Associate Director, Presidential Personnel**	**Yes**
Stach, Deirdre		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0860

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Item	Description	Data
18a	Lobbyist Name	Stuart, Sandi
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	Urban, Anne
18b	Covered Official Position	Legislative Director, Sen. Robert Kerrey
18c	New Lobbyist	No
18a	Lobbyist Name	Weber, Vin
18b	Covered Official Position	
18c	New Lobbyist	No

MTC-00030631_0861

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific Lobbying issues
Lobbied the following legislation dealing with Trade Promotion Authority Act of 2001
*** H.R. 2149, To extend trade authorities procedures with respect to reciprocal trade agreements**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Bieron, Brian	**Policy Director, House Rules Committee**	**Yes**
Fazio, Vic		**No**
Gribbin, Dave		**Yes**
Kutler, Ed		**No**
Mathews, Jim		**Yes**
Morrison, Timothy	**Associate Director, Presidential Personnel**	**Yes**
Stach, Deirdre		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0862

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Item	Description	Data
18a	**Lobbyist Name**	**Urban, Anne**
18b	**Covered Official Position**	**Legislative Director, Sen. Robert Kerrey**
18c	**New Lobbyist**	**No**
18a	**Lobbyist Name**	**Weber, Vin**
18b	**Covered Official Position**	
18c	**New Lobbyist**	**No**

MTC-00030631_0863

Registrant Name: Clark & Weinstock

Client Name: Microsoft Corp

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

IMM

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, **or** controls, **or** is affiliated with the registrant, client, or affiliated organization

Signature _____ Date 8/9/01

Printed Name and Title Vin Weber - Partner

MTC-00030631_0864

ATTACHMENT 21

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
LEGISLATIVE RESOURCE CENTER
98 AUG -7 AM 9:51
OFFICE OF THE CLERK
HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

4

1. Registrant Name
Covington & Burling

2. Address ☐ Check if different than previously reported
1201 Pennsylvania Avenue, NW

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country) D.C. 20004

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Stuart C. Stock	202-662-5384		11195-672

7. Client Name ☐ Self
Microsoft Corporation

6. ~~House ID #~~
31827064

TYPE OF REPORT

8. Year 1998 Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 40,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature [signature]

Printed Name and Title Stuart C. Stock, Partner

MTC-00030631_0866

Registrant Name Covington & Burling Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code**, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Competition issues affecting computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Charles F. Rule		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature [signature] Date August 4, 1998

Printed Name and Title Stuart C. Stock, Partner

MTC-00030631_0867

Registrant Name Covington & Burling Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code**, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific lobbying issues

Electronic commerce matters relating to international electronic signature proposals.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Department of Commerce

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
E. Jason Albert		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature _____ Date August 4, 1998

Printed Name and Title Stuart C. Stock, Partner

MTC-00030631_0868

Registrant Name Covington & Burling Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code**, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific lobbying issues

- Protection of intellectual property through proposed federal action.
- Protection of intellectual property in World Bank lending programs.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
Department of Commerce
Department of Treasury
Office of Management and Budget

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
E. Jason Albert		☐
Laurie C. Self		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature [signature] Date August 4, 1998

Printed Name and Title Stuart C. Stock, Partner

MTC-00030631_0869

ATTACHMENT 22

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

99 FEB 10 AM 9:07

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page.** 5

1. Registrant Name
Covington & Burling

2. Address ☐ Check if different than previously reported.
1201 Pennsylvania Avenue, N.W.

3. Principal Place of Business (if different from line 2)

City: **Washington** State/Zip (or Country) **D.C. 20004**

4. Contact Name	Telephone	Email (optional)	5. Senate ID #
Stuart C. Stock	**202-662-5384**		**11195-672**
7. Client Name ☐ Self			6. ~~House ID #~~
Microsoft Corporation			**31827064**

TYPE OF REPORT 8. Year 1998 Midyear (January 1-June 30) ☐ **OR** Year End (~~July 1-December 31~~) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 60,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income for the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client.)

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under 162(e) of the Internal Revenue Code

Signature _____ Date 2/4/99

Printed Name and Title **Stuart C. Stock, Partner**

Registrant Name **Covington & Burling** Client Name **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code**, provide information as requested. Attach additional page(s) as needed.

15. General issue area code **CPI** (one per page)

16. Specific lobbying issues

Competition issues affecting computer software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Charles F. Rule		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/4/99
Printed Name and Title **Stuart C. Stock, Partner**

Registrant Name Covington & Burling Client Name **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code ___TRD _____ (one per page)

16. Specific lobbying issues

Electronic Commerce matters relating to international electronic signature proposals.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Department of Commerce

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
E. Jason Albert		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/4/99

Printed Name and Title **Stuart C. Stock, Partner**

Registrant Name **Covington & Burling** Client Name **Microsoft Corporation**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code ___CPT _____ (one per page)

16. Specific lobbying issues

- **Protection of intellectual property through proposed federal action and implementation of Computer Software Piracy Executive Order.**
- **Protection of intellectual property in World Bank lending programs.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Department of Commerce
Department of Treasury
Office of Management and Budget

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
E. Jason Albert		☐
Laurie C. Self		☐
Stuart C. Stock		☒
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 2/4/99

Printed Name and Title **Stuart C. Stock, Partner**

Registrant Name Covington & Burling Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client
Victoria A. Carter

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that **no longer** owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature _____ Date 2/4/99

Printed Name and Title **Stuart C. Stock, Partner**

ATTACHMENT 23

TO THE

DECLARATION OF BRIAN DAUTCH

Back

Number of Pages: 6
Current Page: 2

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

SECRETARY OF THE SEN
99 AUG 12 PM 2:
H. D.

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page.**

1. Registrant Name
Covington & Burling

2. Address ☐ Check if different than previously reported.
1201 Pennsylvania Avenue, N.W.

3. Principal Place of Business (if different from line 2)

City: **Washington** State/Zip (or Country) **D.C. 20004**

4. Contact Name	Telephone	Email (optional)	5. Senate ID #
Stuart C. Stock	**202-662-5384**		**11195-672**
7. Client Name ☐ Self			6. House ID #
Microsoft Corporation			**31827064**

TYPE OF REPORT 8. Year 1999 Midyear (January 1-June 30) ☒ **OR** Year End (July1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 40,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income for the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client.)

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indica expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under 162(e) of t Internal Revenue Code

MTC-00030631_0877

Signature _____ Date August 10, 1999

Printed Name and Title **Stuart C. Stock, Partner**

[redacted]

Registrant Name Covington & Burling Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which t registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for ea code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific lobbying issues

Electronic commerce matters relating to international electronic signature proposals.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Department of Commerce

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	Nev
Stuart C. Stock		☒
E. Jason Albert		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Date August 10, 1999

Printed Name and Title Stuart C. Stock, Partner

[redacted]

Registrant Name **Covington & Burling** Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which tl registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for ea** code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code **CPI** (one per page)

16. Specific lobbying issues

Electronic signature legislation, including H.R. 1714 and S. 761.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate
Department of Commerce

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	Nev
Stuart C. Stock		☒
Erin M. Egan		☒
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Date August 10, 1999

Printed Name and Title Stuart C. Stock, Partner

[redacted]

Registrant Name **Covington & Burling** Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which t registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for ea code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific lobbying issues

- **Protection of intellectual property through proposed federal action and implementation of Computer Software Piracy Executive Order.**
- **Protection of intellectual property in World Bank lending programs.**

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Department of Commerce

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Stuart C. Stock		☐
Laurie C. Self		☐
E. Jason Albert		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date August 10, 1999

Printed Name and Title Stuart C. Stock, Partner

[redacted]

ATTACHMENT 24

TO THE

DECLARATION OF BRIAN DAUTCH

Secretary of the Senate
Clerk of the House of Representatives

RECEIVED
98 FEB 17 AM 10:05
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES
LEGISLATIVE RESOURCE CENTER

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5)

2 For Official Use

1. Year 1997

2. Report type *(check all that apply)* Midyear (January 1- June 30) ☐ Year End (July 1-December 31) ☒
Amended report ☐ Termination Report ☐
No Activity *(registration to remain in effect)* ☐

REGISTRANT

3. Name of Registrant DOWNEY CHANDLER, INC.

4. Telephone number and contact name
202 789 1110 Contact Kathleen Tynan McLaughlin

CLIENT

Lobbying firms file separate reports for each client. An organization employing in-house lobbyists indicates "Self."

5. Name of Client Microsoft Corporation 31805008

INCOME OR EXPENSES

Answer line 6 or line 7 as applicable.

6. LOBBYING FIRMS. Income from the client during the reporting period, other than income unrelated to lobbying activities, was:

Less than $10,000 ☐ $10,000 or more ☒

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of all income from the client during this reporting period. Include any payments by any other entity for lobbying activities on behalf of the client. Exclude income unrelated to lobbying activities.

Income $ $60,000 Total for year *(if Year End report)* $ 140,000

7. ORGANIZATIONS EMPLOYING IN-HOUSE LOBBYISTS. Expenses incurred in connection with lobbying activities during the reporting period were:

Less than $10,000 ☐ $10,000 or more ☐

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of the total amount of all lobbying expenses incurred by the registrant and its employees during this reporting period.

Expense $ _____ Total for year *(if Year End report)* $ _____

A. Registrants that report lobbying expenses under section 6033(b)(8) of the Internal Revenue Code may provide a good faith estimate of the applicable amounts that would be required to be disclosed under section 6033(b)(8) for the semiannual reporting period, and may consider as lobbying activities only those defined under section 4911(d) of the Internal Revenue Code. If selecting this method, check box and (i) enter estimated amounts on the "Expenses" line above; or (ii) attach a copy of the IRS Form 990 that includes this reporting period. ☐

B. Registrants subject to section 162(e) of the Internal Revenue Code may make a good faith estimate of all amounts that would not be deductible under section 162(e) for the semiannual reporting period, and may consider as lobbying activities only those activities the costs of which are not deductible pursuant to section 162(e). If selecting this method, check box and enter estimated amounts on the "Expenses" line above. ☐

MTC-00030631_0886

Registrant Name DOWNEY CHANDLER, INC.

Client Name Microsoft Corporation 31805008

LOBBYING ISSUES. On line 8 below, enter the code for *one* general lobbying issue area in which the registrant engaged in lobbying activities for the client during this reporting period *(select applicable code from list in the instructions and on the reverse side of Form LD-2, page 1).* For that general issue area *only,* complete lines 9 through 12. If the registrant engaged in lobbying activities for the client in more than one general issue area, use one Lobbying Report Addendum page for each additional general issue area.

8. General lobbying issue area code *(enter one)* CPT

9. Specify lobbying issues *(include bill numbers and specific executive branch actions)*

Intellectual Property Rights
Patent Reform
Internet issues
Encryption
Immigration
Anti-trust issues

10. Houses of Congress and Federal agencies contacted

U.S. House of Representatives
U.S. Senate
Office of the Vice President
Department of Justice

11. Name and title of each employee who acted as a lobbyist

Thomas J. Downey, Chairman
Rod Chandler, President
Daniel T. Bross, Vice President
Margaret M. McCloud, Director

12. *For registrants identifying foreign entities in the Lobbying Registration (Form LD-1, line 12) or any updates:* Interest of each such foreign entity in the specific lobbying issues listed on line 9 above

NA

This report includes 0 Addendum pages.

Signature Thomas J. Downey Date 2-13-98

Printed Name and Title Thomas J. Downey Chairman

MTC-00030631_0887

ATTACHMENT 25

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

98 AUG -7 PM 12:57

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page** 4

1. Registrant Name

DOWNEY CHANDLER, INC.

2. Address ☐ Check if different than previously reported

1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)

City: WASHINGTON State/Zip (or Country) DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self

MICROSOFT CORPORATION

6. House ID # 31805008

TYPE OF REPORT 8. Year 1998 Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 80,000
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☒ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature_____

Printed Name and Title THOMAS J. DOWNEY, CHAIRMAN

MTC-00030631_0889

Registrant Name DOWNEY CHANDLER Client Name MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Software piracy
Judiciary Committee hearing on Competition and Innovation in the Digital age

Immigration
Competition
Department of Justice hearing

(continued)

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

US Senate
House of Representatives
Office of the Vice President
Department of Justice
Department of State

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Daniel Bross		☐
Rodney Chandler		☐
Kelli Emerick		☐
Thomas Downey		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0890

Registrant Name DOWNEY CRANDALL Client Name [illegible]

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues Continued
Technology to assist disabled
antitrust
Windows 98

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0891

Registrant Name DOWNEY CHANDLER Client Name MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific lobbying issues

Digital TV standards

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

US Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kelli Emerick		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Thomas J. Downey Date 8-7-98

Printed Name and Title THOMAS J. DOWNEY, CHAIRMAN

MTC-00030631_0892

ATTACHMENT 26

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

LEGISLATIVE RESOURCE CENTER
99 FEB 16 PM 3:12
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

5

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

1. Registrant Name
DOWNEY CHANDLER, INC.

2. Address ☐ Check if different than previously reported
1225 I STREET N.W. SUITE 350

3. Principal Place of Business (if different from line 2)
City: WASHINGTON State/Zip (or Country) DC 20005

4. Contact Name: Kathleen Tynan McLaughlin Telephone: 202 789 1110 E-mail (optional):

5. Senate ID # 12573-253

7. Client Name ☐ Self
MICROSOFT CORPORATION

6. House ID # 31805008

TYPE OF REPORT 8. Year 1998 Midyear (January 1-June 30) ☐ OR Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 60,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature_____

Printed Name and Title_____

MTC-00030631_0894

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues
SOFTWARE PIRACY
ANTITRUST
COMPETITION
TECHNOLOGY + HEALTH
JUDICIARY COMMITTEE HEARING ON COMPETITION and INNOVATION
DEPARTMENT OF JUSTICE HEARING

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Senate
House of Representatives
Office of the Vice President
Department of Commerce
Department of Justice
Department of State

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Daniel Bross		☐
Kelli Emerick		☐
Rod Chandler		☐
Tom Downey		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature_____ Date_____

Printed Name and Title_____

MTC-00030631_0895

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific lobbying issues

DIGITAL TV STANDARDS
COMPETITION

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kelli Emerick		☐
Rod Chandler		☐
Tom Downey		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature_____ Date_____

Printed Name and Title_____

MTC-00030631_0896

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code, provide** information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

Specific lobbying issues

H.R. 3736, IMMIGRATION BILL

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

OFFICE OF THE VP
SENATE
HOUSE OF REPRESENTATIVES

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Tom Downey		☐
Rod Chandler		☐
Dan Bross		☐
Kelli Emerick		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature_____ Date_____

Printed Name and Title_____

MTC-00030631_0897

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

2. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Daniel Bross

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature Thomas J. Downey Date 2-16-99

Printed Name and Title THOMAS J. DOWNEY, CHAIRMAN

MTC-00030631_0898

ATTACHMENT 27

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

RECEIVED
LEGISLATIVE RESOURCE CENTER
99 JUL 30 PM 4:28
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page 4

1. Registrant Name
DOWNEY CHANDLER, INC

2. Address ☐ Check if different than previously reported
1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country) DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self
Microsoft Corporation

6. House ID #
31805008

TYPE OF REPORT 8. Year 1999 Midyear (January 1 -June 30) ☒ OR Year End (July 1 -December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ * Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ * $ 80,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ * $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expense accounting method. See instructions for description of options..

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Tide _____

MTC-00030631_0900

Registrant Name DOWNEY CHANDLER, INC Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide i nation as requested. Attach additional page(s) as needed.

15 eneral issue area code TEC (one per page)

16. Specific lobbying issues

Broadband
Information Technology

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
i Emerick		☐
Tom Downey		☐
Rod Chandler		☐
Thomas P. Scott		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

m LD-2 (Rev.6/98)

MTC-00030631_0901

Registrant Name DOWNEY CHANDLER, INC Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide rmation as requested. Attach additional page(s) as needed.

General issue area code CPI (one per page)

16. Specific lobbying issues

antitrust
education technology
communications issues
patent reform
Microsoft trial
intellectual property
encryption
R & D tax credit

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives
Office of the Vice President

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alli Emerick		☐
Tom Downey		☐
Rod Chandler		☐
Thomas P. Scott		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0902

Registrant Name [redacted] Client Name [redacted]

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Rod Chandler

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature [signature] Date 7-30-99

Printed Name and Title Thomas J. Downey, Chairman

MTC-00030631_0903

ATTACHMENT 28

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

RECEIVED
LEGISLATIVE RESOURCE CENTER
00 FEB 14 PM 2:23
OFFICE OF THE CLERK
HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

1. Registrant Name
DOWNEY McGRATH GROUP, INC.

2. Address ☐ Check if different than previously reported
1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country) DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self	6. House ID #
Microsoft	31805008

TYPE OF REPORT 8. Year 1999 Midyear (January 1 -June 30) ☐ OR Year End (July 1 -December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ * Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ * $ 100,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ * $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expense accounting method. See instructions for description of options..

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Title _____

MTC-00030631_0905

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant ;aged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide ›rmation as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific lobbying issues

Broadband
Information Technology
business issues
Satellite Home Viewer Act

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives
Small Business Administration

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kelli Emerick		☐
Tom Downey		☐
Ray McGrath		☐
Thomas P. Scott		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0906

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

. . . General issue area code CPI (one per page)

16. Specific lobbying issues

antitrust
education technology
communications issues
Microsoft trial
intellectual property
encryption
R & D tax credit
Digital signatures
Technology changes
Digital Divide

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Tom Downey		☐
Ray McGrath		☐
Kelli Emerick		☐
Thomas P. Scott		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

LD-2 (Rev.6/98) Page 3 of 4

MTC-00030631_0907

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant gaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide ormation as requested. Attach additional page(s) as needed.

15. General issue area code LBR (one per page)

16. Specific lobbying issues

Digital Divide

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
om Scott		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Thomas J. Downey Date 2-14-00

Printed Name and Title Thomas J. Downey, Chairman

LD-2 (Rev 6/98) Page 4 of 4

ATTACHMENT 29

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

00 AUG 11 PM 12:15

HAND DELIVERED

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

4

1. Registrant Name
DOWNEY McGRATH GROUP, INC.

2. Address ☐ Check if different than previously reported
1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country): DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self
Microsoft

6. House ID #
31805008

TYPE OF REPORT 8. Year 2000 Midyear (January 1 -June 30) ☒ OR Year End (July 1 -December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ * Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ * $ 80,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ * $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options..

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(c) of the Internal Revenue Code

Signature _____

Printed Name and Title _____

LD-2 (REV. 6/98)

MTC-00030631_0910

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

antitrust
communications issues
intellectual property
encryption
R&D tax credit
digital signatures
digital divide
privacy

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives
Office of the Vice President

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kelli Emerick		☐
m Downey		☐
Ray McGrath		☐
Thomas P. Scott		☐
Elaine Acevedo		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0911

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

5. General issue area code IMM (one per page)

16. Specific lobbying issues

H-1B Visas

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Kelli Emerick		☐
homas P. Scott		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0912

Registrant Name DOWNEY McGRATH GROUP, INC Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

Client new principal place of business (if different from line 20)

State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Kelli Emerick

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature Thomas J. Downey Date August 11, 2000

Printed Name and Title Thomas J. Downey, Chairman

MTC-00030631_0913

ATTACHMENT 30

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER

2001 FEB 14 AM 2:23

FILED
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

4

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

1. Registrant Name
DOWNEY McGRATH GROUP, INC.

2. Address ☐ Check if different than previously reported
1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country) DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self
Microsoft

~~6. House ID #~~
31805008

TYPE OF REPORT 8. Year 2000 Midyear (January 1 -June 30) ☐ OR Year End (July 1 -December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ * Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ * $ 40,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$ 10,000 or more ☐ * $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expense accounting method. See instructions for description of options..

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Tide _____

MTC-00030631_0915

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

. General issue area code CPI (one per page)

16. Specific lobbying issues

antitrust

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Thomas P. Scott		☐
Tom Downey		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0916

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

General issue area code TRD (one per page)

16. Specific lobbying issues

Permanent Normal Trade Relations with China

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
m Scott		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0917

Registrant Name DOWNEY McGRATH GROUP, INC Client Name Microsoft Corporation

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City _____ State/Zip (or Country) _____

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

Thomas P. Scott
Ray McGrath
Elaine Acevedo

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature _____ Date February 14, 2001

Printed Name and Title Thomas J. Downey, Chairman

MTC-00030631_0918

ATTACHMENT 31

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives
Legislative Resource Center
B-106 Cannon Building
Washington, DC 20515

Secretary of the Senate
Office of Public Records
232 Hart Building
Washington, DC 20510

01 AUG 10 AM 10:00
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES
HAND DELIVERED

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

(2)

1. Registrant Name
DOWNEY McGRATH GROUP, INC.

2. Address ☐ Check if different than previously reported
1225 I STREET NW SUITE 350

3. Principal Place of Business (if different from line 2)
City: Washington State/Zip (or Country) DC 20005

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Kathleen Tynan McLaughlin	202 789 1110		12573-253

7. Client Name ☐ Self
Microsoft

6. House ID #
31805008

TYPE OF REPORT 8. Year 2001 Midyear (January 1 -June 30) ☒ OR Year End (July 1 -December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ * Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ * $ 60,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ * $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expense accounting method. See instructions for description of options..

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Tide _____

MTC-00030631_0920

Registrant Name DOWNEY McGRATH GROUP, INC. Client Name Microsoft

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide formation as requested. Attach additional page(s) as needed.

General issue area code CPI (one per page)

16. Specific lobbying issues

Internet privacy
intellectual property issues
Microsoft case - Department of Justice antitrust suit
R & D tax credit

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate
U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
hn Olinger		☐
Tom Downey		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Thomas J. Downey Date August 14, 2001

Printed Name and Title Thomas J. Downey, Chairman

MTC-00030631_0921

ATTACHMENT 32

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
SECRETARY OF THE SENATE
00 AUG 14 PM 4:27

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

1. Registrant Name
LACKMAN & ASSOCIATES, L.L.C.

2. Address ☐ Check if different than previously reported
1101 30TH STREET N.W. SUITE 220

3. Principal Place of Business (if different from line 2)
City: WASHINGTON DC State/Zip (or Country) 20007

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
CAREY LACKMAN	202/337.3137	CAREY.LACKMAN@LACKMAN.COM	

7. Client Name ☐ Self	8. House ID #
MICROSOFT	

TYPE OF REPORT 8. Year 2000 Midyear (January 1-June 30) ☐ OR Year End (July 1-Decembe

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☒ ⇨ Termination Date 6/30/00 11. No Lobbying Acti

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 17,500
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $ _____
Expenses (nearest $20,000)

14. **REPORTING METHOD.** Check box to indicate expe accounting method. See instructions for description of optio

☐ Method A. Reporting amounts using LDA definitions c

☐ Method B. Reporting amounts under section 6033(b)(8 Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of

	Internal Revenue Code

Signature: C Lackman

Printed Name and Title: CAREY LACKMAN, MANAGER

LD-2 (REV. 6/98) PAGE 1

Registrant Name LACKMAN & ASSOCIATES, L.L.C. Client Name MICROSOFT

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the regist engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, pro information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

ANTITRUST

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. SENATE

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
CAREY LACKMAN	N/A

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature C Lackman Date 8/14/00

Printed Name and Title CAREY LACKMAN, MANAGER

Form LD-2 (Rev.6/98) Page 2 of _

ATTACHMENT 33

TO THE

DECLARATION OF BRIAN DAUTCH

RECEIVED
LEGISLATIVE RESOURCE CENTER
00 FEB -2 PM 3:38
OFFICE OF THE CLERK
HOUSE OF REPRESENTATIVES

4

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

1. Registrant Name
McSlarrow & Associates, L.L.C.

2. Address ☐ Check if different than previously reported
14842 North 18th Place, Phoenix, Arizona 85022

3. Principal Place of Business (if different from line 2)
City: State/Zip (or Country)

4. Contact Name: Alison H. McSlarrow | Telephone: (602) 482-3150 | E-mail (optional):

5. Senate ID #: 48703-12

6. House ID #: 34541002

7. Client Name ☐ Self
Microsoft Corporation

TYPE OF REPORT 8. Year 1999 Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 40,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Title _____

MTC-00030631_0928

Registrant Name McSlarrow & Assoc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code COM (one per page)

16. Specific lobbying issues

S. 247, Satellite Home Viewers Improvements Act, provisions relating to video streaming

H.R. 1554, Satellite Copyright, Competition, and Consumer Protection Act, provisions relating to video streaming

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to Senate	☐
	Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☑ Check if None

Signature _____ Date January 21, 2000

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0929

Registrant Name McSlarrow & Assoc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Competition in the software industry

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0930

Registrant Name McSlarrow & Assoc. Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific lobbying issues

S. 761, Millenium Digital Signature Commerce Act, all provisions

H.R. 1774, Electronic Signatures in Global and National Commerce Act, all provisions

H.R. 775/S. 96 (P.L. 106-37), Year 2000 Readiness and Responsibility Act, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Alison H. McSl Date January 21, 2000

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0931

ATTACHMENT 34

TO THE

DECLARATION OF BRIAN DAUTCH

LEGISLATIVE RESOURCE CENTER

2000 AUG 14 PM 4:21

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

AUG 11 2000

5

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

1. Registrant Name

McSlarrow Consulting L.L.C. (formerly McSlarrow & Associates L.L.C.)

2. Address ☒ Check if different than previously reported

6551 Kristina Ursula Court, Falls Church, Virginia 22044

3. Principal Place of Business (if different from line 2)

City: State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Alison H. McSlarrow	(703) 658-0138		48703-12

7. Client Name ☐ Self

Microsoft Corporation

6. House ID # 34541002

TYPE OF REPORT 8. Year 2000 Midyear (January 1-June 30) ☒ OR Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 40,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ Method A. Reporting amounts using LDA definitions only

☐ Method B. Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ Method C. Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Title _____

MTC-00030631_0933

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Competition in the software industry

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to	☐
	Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0934

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific lobbying issues

S. 761, Millenium Digital Signature Commerce Act, all provisions

H.R. 1714, Electronic Signatures in Global and National Commerce Act, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☑ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0935

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific lobbying issues

S. 2045, American Competitiveness in the 21st Century Act, all provisions

H.R. 3983, Helping Improve Technology Education and Achievement Act, all provisions

H.R. 4227, Technology Worker Temporary Relief act, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to	☐
	Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0936

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

Information Update Page - **Complete ONLY where registration information has changed.**

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

COM

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal place of business (city and state or country)	Amount of contribution for lobbying activities	Ownership percentage in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client or affiliated organization

Signature Alison H. McSlarrow Date August 10, 2000

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0937

ATTACHMENT 35

TO THE

DECLARATION OF BRIAN DAUTCH

LEGISLATIVE RESOURCE CENTER

2001 FEB 15 PM 3:26

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

FEB 12 2001

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

(4)

1. Registrant Name
McSlarrow Consulting L.L.C.

2. Address ☐ Check if different than previously reported
6551 Kristina Ursula Court, Falls Church, Virginia 22044

3. Principal Place of Business (if different from line 2)
City: State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Alison McSlarrow	703-658-0138		48703-12

7. Client Name ☐ Self
Microsoft Corporation

6. House ID #
34541002

TYPE OF REPORT 8. Year 2000 Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 60,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____

Printed Name and Title _____

MTC-00030631_0939

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Competition in the software industry

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison McSlarrow	Deputy Chief of Staff to	☐
	Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date February 2, 2001

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0940

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific lobbying issues

S. 2045, American Competitiveness in the 21st Century Act, all provisions

H.R. 3983, Helping Improve Technology Education and Achievement Act, all provisions

H.R. 4227, Technology Worker Temporary Relief Act, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to	☐
	Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0941

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific lobbying issues

Interoperability of instant messaging

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow	Deputy Chief of Staff to	☐
	Senate Majority Leader Trent Lott	☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Alison H. McSlarrow Date February 2, 2001

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0942

ATTACHMENT 36

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

AUG 14 2001

LEGISLATIVE RESOURCE CENTER

2001 AUG 15 PM 12:58

OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required To Complete This Page**

5

1. Registrant Name
McSlarrow Consulting L.L.C.

2. Address ☐ Check if different than previously reported
6551 Kristina Ursula Court, Falls Church, Virginia 22044

3. Principal Place of Business (if different from line 2)
City: State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
Alison McSlarrow	703-658-0138		48703-12

7. Client Name ☐ Self	6. House ID #
Microsoft Corporation	34541002

TYPE OF REPORT 8. Year 2001 Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date_____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 60,000
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $_____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8)of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature_____

Printed Name and Title_____

MTC-00030631_0944

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues

Competition in the software industry

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison McSlarrow		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0945

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code**, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific lobbying issues

Software piracy, counterfeiting, and protection of intellectual property rights

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0946

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific lobbying issues

Internet privacy

S. 803, E-government Act of 2001, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

U.S. House of Representatives

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date _____

Printed Name and Title _____

MTC-00030631_0947

Registrant Name McSlarrow Consulting Client Name Microsoft Corporation

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific lobbying issues

S. 512, Internet Tax Moratorium and Equity Act, all provisions
S. 589, A bill to make permanent the moratorium on the imposition of taxes on the Internet, all provisions
S. 664, New Economy Tax Fairness Act, all provisions
S. 41, To amend the Internal Revenue Code of 1986 to permanently extend the research credit, all provisions
H.R. 1836, Economic Growth and Tax Relief Reconciliation Act of 2001, research and development tax credit provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

U.S. Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
Alison H. McSlarrow		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Alison H. McS Date August 12, 2001

Printed Name and Title Alison H. McSlarrow, President

MTC-00030631_0948

ATTACHMENT 37

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
SECRETARY OF THE SENATE
00 AUG 14 PM 3:34

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - All Filers Are Required To Complete This Page

1. Registrant Name
Microsoft Corporation

2. Address ☐ Check if different than previously reported
21 Dupont Circle, NW, 5th Floor, Washington, DC 20036

3. Principal Place of Business (if different from line 2)
City: Redmond State/Zip (or Country) WA 98052

4. Contact Name: Jack Krumholtz Telephone: 202-263-5900 E-mail (optional)

5. Senate ID #: 25204-12

7. Client Name ☒ Self

6. House ID #: 31174000

TYPE OF REPORT 8. Year 2000 Midyear (January 1-June 30) ☒ OR Year End (July 1-December

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ ⇨ Termination Date _____ 11. No Lobbying Activi

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☐ ⇨ $ _____
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000, of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☒ ⇨ $ 3,340,000
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expens accounting method. See instructions for description of options

☐ Method A. Reporting amounts using LDA definitions onl

☐ Method B. Reporting amounts under section 6033(b)(8)c Internal Revenue Code

☒ Method C. Reporting amounts under section 162(e) of th Internal Revenue Code

Signature: Jack Krumholtz

Printed Name and Title: Jack Krumholtz, Director of Federal Government Affairs,

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific lobbying issues
H.R. 3983, Helping to Improve Technology Education and Achievement Act of 2000
H.R. 4227, TEchnology Worker Temporary Relief Act
S. 2045, American Competitiveness in the Twenty-First Century Act of

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Senate
House of Representatives
Department pf Commerce
National Economic Council
Office of the President

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee
Ira Rubinstein	
Julie Inman	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature [signature] Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific lobbying issues

H.R. 354, Collections of Information Antipiracy Act
H.R. 4690, Departments of Commerce, Justice and State, the Judiciary, and Related Agencies Appropriations Act, 2001, relating to copyright and patent issues
House Amendment 889 to H.R. 4690, Amendment to increase funding for US Patent and Trademark offices
Software Piracy, Counterfeiting and Copyright Protection

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
Office of the Vice President
Department of Commerce
Department of State
United States Trade Representative
Department of Justice
National Economic Council

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registe engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific lobbying issues

H.R. 1685, Internet Growth and Development Act of 1999
H.R. 1686, Internet Freedom Act
Interoperability of Instant Messaging
Encouraging development and roll out of broadband technologies

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
Department of Commerce
Federal Communications Commission

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee
Marc Berejka	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

MTC-00030631_0953

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific lobbying issues

H.R. 3709, Internet Nondiscrimination Act
H.R. 4267, Internet Tax Reform and Reduction Act of 2000
H.R. 4460, Internet Tax Simplification Act of 2000
H.R. 4462, Interstate Sales and Use Tax Compact of 2000
S. 2401, New Economy Tax Simplification Act (NETSA)
S. 2775, Internet Tax Moratorium and Equity Act
S. 1611, To Amend the Internet Tax Freedom Act
S. 2323; H.R. 4109; H.R. 4182, Worker Economic Opportunity Act

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
Department of Treasury
Joint Committee on Taxation

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernme Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committe

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature [signature] Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

MTC-00030631_0954

Microsoft Corporation

General Issue Area: TAX

Foreign Sales Corporation Dispute Pending at WTO

Name of each individual who acted as a lobbyist in this issue ar

Marc Berejka
Julie Inman
Bill Sample

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific lobbying issues

H.R. 4444, US-China Relations Act of 2000 (PNTR)
S. 2645, China Nonproliferation Act
S. 2277, A bill to terminate the applications of Title IV of the Trad Act of 1974 with respect to the People's Republic of China
World Trade Organization (a) Agreement on Trade-Related Intellectual Property Rights (TRIPS); (b) Post Seattle WTO Ministerial met and related e-commerce and trade issues
Foreign Sales Corporation Dispute Pending at WTO

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
US Trade Representatives
Department of State
Department of Commerce
National Economic Council

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee
Julie Inman	
BillSSample	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz 8/8/00 Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

7

MTC-00030631_0956

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific lobbying issues
H.R. 4246, Cyber Security Information Act
S. 2448, Internet Integrity and Critical Infrastructure Protection Act of 2000
Competition in the Software Industry
Promoting Protection of Critical Infrastructures

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Senate
House of Representatives
Department of Justice
National Security Agency
Federal Bureau of Investigation
Department of Commerce
Department of Defense

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

MTC-00030631_0957

Microsoft Corporation

General Issue Area: CPI

Name of each individual who acted as a lobbyist in this issue are:

Marc Berejka
Bill Guidera
Ira Rubinstein
Mike Egan
John Kelly
Ed Tobin

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific lobbying issues
H.R. 1714, Electronic Signatures in Global and National Commerce Act
S. 761, Millennium Digital Commerce Act (Digital Signatures)
S. 2063, Secure Online Communication Enforcement Act of 2000
S. 854, Electronic Rights for the 21st Century Act
S. 2448, Internet Integrity and Critical Infrastructures Protection Act of 2000
S. 2606, Consumer Privacy Protection Act
H.R. 4049, Privacy Commission Act
H.R. 1685, Internet Growth and Development Act

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Senate
House of Representatives
White House
Department of Commerce
Federal Communications Commission
Federal Trade Commission
Department of State

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

MTC-00030631_0959

Microsoft Corporation

General Issue Area: CSP

Specific lobbying issues

International Online Consumer Protection, Privacy and Jurisdictional Issues

Name of each individual who acted as a lobbyist in this issue are

Marc Berejka
Bill Guidera

Registrant Name Microsoft Corporation Client Name Self

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registr engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, prov information as requested. Attach additional page(s) as needed.

15. General issue area code LBR (one per page)

16. Specific lobbying issues

H.R. 3462, Wealth through the Workplace Act of 1999
H.R. 1102, Comprehensive Retirement Security and Pension Reform Act

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

Senate
House of Representatives
Department of Labor

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)
Jack Krumholtz	
Eric Koenig	
Kerry Knott	Chief of Staff House Majority Leader Richard Arm
Kent Knutson	
Tom Jurkovich	Deputy Asst. Sec. for Intergovernmer Affairs, US Dept. of Commerce
John Sampson	
James Houton	Associate Director, Senate Democrat Steering and Coordination Committee
Julie Inman	
Bill Sample	

19. Interest of each foreign entity in the specific issues listed on line 16 above ☐ Check if None

Signature Jack Krumholtz Date 8/11/2000

Printed Name and Title Jack Krumholtz, Director of Federal Government Affairs, Associate General Counsel

MTC-00030631_0961

ATTACHMENT 38

TO THE

DECLARATION OF BRIAN DAUTCH

SECRETARY OF THE SENATE
CLERK OF THE HOUSE OF REPRESENTATIVES

31355019

For Official Use

9

98 FEB 17 PM 4:05

U.S. HOUSE OF REPRESENTATIVES
OFFICE OF THE CLERK

LEGISLATIVE RESOURCE CENTER
RECEIVED

LOBBYING REPORT
Lobbying Disclosure Act (Section 5)

1. Year 1997

2. Report Type (*check all that apply*) Midyear (January 1-June 30) ☐ Year End (July 1-December 31) ☒
Amended report ☐ Termination report ☐
No activity (*registration to remain in effect*) ☐

REGISTRANT

3. Name of Registrant PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

4. Telephone number and contact name
(202) 628-1700 Contact Rosanne Phillips

CLIENT *Lobbying firms file separate reports for each client. An organization employing in-house lobbyists indicates "Self."*

5. Name of Client MICROSOFT CORPORATION

INCOME OR EXPENSES *Answer line 6 or line 7 as applicable.*

6. LOBBYING FIRMS. Income from the client during the reporting period, other than income unrelated to lobbying activities, was:

Less than $10,000 ☐ $10,000 or more ☒

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of all income from the client during this reporting period. Include any payments by any other entity for lobbying activities on behalf of the client. Exclude income unrelated to lobbying activities.

Income $ 220,000.00 Total for year *(if Year End report)* $ 380,000.00

7. ORGANIZATIONS EMPLOYING IN-HOUSE LOBBYISTS. Expenses incurred in connection with lobbying activities during the reporting period were:

Less than $10,000 ☐ $10,000 or more ☐

If $10,000 or more, provide a good faith estimate, rounded to the nearest $20,000, of the total amount of all lobbying expenses incurred by the registrant and its employees during this reporting period.

Expenses $ _____ Total for year *(if Year End report)* $ _____

Optional Expense Reporting Methods

A. Registrants that report lobbying expenses under section 6033(b)(8) of the Internal Revenue Code may provide a good faith estimate of the applicable amounts that would be required to be disclosed under section 6033(b)(8) for the semiannual reporting period, and may consider as lobbying activities only those defined under section 4911(d) of the Internal Revenue Code. If selecting this method, check box and (i) enter estimated amounts on the "Expenses" line above; or (ii) attach a copy of the IRS Form 990 that includes this reporting period. ☐

B. Registrants subject to section 162(e) of the Internal Revenue Code may make a good faith estimate of all applicable amounts that would not be deductible under section 162(e) for the semiannual reporting period, and may consider as lobbying activities only those activities the costs of which are not deductible pursuant to section 162(e). If selecting this method, check box and enter estimated amounts on the "Expenses" line above. ☐

MTC-00030631_0963

Registrant Name PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name MICROSOFT CORPORATION

LOBBYING ISSUES. On line 8 below, enter the code for *one* general lobbying issue area in which the registrant engaged in lobbying activities for the client during this reporting period *(select applicable code from list in the instructions and on the reverse side of Form LD-2, page 1).* For that general issue area *only*, complete lines 9 through 12. If the registrant engaged in lobbying activities for the client in more that one general issue area, use one Lobbying Report Addendum page for each additional general issue area.

8. General lobbying issue area code (enter *one*) **CPI**

9. Specific lobbying issues *(include bill numbers and specific executive branch actions)*
Bills:
H.R.695; Security and Freedom Through Encryption (SAFE) Act;
S.377; Promotion of Commerce On-Line in the Digital Era (Pro-CODE) Act of 1997;
S.909; Secure Public Networks Act;
Congressional Issues: Competition in the Software Market.

10. Houses of Congress and Federal agencies contacted
House of Representatives
Senate

11. Name and title of each employee who acted as a lobbyist
HEIMAN, BRUCE - ATTORNEY
BRANDT, WERNER - GOVT. AFFAIRS COUNSELOR
CARLSON, AMY - ATTORNEY
STEPHENS, DENNIS - GOVT. AFFAIRS ANALYST
GARVIE, PAMELA - ATTORNEY
MOSHER, SOL - SR. ADV. FOR FED. AFFAIRS
BERGER, AMY - Attorney

12. *For registrants identifying foreign entities in the Lobbying Registration (Form LD-1, line 12) or any updates:* Interest of each such foreign entity in the specific lobbying issues listed on line 9 above
****NONE** -**

This report includes 009 Addendum pages.

Signature _____ Date 2/17/98

Printed Name and Title TIM PECKINPAUGH - ATTORNEY

MTC-00030631_0964

ATTACHMENT 39

TO THE

DECLARATION OF BRIAN DAUTCH

LEGISLATIVE RESOURCE CENTER
98 AUG 14 PM 3:33
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page** 11

1. Registrant Name
PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

2. Address ☐ Check if different than previously reported
1735 NEW YORK AVENUE, N.W. WASHINGTON
SUITE 500 DC 20006-5209

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
ROSANNE PHILLIPS	**202-628-1700**		

7. Client Name ☐ Self	6. House ID #
MICROSOFT CORPORATION	**31355019**

TYPE OF REPORT

8. Year 1998 Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$360,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **8/14/98**

Printed Name and Title **EMANUEL ROUVELAS - ATTORNEY** Page 1

MTC-00030631_0966

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide nformation as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
H.R.695, Security and Freedom Through Encryption (SAFE) Act, all sections
S.2067, Encryption Protects the Rights of Individuals from Violation and Abuse in Cyberspace (E-PRIVACY) Act, all sections
S.376, Encrypted Communications Privacy Act of 1997, all sections
S.377, Promotion of Commerce On-Line in the Digital Era (Pro-CODE) Act of 1997, all sections
S.909, Secure Public Networks Act, all sections
Senate Judiciary Committee Hearings on Competition in the Software Market.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
OSTP NSC USTR DOJ FBI NEC DOC CIA OMB NSA
Senate
Vice President
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
O'NEIL, MICHAEL	Gen. Counsel, CIA -Chief of Staff-CIA	No
SLOMOWITZ, ALAN	Adm. Asst. -Rep. Robert Borski	Yes
WALKER, FRANKLIN		Yes
MILDER, BENJAMIN	Leg. Corres. - Sen. Hatfield	Yes
HEIMAN, BRUCE		No
BRANDT, WERNER		No
CARLSON, AMY		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0967

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Item	Description	Data
18a	Lobbyist Name	STEPHENS, DENNIS
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	MOSHER, SOL
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	BERGER, AMY
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	ABRAMOFF, JACK
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	MASHBURN, JOHN
18b	Covered Official Position	LEG. DIR. SEN. JOHN ASHCROFT
18c	New Lobbyist	No
18a	Lobbyist Name	PIZZELLA, PATRICK
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	PECKINPAUGH, TIM
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	JARRELL, WILLIAM
18b	Covered Official Position	Deputy Chief of Staff - Rep. Tom DeLay
18c	New Lobbyist	No
18a	Lobbyist Name	ROUVELAS, EMANUEL
18b	Covered Official Position	
18c	New Lobbyist	No

MTC-00030631_0968

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific Lobbying issues
H.R. 2281, WIPO Copyright Treaties Implementation Act, all provisions
S.2037, Digital Millennium Copyright Act of 1998, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
WALKER, FRANKLIN		Yes
MILDER, BENJAMIN	Leg. Corres. - Sen. Hatfield	Yes
HEIMAN, BRUCE		No
MASHBURN, JOHN	LEG. DIR. SEN. JOHN ASHCROFT	No
PIZZELLA, PATRICK		No
CARLSON, AMY		No
ROUVELAS, EMANUEL		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0969

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Item	Description	Data
18a	Lobbyist Name	BRANDT, WERNER
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	STEPHENS, DENNIS
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	JARRELL, WILLIAM
18b	Covered Official Position	Deputy Chief of Staff - Rep. Tom DeLay
18c	New Lobbyist	No

MTC-00030631_0970

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific Lobbying issues
H.R.3736, Workforce Improvement and Protection Act of 1998, all provisions relating to the H1-B visa program.
S.1723, American Competitiveness Act, all provisions relating to the H1-B visa program.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
HEIMAN, BRUCE		No
CARLSON, AMY		No
BRANDT, WERNER		No
ROUVELAS, EMANUEL		No
O'NEIL, MICHAEL	Gen. Counsel, CIA -Chief of Staff-CIA	Yes
STEPHENS, DENNIS		No
JARRELL, WILLIAM	Deputy Chief of Staff - Rep. Tom DeLay	No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0971

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Item	Description	Data
18a	Lobbyist Name	MASHBURN, JOHN
18b	Covered Official Position	LEG. DIR. SEN. JOHN ASHCROFT
18c	New Lobbyist	No
18a	Lobbyist Name	SLOMOWITZ, ALAN
18b	Covered Official Position	Adm. Asst. -Rep. Robert Borski
18c	New Lobbyist	Yes
18a	Lobbyist Name	PECKINPAUGH, TIM
18b	Covered Official Position	
18c	New Lobbyist	Yes
18a	Lobbyist Name	PIZZELLA, PATRICK
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	WALKER, FRANKLIN
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	MILDER, BENJAMIN
18b	Covered Official Position	Leg. Corres. - Sen. Hatfield
18c	New Lobbyist	Yes

MTC-00030631_0972

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific Lobbying issues
H.R.1054, Internet Tax Freedom Act, all provisions
H.R.4105, Internet Tax Freedom Act , all provisions
S.442, Internet Tax Freedom Act, all provisions

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
MASHBURN, JOHN	LEG. DIR. SEN. JOHN ASHCROFT	No
PIZZELLA, PATRICK		No
WALKER, FRANKLIN		Yes
BRANDT, WERNER		No
CARLSON, AMY		No
STEPHENS, DENNIS		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0973

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)
16. Specific Lobbying issues

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
CARLSON, AMY		No
HEIMAN, BRUCE		No
STEPHENS, DENNIS		No
JARRELL, WILLIAM	Deputy Chief of Staff - Rep. Tom DeLay	No
MASHBURN, JOHN	LEG. DIR. SEN. JOHN ASHCROFT	No
SLOMOWITZ, ALAN	Adm. Asst. -Rep. Robert Borski	Yes

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0974

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Item	Description	Data
18a	Lobbyist Name	PIZZELLA, PATRICK
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	PECKINPAUGH, TIM
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	ROUVELAS, EMANUEL
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	BERGER, AMY
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	WALKER, FRANKLIN
18b	Covered Official Position	
18c	New Lobbyist	No
18a	Lobbyist Name	MILDER, BENJAMIN
18b	Covered Official Position	Leg. Corres. - Sen. Hatfield
18c	New Lobbyist	Yes
16	Lobbying Issues	Carriage of the Transmission of Digital Television Broadcast Stations, FCC Dkt, 98-120 Access to Telecommunications Services and Equipment for Persons with Disabilities, FCC Dkt 96-198

MTC-00030631_0975

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client
MEEDS, LLOYD

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

SCI

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, or controls, or is affiliated with the registrant, client, or affiliated organization

Signature E. Rouvelas Date 8/14/98

Printed Name and Title EMANUEL ROUVELAS - ATTORNEY

MTC-00030631_0976

ATTACHMENT 40

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
LEGISLATIVE RESOURCE CENTER
00 FEB 14 PM 3:23
OFFICE OF THE CLERK
U.S. HOUSE OF REPRESENTATIVES

9

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

2. Registrant Address ☐ Check if different than previously reported
Address **1735 NEW YORK AVENUE, N.W.** **SUITE 500**
City **WASHINGTON** State/Zip (or Country) **DC 20006-5209**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
ROSANNE PHILLIPS	**202-628-1700**		**32098-366**

7. Client Name ☐ Self	6. House ID #
MICROSOFT CORPORATION	**31355019**

TYPE OF REPORT

8. Year **1999** Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$200,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **02/14/2000**

Printed Name and Title **JONATHAN BLANK - PARTNER**

MTC-00030631_0978

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

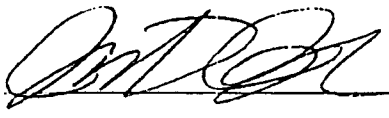
16. Specific Lobbying issues
H.R.3194, Consolidated Omnibus Appropriations Act, relatig to patend and copyright issues.
H.R.775, Year 2000 Readiness & Responsibility Act,
H.R.850, Security And Freedom through Encryption (SAFE) Act,
S.314, Small Business Year 2000 Readiness Act,
S.6998, Y2K Act,
S.798, Promote Reliable On-Line Transactions to Encourage Commerce and Trade (PROTECT) Act of 1999,
competition in software industry

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate
White House

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BERGER, AMY		Yes
BRANDT, WERNER		No
FUNDERBURK, DAVID	CONGRESSMAN	Yes
PIZZELLA, PATRICK		No
ROUVELAS, EMANUEL		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes
WALKER, FRANKLIN		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature  Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0979

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using a separate page for each code, provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

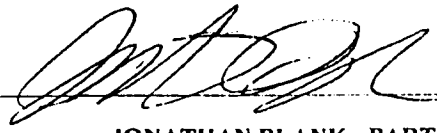
16. Specific Lobbying issues
H.R.1761, Copyright Damages Improvement Act of 1999,
H.R.1858, Consumer and Inventors Access to Information Act of 1999,
H.R.1907, American Inventors Protection Act of 1999, (engrossed).
H.R.2654, American Inventors Protection Act of 1999,
H.R.354, Collection of Information Antipiracy Act,
S.1257, Digital Theft Deterrence and Copyright Damages Improvement Act of 1999 ,
Software piracy and counterfiting.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
HEIMAN, BRUCE		No
PIZZELLA, PATRICK		No
ROUVELAS, EMANUEL		No
WALKER, FRANKLIN		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature  Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0980

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific Lobbying issues
H.R.1714, Electronic Signatures in Global and National Commerce Act,
S.761, Third Millennium Digital Commerce Act,
S.809, Online Privacy Protection Act of 1999,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
WALKER, FRANKLIN		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0981

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific Lobbying issues
H.R.2687, Bringing Resources of Academia to Industry Act,
H.R.2968, S.1440, New Workers for Economic Growth Act,
S.1645, Helping Improved Technology Education (HITECH),
S.180, 21st Century Technology Resources and Commercial Leadership Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
HEIMAN, BRUCE		**No**
PIZZELLA, PATRICK		**No**
ROUVELAS, EMANUEL		**No**
WALKER, FRANKLIN		**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0982

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX. (one per page)

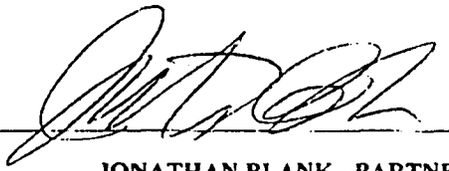
16. Specific Lobbying issues
H.R.2488, S.1429, Taxpayer Refund Act of 1999,
H.R.3194, Consolidated Omnibus Appropriations Act,
H.R.835, To amend the Internal Revenue Code of 1986 to permanently extend the research credit and to adjust the alternative incremental credit rates,
S.542, New Millennium Classrooms Act,
S.680, To amend the Internal Revenue Code of 1986 to permanently extend the research credit, and for other purposes,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
HEIMAN, BRUCE		Yes
PIZZELLA, PATRICK		No
WALKER, FRANKLIN		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature  Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0983

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using **a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC . (one per page)

16. Specific Lobbying issues
H.R.1554, Satellite Copyright Competition Protection Act of 1999,
H.R.1685, Internet Growth and Development Act of 1999,
H.R.1686, Internet Freedom Act,
H.R.2420, Internet Freedom and Broadband Development Act of 1999,
S.877, Broadband Internet Regulatory Relief Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
HEIMAN, BRUCE		No
PIZZELLA, PATRICK		No
ROUVELAS, EMANUEL		No
WALKER, FRANKLIN		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0984

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TRD** _____ (one per page)

16. Specific Lobbying issues
Normal Trade Relations with China WTO provisions of The Agreement on Trade-Related IPR (TRIPs) Seattle WTO Ministerial Meeting (1999) and related issues.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
HEIMAN, BRUCE		**Yes**
PIZZELLA, PATRICK		**Yes**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **02/14/2000**

Printed Name and Title **JONATHAN BLANK - PARTNER**

MTC-00030631_0985

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client

JARRELL, WILLIAM
STEPHENS, DENNIS
O'NEIL, MICHAEL
WALKER, FRANKLIN

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

BUD, SCI

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, or controls, or is affiliated with the registrant, client, or affiliated organization

Signature

Date 02/14/2000

Printed Name and Title JONATHAN BLANK - PARTNER

MTC-00030631_0986

ATTACHMENT 41

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

RECEIVED
LEGISLATIVE RESOURCE
00 AUG 14 PM 1:
OFFICE OF THE CLERK
HOUSE OF REPRESENTATIVES

HAND DELIVERED

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

2. Address ☐ Check if different than previously reported
1735 NEW YORK AVE, NW **WASHINGTON**
SUITE 500 **DC 20006**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
ROSANNE PHILLIPS	202-628-1700		32098-366

7. Client Name ☐ Self	6. House ID #
MICROSOFT CORPORATION	31355019

TYPE OF REPORT

8. Year 2000 Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$220,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **08/14/2000**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_0988

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
S.2448, Internet Integrity and Critical Infrastructure Protection Act of 2000,
H.R.4246, Cyber Security Information Act,
Competition in the software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
ROUVELAS, EMANUEL		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	No
BERGER, AMY		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0989

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific Lobbying issues

H.R.354, Collection of Information Antiprivacy Act,
H.R.4690, Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001, relating to copyright and patent issues.House Amendment 889 to H.R. 4690, to increase funding for the U.S. Patent and Trademark Offices.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
PIZZELLA, PATRICK		No
BRANDT, WERNER		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes
HEIMAN, BRUCE		No
ROUVELAS, EMANUEL		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0990

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific Lobbying issues
S.854, Electronic Rights for the 21st Century Act,
S.2448, Internet Integrity and Critical Infrastructures Protection Act of 2000,
S.2063, Secure Online Communication Enforcement Act of 2000,
S.761, Third Millennium Digital Commerce Act,
H.R.1714, Electronic Signatures in Global and National Commerce Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0991

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM _____ (one per page)

16. Specific Lobbying issues
S.2045, American Competitiveness in the Twenty-first Century Act of 2000,
H.R.4227, Technology Worker Temporary Relief Act,
H.R.3983, Helping to Improve Technology Education and Achievement Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
SLOMOWITZ, ALAN		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes
HEIMAN, BRUCE		No
ROUVELAS, EMANUEL		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0992

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code LBR (one per page)

16. Specific Lobbying issues
H.R.3462, Wealth Through the Workplace Act of 1999,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		Yes
PIZZELLA, PATRICK		Yes
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0993

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific Lobbying issues
S.2775, Internet Tax Moratorium and Equity Act,
S.2401, New Economy Tax Simplification Act (NETSA),
H.R.4462, Fair and Equitable Interstate Tax Compact Simplification Act of 2000,
H.R.4460, Internet Tax Simplification Act of 2000,
H.R.4267, Internet Tax Reform and Reduction Act of 2000,
H.R.3709, Internet Nondiscrimination Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
PIZZELLA, PATRICK		No
BRANDT, WERNER		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes
HEIMAN, BRUCE		No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0994

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific Lobbying issues
H.R.1686, Internet Freedom Act,
H.R.1685, Internet Growth and Development Act of 1999,
FCC Dkt. No. 99-168, Service Rules for the 746-765 and 776-794 MH Bands and Revisions to Part 27 of the Commission's Rules.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0995

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TRD** (one per page)

16. Specific Lobbying issues
S.2277, To terminate the application of title IV of the Trade Act of 1974 with respect to the People's Republic of China,
S.2645, China Nonproliferation Act,
H.R.4444, To authorize extension of nondiscriminatory treatment (normal trade relations treatment) to the People's Republic of China,
World Trade Organization (a) Agreement on Trade-Related Intellectual Property Rights (b) Post-Seattle WTO Ministerial Meeting related commerce and trade issues.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		No
PIZZELLA, PATRICK		No
SLOMOWITZ, ALAN		Yes
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	Yes

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Steven R. Valentine

Signature _____ Date 08/14/2000

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0996

ATTACHMENT 42

TO THE

DECLARATION OF BRIAN DAUTCH

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER
2001 FEB 14 PM 2:12
U.S. HOUSE OF REPRESENTATIVES

10

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

1. Registrant Name
PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

2. Registrant Address ☐ Check if different than previously reported
Address **1735 NEW YORK AVE, NW** **SUITE 500**
City **WASHINGTON** State/Zip (or Country) **DC 20006**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
ROSANNE PHILLIPS	**202-628-1700**		**32098-366**

7. Client Name ☐ Self	6. ~~House ID #~~
MICROSOFT CORPORATION	**31355019**

TYPE OF REPORT

8. Year **2000** Midyear (January 1-June 30) ☐ **OR** Year End (July 1-December 31) ☒

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 **OR** Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$260,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **02/14/2001**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_0998

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. Using **a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
H.R.4246, Cyber Security Information Act,
H.R.5024, Federal Information Policy Act of 2000,
H.R.5658, Treasury and General Government Appropriations Act, 2001,
S.2448, Internet Integrity and Critical Infrastructure Protection Act of 2000,
Competition in the software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BERGER, AMY		**No**
BRANDT, WERNER		**No**
IVEY, GLENN		**Yes**
PIZZELLA, PATRICK		**No**
ROUVELAS, EMANUEL		**No**
STEPHENS, DENNIS		**Yes**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_0999

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific Lobbying issues
H.R.354, Collection of Information Antiprivacy Act,
H.R.4690, Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2001, relating to copyright and patent issues.House Amendment 889 to H.R. 4690, to increase funding for the U.S. Patent and Trademark Offices.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
HEIMAN, BRUCE		**No**
PIZZELLA, PATRICK		**No**
ROUVELAS, EMANUEL		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1000

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CSP (one per page)

16. Specific Lobbying issues
H.R.1685, Internet Growth and Development Act of 1999,
H.R.4049, Privacy Commission Act,
S.2063, Secure Online Communication Enforcement Act of 2000,
S.2448, Internet Integrity and Critical Infrastructures Protection Act of 2000,
S.2606, Consumer Privacy Protection Act,
S.2928, Consumer Internet Privacy Enhancement Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
PIZZELLA, PATRICK		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1001

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code IMM (one per page)

16. Specific Lobbying issues
H.R.3983, Helping to Improve Technology Education and Achievement Act of 2000,
H.R.4227, Technology Worker Temporary Relief Act,
S.2045, American Competitiveness in the Twenty-first Century Act of 2000,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
HEIMAN, BRUCE		**No**
PIZZELLA, PATRICK		**No**
ROUVELAS, EMANUEL		**No**
SLOMOWITZ, ALAN		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**Yes**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1002

Registrant Name: **PRESTON GATES ELLIS & ROUVELAS MEEDS LLP**

Client Name: **MICROSOFT CORPORATION**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **LBR** (one per page)

16. Specific Lobbying issues
H.R.1102, Comprehensive Retirement Security and Pension Reform Act,
H.R.3462, Wealth Through the Workplace Act of 1999,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
PIZZELLA, PATRICK		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **02/14/2001**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_1003

Registrant Name: **PRESTON GATES ELLIS & ROUVELAS MEEDS LLP**

Client Name: **MICROSOFT CORPORATION**

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TAX** (one per page)

16. Specific Lobbying issues
H.R.3709, Internet Nondiscrimination Act of 2000,
H.R.4267, Internet Tax Reform and Reduction Act of 2000,
H.R.4460, Internet Tax Simplification Act of 2000,
H.R.4462, Fair and Equitable Interstate Tax Compact Simplification Act of 2000,
S.2401, New Economy Tax Simplification Act (NETSA),
S.2775, Internet Tax Moratorium and Equity Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
HEIMAN, BRUCE		**No**
PIZZELLA, PATRICK		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **02/14/2001**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_1004

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific Lobbying issues
H.R.1685, Internet Growth and Development Act of 1999,
H.R.1686, Internet Freedom Act,
FCC Dkt. No. 99-168, Service Rules for the 746-765 and 776-794 MH Bands and Revisions to Part 27 of the Commission's Rules.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
PIZZELLA, PATRICK		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1005

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **TRD** (one per page)

16. Specific Lobbying issues

H.R.4444, To authorize extension of nondiscriminatory treatment (normal trade relations treatment) to the People's Republic of China,
S.2277, To terminate the application of title IV of the Trade Act of 1974 with respect to the People's Republic of China,
S.2645, China Nonproliferation Act,
World Trade Organization (a) Agreement on Trade-Related Intellectual Property Rights (b) Post-Seattle WTO Ministerial Meeting related commerce and trade issues.
Foreign sales corporation dispute pending at WTO.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None

House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
BRANDT, WERNER		**No**
PIZZELLA, PATRICK		**No**
SLOMOWITZ, ALAN		**No**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature Steven Valentine Date **02/14/2001**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_1006

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is **no longer** expected to act as a lobbyist for the client

PIZZELLA, PATRICK
ABRAMOFF, JACK
SLOMOWITZ, ALAN
BERGER, AMY

ISSUE UPDATE

24. General lobbying issues previously reported that **no longer** pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is **no longer** affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that **no longer** owns, or controls, or is affiliated with the registrant, client, or affiliated organization

Signature Steven Valentine Date 02/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1007

ATTACHMENT 43

TO THE

DECLARATION OF BRIAN DAUTCH

HAND DELIVERED

LEGISLATIVE RESOURCE CENTER

2001 AUG 14 PM 3:34

Clerk of the House of Representatives	Secretary of the Senate
Legislative Resource Center	Office of Public Records
B-106 Cannon Building	232 Hart Building
Washington, DC 20515	Washington, DC 20510

LOBBYING REPORT

Lobbying Disclosure Act of 1995 (Section 5) - **All Filers Are Required to Complete This Page**

10

1. Registrant Name
PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

2. Registrant Address ☐ Check if different than previously reported
Address **1735 NEW YORK AVE, NW** **SUITE 500**
City **WASHINGTON** State/Zip (or Country) **DC 20006**

3. Principal Place of Business (if different from line 2)
City State/Zip (or Country)

4. Contact Name	Telephone	E-mail (optional)	5. Senate ID #
TERRI PAULK	**202 628 1700**		**32098-366**

7. Client Name ☐ Self	6. House ID #
MICROSOFT CORPORATION	**31355019**

TYPE OF REPORT

8. Year **2001** Midyear (January 1-June 30) ☒ **OR** Year End (July 1-December 31) ☐

9. Check if this filing amends a previously filed version of this report ☐

10. Check if this is a Termination Report ☐ >> Termination Date _____ 11. No Lobbying Activity ☐

INCOME OR EXPENSES - Complete Either Line 12 OR Line 13

12. Lobbying Firms

INCOME relating to lobbying activities for this reporting period was:

Less than $10,000 ☐

$10,000 or more ☒ >> $ **$120,000.00**
Income (nearest $20,000)

Provide a good faith estimate, rounded to the nearest $20,000 of all lobbying related income from the client (including all payments to the registrant by any other entity for lobbying activities on behalf of the client).

13. Organizations

EXPENSES relating to lobbying activities for this reporting period were:

Less than $10,000 ☐

$10,000 or more ☐ >> $ _____
Expenses (nearest $20,000)

14. REPORTING METHOD. Check box to indicate expense accounting method. See instructions for description of options.

☐ **Method A.** Reporting amounts using LDA definitions only

☐ **Method B.** Reporting amounts under section 6033(b)(8) of the Internal Revenue Code

☐ **Method C.** Reporting amounts under section 162(e) of the Internal Revenue Code

Signature _____ Date **08/14/2001**

ıted Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_1009

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPI (one per page)

16. Specific Lobbying issues
H.R.2590, Treasury and General Government Appropriations Act, 2002, relating to funding for US Customs anti-counterfeiting activities.
Competition in the software industry.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Department of Justice
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		Yes
STEPHENS, DENNIS		No
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1010

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code CPT (one per page)

16. Specific Lobbying issues
H.R. 2500 and S. 1215, The State, Justice, Commerce Departments and related agencies appropriations bill, relating to funding of enforcement of anti-privacy and intellectual property laws and relating to funding of the Intellectual Property Rights Center.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		**Yes**
STEPHENS, DENNIS		**Yes**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1011

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code **CSP** (one per page)

16. Specific Lobbying issues
H.R.2458 and S.803, E-Government Act of 2001, relating to Internet privacy.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
Department of Justice
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		**Yes**
STEPHENS, DENNIS		**Yes**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date **08/14/2001**

Printed Name and Title **STEVEN VALENTINE - OF COUNSEL**

MTC-00030631_1012

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TAX (one per page)

16. Specific Lobbying issues
H.R. 2526, Internet Tax Fairness Act of 2001,
H.R.1410 and S.512, Internet Tax Moratorium and Equity Act,
H.R.1552 and S.288, Internet Tax Nondiscrimination Act,
H.R.2421, Jurisdictional Certainty Over Digital Commerce Act,
S.245, A bill to make permanent the moratorium on the Federal imposition of taxes on the Internet.,
S.246, A bill to extend the moratorium on the imposition of taxes on the Internet for an additional 5 years.,
S.41, A bill to amend the Internal Revenue Code of 1986 to permanently extend the research credit and to increase the rates of the alternative incremental credit,
S.589, A bill to make permanent the moratorium on the imposition of taxes on the Internet.,
S.664, NET FAIR Act,

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		Yes
STEPHENS, DENNIS		Yes
VALENTINE, STEVEN	Leg. Dir & Gen. Counsel Sen. Bob Smith	No

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2001

rinted Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1013

Registrant Name: **PRESTON GATES ELLIS & ROUVELAS MEEDS LLP**

Client Name: **MICROSOFT CORPORATION**

Item	Description	Data
6	**Lobbying Issues**	**S.777, Internet Tax Nondiscrimination Act,**

MTC-00030631_1014

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TEC (one per page)

16. Specific Lobbying issues
FCC Dkt. No. 99-168, Service Rules for the 746-765 and 776-794 MH Bands and Revisions to Part 27 of the Commission's Rules.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		**Yes**
STEPHENS, DENNIS		**Yes**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1015

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

LOBBYING ACTIVITY. Select as many codes as necessary to reflect the general issue areas in which the registrant engaged in lobbying on behalf of the client during the reporting period. **Using a separate page for each code,** provide information as requested. Attach additional page(s) as needed.

15. General issue area code TRD (one per page)

16. Specific Lobbying issues
H.R.2149 and S.599, Trade Promotion Authority Act of 2001, Permanent Normal Trade Relations (PNTR) of China.

17. House(s) of Congress and Federal agencies contacted ☐ Check if None
House of Representatives
Senate

18. Name of each individual who acted as a lobbyist in this issue area

Name	Covered Official Position (if applicable)	New
IVEY, GLENN		**Yes**
STEPHENS, DENNIS		**Yes**
VALENTINE, STEVEN	**Leg. Dir & Gen. Counsel Sen. Bob Smith**	**No**

19. Interest of each foreign entity in the specific issues listed on line 16 above ☒ Check if None

Signature _____ Date 08/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1016

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Information Update Page - Complete ONLY where registration information has changed.

20. Client new address

21. Client new principal place of business (if different from line 20)

City State/Zip (or Country)

22. New general description of client's business or activities

LOBBYIST UPDATE

23. Name of each previously reported individual who is no longer expected to act as a lobbyist for the client

PIZZELLA, PATRICK
ABRAMOFF, JACK
BRANDT, WERNER
SLOMOWITZ, ALAN

ISSUE UPDATE

24. General lobbying issues previously reported that no longer pertain

AFFILIATED ORGANIZATIONS

25. Add the following affiliated organization(s)

Name	Address	Principal Place of Business (city and state or country)

26. Name of each previously reported organization that is no longer affiliated with the registrant or client

FOREIGN ENTITIES

27. Add the following foreign entities

Name	Address	Principal Place of Business (city and state or country)	Amount of contribution for lobbying activities	Ownership % in client

28. Name of each previously reported foreign entity that no longer owns, or controls, or is affiliated with the registrant, client, or affiliated organization

Signature Steven Valentine Date 08/14/2001

Printed Name and Title STEVEN VALENTINE - OF COUNSEL

MTC-00030631_1017

Registrant Name: PRESTON GATES ELLIS & ROUVELAS MEEDS LLP

Client Name: MICROSOFT CORPORATION

Item	Description	Data
23	**Lobbyist Update**	**BERGER, AMY**

MTC-00030631_1018

ATTACHMENT 44

TO THE

DECLARATION OF BRIAN DAUTCH

PRESS RELEASE

Congressman John Conyers, Jr.

Fourteenth District, Michigan
Ranking Member, Committee on the Judiciary
Dean, Congressional Black Caucus

FOR IMMEDIATE RELEASE:
November 6, 2001

CONTACT:
Dena Graziano: (202) 226-6888

CONYERS OBJECTS TO REPORTS OF INFLUENCE AND IMPROPRIETY IN THE PROPOSED MICROSOFT SETTLEMENT, SEEKS INFORMATION FROM ASHCROFT

Today, Congressman John Conyers, Jr., Ranking Member of the House Judiciary Committee sent a letter to Attorney General, John Ashcroft complaining of reports of political influence and impropriety by Justice Department employees in the proposed settlement of the *U.S. v. Microsoft* case. A copy of the letter follows.

November 6, 2001

The Honorable John Ashcroft
Attorney General of the United States
U.S. Department of Justice
10th Street and Constitution Avenue, NW
Washington, D.C. 20530

Dear Mr. Attorney General:

I am writing to express my very serious concerns regarding reports of political influence and impropriety by Justice Department employees in the proposed settlement of the *U.S. v. Microsoft* case. I am also deeply troubled by your office's continuing failure to respond to my earlier requests for information set forth in my September 6, 2001 letter to you.

As I am sure you are aware, a number of reservations have been raised with the proposed settlement by consumer groups, trade associations, state attorneys general, and antitrust experts. I too am very concerned the proposed agreement represents a weakening in our government's resolve to protect competition, preserve consumer welfare, and foster continued innovation, particularly given the resounding and clear cut legal judgments achieved by your predecessor in office. Wherever one comes out on the merits or demerits of the proposed settlement, I do not believe the Department is at all served by continuing to stonewall inquiries into legitimate and credible allegations of political impropriety raised by the press and the public. I would therefore encourage your office to respond to my earlier letter and the additional questions raised in this correspondence by no later than November 23, 2001.

At the outset, let me note that my earlier expressed concerns about inappropriate political influence have only been heightened by recent media reports that your own Deputy Chief of Staff, David Israelite, communicated with outside lobbyists in an effort to convince them to alter their clients' views regarding the role of the states in the case. This inappropriate and possibly illegal contact is reported to have occurred after Mr. Israelite had recused himself from the case because of conflict of interest concerns. As a result, I would like to receive an itemization of any and all contacts between Mr. Israelite and any representatives of any outside party (including representatives of AOL/Time Warner) having any interest in the Microsoft case, as well as a detailing of any briefings or other "communications" (meant to include all notes, e-mails, documents, memoranda, phone records and any other types

of written, audio, or electronic communications) involving the Microsoft case which are in any way associated with, written to or sent from Mr. Israelite. If the allegations reported by the media are true, such active involvement by a recused public official could violate federal conflict of interest laws governing Executive Branch employees.[1] Among other things, Mr. Israelite would be disqualified from taking any significant action if the matter will have a "direct and predictable" effect on his interest.

In a similar regard, I am troubled by the possibility that additional staff who have been recused from the Microsoft case have been and will continue to be called on to offer services and judgments which implicate the case. For example, it has been reported that Mr. William J. Kolasky, who has previously written *amicus curiae* legal briefs supporting Microsoft's legal position and opposing the Department has been appointed to be Deputy Assistant Attorney General for International Affairs. Given that one of his principal responsibilities will be dealing with the European Union, which is itself in the midst of a significant antitrust proceeding involving Microsoft, it would seem difficult, if not impossible for him to discharge his duties without in some way taking an action impacting Microsoft. Of course we can only consider and scrutinize these conflicts if we learn of the persons in the Department who have recused themselves. This is why I am so troubled that your office has refused to turn over a list of political appointees at the Department who have recused themselves from the Microsoft case.

Third, the press has also reported that many career attorneys and staff at the Department were either cut out of the final negotiations or raised objections to it that were overruled. As a result, I would also like to receive copies of any and all "communications" (as defined above), by any Department employees or consultants regarding a possible settlement or proposing any suggestions or differing terms than those you agreed to. I am also concerned that political appointees within the Department may have threatened career employees for failing to "toe the company line" in this matter and support the settlement. As a result, I would also like to receive copies of all "communications" between any political appointees and career staff regarding the Microsoft case which could in any way be seen as threatening or intimidating. Given the thousands upon thousands of hours devoted by career staff at the Department, I believe it is counterproductive to totally subordinate their considerable efforts and input at this critical stage in the proceeding. Surely, public disclosure of these matters will contribute to the public's knowledge and understanding of this matter.

Thank you for your time and attention to this matter.

Sincerely,

John Conyers, Jr.
Ranking Member

cc: Hon. F. James Sensenbrenner, Jr.
Mr. Daniel Bryant

#107-97#

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[1] *See* 18 U.S.C. § 208(a); 5 C.F.R § 2635.401-403. *See also*, Ethical Rules for U.S. Attorneys, Sections 3-2.170-171, 3-2.220.

ATTACHMENT 45

TO THE

DECLARATION OF BRIAN DAUTCH

STATEMENT OF INFORMATION

HEARINGS

BEFORE THE

COMMITTEE ON THE JUDICIARY

HOUSE OF REPRESENTATIVES

NINETY-THIRD CONGRESS

SECOND SESSION

PURSUANT TO

H. Res. 803

A RESOLUTION AUTHORIZING AND DIRECTING THE COMMITTEE ON THE JUDICIARY TO INVESTIGATE WHETHER SUFFICIENT GROUNDS EXIST FOR THE HOUSE OF REPRESENTATIVES TO EXERCISE ITS CONSTITUTIONAL POWER TO IMPEACH RICHARD M. NIXON PRESIDENT OF THE UNITED STATES OF AMERICA

BOOK V—PART 1

DEPARTMENT OF JUSTICE/ITT LITIGATION—RICHARD KLEINDIENST NOMINATION HEARINGS

MAY–JUNE 1974

MTC-00030631_1023

FOREWORD

By Hon. Peter W. Rodino, Jr., Chairman,
Committee on the Judiciary

On February 6, 1974, the House of Representatives adopted by a vote of 410-4 the following House Resolution 803:

> RESOLVED, That the Committee on the Judiciary acting as a whole or by any subcommittee thereof appointed by the Chairman for the purposes hereof and in accordance with the Rules of the Committee, is authorized and directed to investigate fully and completely whether sufficient grounds exist for the House of Representatives to exercise its constitutional power to impeach Richard M. Nixon, President of the United States of America. The committee shall report to the House of Representatives such resolutions, articles of impeachment, or other recommendations as it deems proper.

Beginning in November 1973, acting under resolutions referred to the Committee by the Speaker of the House and with a special appropriation, I had begun to organize a special staff to investigate serious charges against the President of the United States.

On May 9, 1974, as Chairman of the Committee on the Judiciary, I convened the Committee for hearings to review the results of the Impeachment Inquiry staff's investigation. The staff began its initial presentation the same day, in executive session, pursuant to the Committee's Impeachment Inquiry Procedures adopted on May 2, 1974.

By June 21, the Inquiry staff had concluded its initial presentation.

On June 25, the Committee voted to make public the initial presentation including substantially all of the supporting material

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presented at the hearings. The Committee also voted to make public the President's response, which was presented to the Committee on June 27 and June 28 in the same form and manner as the Inquiry staff's initial presentation.

Statements of information and supporting evidentiary material were compiled by the Inquiry staff in 36 notebooks and furnished in this form to each Member of the Committee. The notebooks presented material on several subjects of the Inquiry: the Watergate break-in and its aftermath, ITT, dairy price supports, domestic surveillance, abuse of the IRS, and the activities of the Special Prosecutors. In each notebook a statement of information relating to a particular phase of the investigation was immediately followed by supporting evidentiary material, which included copies of documents and testimony (much already on public record), transcripts of Presidential conversations and affidavits.

The staff also presented to the Committee written reports on President Nixon's income taxes, Presidential impoundment of funds appropriated by Congress, and the bombing of Cambodia.

Book V, presented to the Committee under the general heading of "ITT," dealt with two areas of the Inquiry. First, material was presented with respect to the possible relation between the 1971 settlement of three antitrust cases filed against ITT and ITT's pledge of financial assistance to the San Diego Convention and Tourist Bureau for expenses related to the 1972 Republic National Convention. Second, material was presented with respect to the testimony of

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Richard Kleindienst and John Mitchell during Kleindienst's confirmation hearings before the Senate Judiciary Committee.

Every effort was made to preclude inferences in the presentation of this material. A deliberate and scrupulous abstention from conclusions, even by implication, was observed.

With respect to the Presidential recorded conversations, the Committee determined to hear the recorded conversations in their entirety. The Presidential recorded conversations were neither paraphrased nor summarized by the Inquiry staff. Thus, no inferences, or conclusions were drawn for the Committee. During the course of the hearings, Members of the Committee heard each recording and simultaneously followed transcripts prepared by the Inquiry staff. Each of these transcripts is reprinted under the appropriate Statement of Information.

During the course of the hearings, the Committee found it necessary to issue a subpoena to President Richard Nixon requiring tape recordings of 19 Presidential conversations related to the ITT matters before the Committee. The Committee also subpoenaed the President's copies of daily news summaries which were compiled by White House staff members from February 22, 1972 through June 9, 1972. The Presdient has not yet responded to this subpoena.

Prior to the Committee's issuance of the subpoena on June 24, 1974, the President furnished to the Committee an edited transcript of a meeting he held with H. R. Haldeman and John Mitchell on April 4, 1972 at which the Kleindienst nomination hearings were discussed.

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In a few instances, Ranking Minority Member Mr. Hutchinson and I determined, pursuant to authority granted us by the Committee, to defer the release of evidentiary material or to delete it for one of the following reasons:

1) Because the public interest in making the material public was outweighed by the potential prejudice to the rights of defendants under indictment and awaiting trial.

2) Because the information was classified or otherwise required confidential treatment,

3) Because the material was only marginally pertinent and was considered to be defamatory, degrading or embarrassing, or,

4) Because the material was not pertinent to Presidential responsibility within the outer limits of an impeachable offense within the meaning of the Constitution.

The Committee on the Judiciary is working to follow faithfully its mandate "to investigate fully and completely" whether or not sufficient grounds exist to recommend that the House exercise its constitutional power of impeachment.

I believe that the readers of these volumes will see that the Committee's primary effort in carrying out its mandate has been to obtain an objective, impartial presentation which will enable each Member of the Committee to make an informed judgment in fulfilling his or her constitutional responsibility.

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I also believe that the publication of the record of these hearings will provide readers with a clear idea of the particulars of the investigation and that the proximity of the evidence will assure them that no statement of information is offered without supporting evidentiary material.

Peter W Rodino

July 1974

MTC-00030631_1028

1. By memorandum dated April 23, 1969 from Deputy Attorney General Richard Kleindienst, acting as Attorney General*, and Assistant Attorney General Richard McLaren, head of the Antitrust Division, to John Ehrlichman, Counsel to the President, Kleindienst and McLaren urged approval of the commencement of an antitrust action against the International Telephone and Telegraph Corporation (ITT) challenging its acquisition of Canteen Corporation. Commencement of the suit was approved and on April 28, 1969 the suit was begun in the United States District Court for the Northern District of Illinois.

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*Because Attorney General John Mitchell's former law firm had represented an ITT subsidiary, Mitchell recused himself and Deputy Attorney General Kleindienst acted as Attorney General in connection with the litigation.

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1.1	Memorandum from Richard Kleindienst and Richard McLaren to John Ehrlichman, April 23, 1969 with attached draft complaint (received from White House).....	70
1.2	Memorandum from Richard McLaren to Richard Kleindienst, April 25, 1969, 3 Kleindienst Confirmation Hearings (KCH) 1237.....	88
1.3	United States v. International Telephone and Telegraph Corporation, Civ. No. 69c-924, Docket, 1-2....	89
1.4	Richard Kleindienst testimony, 2 KCH 96.....	91
1.5	John Mitchell testimony, 2 KCH 539-40.....	92
1.6	Memorandum from Richard McLaren for the Attorney General, April 7, 1969 (received from Department of Justice).....	94

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2. On August 1, 1969 two antitrust suits similar to the Canteen suit were commenced in the United States District Court for the District of Connecticut challenging ITT's acquisition of the Hartford Fire Insurance Company and Grinnell Corporation.

		Page
2.1	United States v. International Telephone and Telegraph Corporation and Grinnell Corporation, Civ. No. 13319, Docket, 1-2	102
2.2	United States v. International Telephone and Telegraph Corporation and Hartford Fire Insurance Company, Civ. No. 13320, Docket, 1-2	104
2.3	Memorandum from Richard McLaren for the Attorney General, June 20, 1969 (received from Department of Justice)	106
2.4	Memorandum from Richard McLaren for the Deputy Attorney General, approved July 25, 1969 (received from Department of Justice)	120

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3. During 1969, 1970 and 1971, Harold S. Geneen, President of ITT, met on numerous occasions with White House staff members, other Administration officials and members of both houses of Congress to discuss various matters, including international monetary policy, the Office of Foreign Direct Investment policy, antitrust policy, balance of payments, revenue sharing and expropriation by foreign governments. During the summer of 1969 Geneen sought a personal meeting with the President to discuss the ITT antitrust cases. His request was denied because the President's advisers thought that such a meeting was inappropriate.

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3.1	Harold Geneen testimony, 2 KCH 776-80.....	132
3.2	Memorandum from Hugh Sloan to John Ehrlichman, June 30, 1969 (received from White House).....	137
3.3	Memorandum from Dwight Chapin to Peter Flanigan, July 16, 1969 (received from White House).....	138
3.4	White House "White Paper," The ITT Anti-Trust Decision, January 8, 1974, 1, 3.....	139

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4. During September 1969 Colonel James Hughes, Military Assistant to the President, spoke with Dita Beard, an ITT lobbyist, about the pending antitrust suit. Hughes reported on the conversation in a memorandum to Ehrlichman dated September 19, 1969.

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4.1 Memorandum from James Hughes to John Ehrlichman, September 19, 1969 (received from White House)..... 142

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5. In August 1970 officials and representatives of ITT held five meetings with Administration officials, including Vice President Spiro Agnew, Secretary of Commerce Maurice Stans, Assistant Attorney General McLaren and White House counsel John Ehrlichman and Charles Colson to discuss antitrust matters in general and the ITT antitrust litigation in particular. In another meeting, Geneen and Attorney General Mitchell met to discuss overall antitrust policy with respect to conglomerates. At these meetings and in subsequent letters and memoranda ITT officials sought to persuade Administration officials that McLaren's antitrust views, as reflected in his conduct of the ITT litigation, were ill-advised and inconsistent with the Administration's antitrust policy.

		Page
5.1	Memorandum from Tod Hullin to John Ehrlichman, August 4, 1970 (received from White House)	145
5.2	Letter from Richard McLaren to Tod Hullin, July 30, 1970, with attached memorandum from Richard McLaren to John Ehrlichman (received from White House)	147
5.3	Memorandum from Richard McLaren to Tod Hullin, August 3, 1970, with attachments (received from White House)	153
5.4	Letter from "Ned" [Edward Gerrity] to Vice President Spiro Agnew, August 7, 1970, with attached memorandum (received from House Interstate and Foreign Commerce Committee)	163
5.5	Memorandum from John Poole to Files, August 7, 1970 (received from Department of Justice)	166
5.6	Memorandum from Tod Hullin to Richard McLaren, August 10, 1970 (received from White House)	168

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5.7 Letter from Thomas Casey to Charles Colson, August 7, 1970, with attachment (received from White House)..... 169

5.8 Memorandum from Charles Colson to John Ehrlichman, August 10, 1970 (received from White House)..... 177

5.9 Memorandum from Tod Hullin to John Mitchell, August 11, 1970 (received from White House)..... 178

5.10 John Mitchell testimony, 2 KCH 540, 542-43, 546, 549-50..... 179

5.11 Memorandum from Edward Gerrity to John Ryan, August 10, 1970 (received from Michael Mitchell)..... 185

5.12 Memorandum from John Ryan to William Merriam, August 24, 1970, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 154-56..... 186

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6. On September 15, 1970 the trial in ITT-Grinnell began. In memoranda dated September 17, 1970 from Ehrlichman to Attorney General Mitchell and October 1, 1970 from Colson to Ehrlichman, the ITT litigation was discussed. Ehrlichman and Colson stated their concern that McLaren's conduct of the ITT cases constituted an attack on "bigness per se" contrary to the Administration's expressed antitrust policy.

		Page
6.1	United States v. International Telephone and Telegraph Corporation and Grinnell Corporation, Civ. No. 13319, Docket, 5	190
6.2	Memorandum from John Ehrlichman to John Mitchell, September 17, 1970 (received from White House)	192
6.3	Memorandum from Charles Colson to John Ehrlichman, October 1, 1970, with attachment (received from White House)	193

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7. The trial of ITT-Grinnell was completed on October 30, 1970 and the case was taken under advisement. A judgment for ITT on the merits was rendered on December 31, 1970. A notice of appeal was filed on March 1, 1971.

		Page
7.1	United States v. International Telephone and Telegraph Corporation and Grinnell Corporation, Civ. No. 13319, Docket, 1,6-7	214
7.2	United States v. International Telephone and Telegraph Corporation, Opinion, December 31, 1970, 324 F. Supp. 19	217

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8. On March 3, 1971 at ITT's request Geneen and William Merriam, ITT Vice President and Director of Washington Relations, met with Ehrlichman to discuss antitrust matters.

		Page
8.1	John Ehrlichman log, March 3, 1971 (received from SSC).....	256
8.2	Letter from William Merriam to John Ehrlichman, March 4, 1971 (received from White House).....	257
8.3	William Merriam testimony, 3 KCH 951.....	258

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9. On March 20, 1971, on the motion of Solicitor General Erwin Griswold, the time for the government to perfect its appeal in ITT-Grinnell by filing its jurisdictional statement was extended from March 31, 1971 to April 20, 1971.

Page

9.1 United States v. International Telephone and Telegraph Corporation, Application for Extension of Time and Order of the Supreme Court, March 20, 1971, and letter from the Deputy Clerk of the Supreme Court to Solicitor General Erwin Griswold (received from Department of Justice)..... 260

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10. On March 30, 1971 Merriam and Thomas Casey, ITT Director of Corporate Planning, met with Peter Peterson, Assistant to the President for International Economic Affairs, to discuss a wide range of subjects including antitrust matters.

		Page
10.1	Peter Peterson affidavit, April 29, 1974.....	268
10.2	Letter from William Merriam to Peter Peterson, April 7, 1971 (received from Peter Peterson).....	271

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11. At the request of Ehrlichman who said he spoke for the President, Peterson met with Geneen and Merriam on Friday, April 16, 1971. They discussed various subjects relating to economic policy, including overall antitrust policy related to bigness. At the end of the meeting, Geneen and Merriam discussed ITT's specific antitrust problems, including the fact that the deadline for the government to perfect the ITT-Grinnell appeal was the following Tuesday, April 20. After the meeting Peterson telephoned Ehrlichman and reported on the meeting including the discussion of the ITT-Grinnell appeal. Ehrlichman indicated to Peterson that action was under way to postpone the appeal. The following week Peterson reported to the President on the meeting and his subsequent telephone call to Ehrlichman.

Page

11.1 Peter Peterson affidavit, April 29, 1974 278

11.2 Memorandum from Peter Peterson to the President, April 23, 1971 (received from White House)..... 281

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12. Also on April 16, 1971 Lawrence Walsh, a member of a law firm that had long represented ITT, telephoned Deputy Attorney General Kleindienst. Pursuant to that telephone conversation Walsh caused to be delivered to Kleindienst a letter and memorandum urging that before the Department of Justice decided to pursue the ITT-Grinnell appeal to the Supreme Court it should undertake a review by all interested federal agencies of the economic consequences of a Supreme Court decision favorable to the government. Copies of the Walsh letter and memorandum were delivered later that day to Peterson and Ehrlichman.

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12.1	Richard Kleindienst testimony, 2 KCH 250.....	284
12.2	Lawrence Walsh testimony, 3 KCH 1038-39.....	285
12.3	Letter from Lawrence Walsh to Richard Kleindienst, April 16, 1971 with attached memorandum of law (received from White House; reprinted at 2 KCH 265-68...	287
12.4	Memorandum from William Merriam to Peter Peterson, April 16, 1971 with attached letter (received from Peter Peterson).....	304
12.5	Letter from William Merriam to John Ehrlichman, April 16, 1971 with attached letter and memorandum of law (received from White House).....	305

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13. On Monday morning, April 19, 1971 Kleindienst told Walsh by telephone that Kleindienst did not think the ITT-Grinnell appeal would be delayed. In a memorandum dated April 19, 1971 to Kleindienst, McLaren disputed the position taken by Walsh in his letter and memorandum of April 16 and urged that the ITT-Grinnell appeal not be delayed.

Page

13.1 Lawrence Walsh testimony, 3 KCH 1039..... 308

13.2 Memorandum from Richard McLaren to Richard Kleindienst, April 19, 1971 (received from Department of Justice).... 309

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14. Beginning at 3:03 p.m. on the afternoon of April 19, 1971 the President met with Ehrlichman and George Shultz, Director of the Office of Management and Budget. The antitrust actions against ITT were among the subjects discussed. Ehrlichman said that the deadline for the ITT-Grinnell appeal was the following day and he reported that, despite his attempts to give the Justice Department "signals," the appeal was being pursued. The President then telephoned Kleindienst and ordered him to drop the appeal. After the telephone conversation the President expressed his concern that McLaren's actions with respect to conglomerates were contrary to the Administration's antitrust policy.

Page

14.1 Tape recording of conversation among the President, John Ehrlichman and George Shultz, April 19, 1971, 3:03 - 3:34 p.m., and House Judiciary Committee transcript thereof..... 312

14.2 Tape recording of telephone conversation between the President and Richard Kleindienst, April 19, 1971, 3:04 - 3:09 p.m., and House Judiciary Committee transcript thereof 346

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15. After the President's telephone call Kleindienst met with McLaren and Solicitor General Erwin Griswold and directed that the Solicitor General apply to the Supreme Court for another extension of time. At 4:30 p.m. Kleindienst telephoned Walsh and informed him that the Solicitor General was arranging for an extension of time for the government to perfect its appeal.

Page

15.1 Richard Kleindienst testimony, 2 KCH 250..... 350

15.2 Richard McLaren testimony, 2 KCH 252..... 351

15.3 Erwin Griswold statement, 2 KCH 242-43..... 352

15.4 Erwin Griswold testimony, 2 KCH 373, 378-80..... 354

15.5 Lawrence Walsh testimony, 3 KCH 1039..... 358

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16. On Tuesday, April 20, 1971, on the motion of Solicitor General Griswold, the time for the government to perfect its appeal in ITT-Grinnell by filing its jurisdictional statement was extended from April 20, 1971 to May 20, 1971.

Page

16.1 United States v. International Telephone and Telegraph Corporation, Application for Extension of Time filed by the Solicitor General and Order of the United States Supreme Court, April 20, 1971, with letter from the Deputy Clerk of the Supreme Court to Solicitor General Erwin Griswold (received from Department of Justice)..... 360

16.2 United States v. International Telephone and Telegraph Corporation, Supreme Court Docket, April 19-20, 1971..... 365

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17. Also on April 20, 1971 Felix Rohatyn, an investment banker who was a director of ITT, met with Kleindienst to discuss the economic and financial ramifications of divestiture of the Hartford Fire Insurance Company by ITT. At the meeting Rohatyn asked to present these arguments to McLaren, and such a presentation was later arranged for April 29.

Page

17.1 Richard Kleindienst testimony, 2 KCH 96-97..... 368

17.2 Felix Rohatyn testimony, 2 KCH 114..... 370

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18. On April 21, 1971 the President met with Attorney General Mitchell and discussed, among other things, the ITT-Grinnell appeal. The President said that he did not care about the merits of the case but that the business community believed that the Administration was being even rougher on it in antitrust matters than had previous administrations. Mitchell argued that it was a political mistake to interfere with the appeal. The President agreed to heed Mitchell's advice to permit the appeal to be perfected.

Page

18.1 Tape recording of the end of a meeting between the President and John Mitchell, April 21, 1971, 4:18 - 6:13 p.m., and House Judiciary Committee transcript thereof 372

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19. During the last ten days of April 1971 Geneen and Merriam of ITT wrote four letters to Administration officials -- one to Secretary of the Treasury John Connally and three to Peter Peterson -- containing references to antitrust matters. Two of the letters commented favorably on the ITT-Grinnell appeal delay.

Page

19.1 Memorandum from William Merriam to Peter Peterson, April 22, 1971, with attached letter from Harold Geneen to Peter Peterson, April 22, 1971 (received from Peter Peterson)..... 378

19.2 Letter from William Merriam to John Connally, April 22, 1971 (received from White House)..... 386

19.3 Memorandum from Peter Peterson to John Ehrlichman Dick [sic] Krogh, April 27, 1971, with attached letter from William Merriam to Peter Peterson, April 26, 1971 (received from White House)..... 388

19.4 Memorandum from Peter Peterson to John Ehrlichman and Dick [sic] Krogh, May 3, 1971, with attached letter from William Merriam to Peter Peterson, April 30, 1971 (received from White House..... 391

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20. On April 28, 1971 Ehrlichman wrote a memorandum to the President criticizing McLaren for failure to follow the Administration's antitrust policy, then under study by a Domestic Council Task Force, and recommending action to be taken. The President approved Ehrlichman's recommendations.

		Page
20.1	Memorandum from John Ehrlichman to the President, April 28, 1971 (received from White House).....	394
20.2	Memorandum from John Ehrlichman to Members of the Domestic Council, February 19, 1971 (received from Department of Justice).....	396
20.3	Memorandum from Egil Krogh to Richard McLaren, April 30, 1971 (received from White House).....	398
20.4	Memorandum from John Ehrlichman to John Connally, John Mitchell, George Shultz, Paul McCracken, Peter Peterson, and Peter Flanigan, September 14, 1971 (received from Department of Justice).....	401

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21. On April 29, 1971 Rohatyn accompanied by four ITT representatives met with Kleindienst, McLaren and Antitrust Division and Treasury Department staff members. The ITT representatives presented ITT's position that there would be adverse economic and financial consequences if the divestiture of Hartford were required. Following the meeting McLaren caused these arguments to be submitted to the Treasury Department and to Richard Ramsden, an independent financial consultant who had previously rendered advice to the Antitrust Division.

Page

21.1 Richard Kleindienst testimony, 2 KCH 98..... 404

21.2 Richard McLaren testimony, 2 KCH 102-03..... 405

21.3 Felix Rohatyn testimony, 2 KCH 114-16..... 407

21.4 Richard Kleindienst notes of April 29, 1971 meeting (received from Department of Justice)..... 410

21.5 Letter from Felix Rohatyn to Richard McLaren, May 3, 1971 (received from Department of Justice)..... 419

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22. Beginning in April 1971 Mitchell, Haldeman, Lawrence Higby, Gordon Strachan, William Timmons, Jeb Magruder and Robert Odle participated in the initial planning of the 1972 Republican National Convention and began to consider San Diego as a possible site. A memorandum from Higby to Strachan dated April 29, 1971 states that Haldeman discussed the possibility of a San Diego convention with California's Lt. Governor Ed Reinecke. The memorandum states that Reinecke would, as a result of his discussion with Haldeman, cause a proposal for San Diego to be the convention site to be made to the Republican National Committee.

Page

22.1 Memorandum from William Timmons to H. R. Haldeman, April 20, 1971 (received from White House)..... 425

22.2 Memorandum from Lawrence Higby to H. R. Haldeman, April 20, 1971 (received from White House)..... 426

22.3 Memorandum from Gordon Strachan to H. R. Haldeman, April 21, 1971 (received from White House)..... 427

22.4 Memorandum from Gordon Strachan to H. R. Haldeman, April 23, 1971 (received from White House)..... 428

22.5 Memorandum from Lawrence Higby to Gordon Strachan, April 29, 1971 (received from White House)..... 429

22.6 Memorandum from Gordon Strachan to H. R. Haldeman, May 11, 1971 with attached memorandum from William Timmons to H. R. Haldeman, May 6, 1971, and attached report (received from White House)..... 430

22.7 Memorandum from Robert Odle to Jeb Magruder, May 19, 1971 (received from White House)..... 448

22.8 Memorandum from Robert Odle to William Timmons, May 20, 1971 (received from White House)..... 454

22.9 Letter from Ed Reinecke to William Timmons, June 2, 1971 (received from White House)..... 455

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22.10 Memorandum from Robert Odle to Jeb Magruder, June 15, 1971 (received from White House)..... 456

22.11 Memorandum from Gordon Strachan to H. R. Haldeman, June 23, 1971 with attached memorandum from Robert Odle to Jeb Magruder, June 22, 1971, and attached memorandum from William Timmons to H. R. Haldeman, June 21, 1971 (received from White House)..... 458

22.12 Memorandum from Gordon Strachan to H. R. Haldeman, June 25, 1971 (received from White House)..... 464

22.13 Memorandum from Gordon Strachan to H. R. Haldeman, June 29, 1971, with attached memorandum from Jeb Magruder and William Timmons to John Mitchell and H. R. Haldeman, June 26, 1971, and attachments (received from White House)..... 465

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23. In a memorandum dated May 5, 1971 Ehrlichman informed Mitchell that he desired to meet with McLaren about the ITT cases to achieve the agreed-upon ends discussed by the President and Mitchell.

Page

23.1 Memorandum from John Ehrlichman to John Mitchell, May 5, 1971 (received from White House)..... 526

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24. On May 12, 1971 ITT President Geneen discussed with Congressman Bob Wilson, whose district included part of San Diego, the possibility of ITT financial support for a San Diego convention bid.

Page

24.1 Harold Geneen testimony, 2 KCH 647-48 528

24.2 Bob Wilson testimony, 3 KCH 866-67..... 530

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25. On May 17, 1971 the government's appeal in ITT-Grinnell was perfected by the filing of a jurisdictional statement.

Page

25.1 United States v. International Telephone and Telegraph Corporation, Notice of Docketing of Appeal, United States Supreme Court, May 17, 1971 (received from Department of Justice)..... 534

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26. By report dated May 17, 1971 Richard Ramsden reported his findings on the ITT position with respect to the financial ramifications of divestiture of Hartford.

Page

26.1 Ramsden Report, International Telephone and Telegraph Corporation, May 17, 1971, 2 KCH 103-10..... 538

26.2 Richard McLaren testimony, 2 KCH 103, 110..... 546

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27. On June 17, 1971 McLaren recommended to Kleindienst that the ITT suits be settled. His proposed settlement included the requirement that ITT divest itself of Grinnell, Canteen, and certain other ITT subsidiaries, but permitted ITT to retain Hartford Fire Insurance Company. The basic terms of the settlement offer were put to ITT on a take it or leave it basis and were accepted. Details of the settlement were then negotiated among ITT and Antitrust Division lawyers.

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27.1	Memorandum from Richard McLaren to Richard Kleindienst, June 17, 1971 (received from Department of Justice).....	550
27.2	Richard McLaren testimony, 2 KCH 110-13.....	553
27.3	Felix Rohatyn testimony, 2 KCH 115.....	557
27.4	Richard Kleindienst testimony, 2 KCH 98-99	558

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28. San Diego's convention bid was authorized by the San Diego City Council on June 29, 1971. On July 21, 1971 ITT-Sheraton's President, Howard James, confirmed by telegram his company's commitment to the San Diego Convention and Tourist Bureau of $100,000 for convention-related expenses plus an additional $100,000 if and when $200,000 was raised by the Bureau from other non-public sources. The pledge was subject to the condition that the Sheraton Harbor Island Hotel, then under construction, be used as Presidential convention headquarters. The decision for San Diego to be the convention site was made within the Administration and transmitted to the Republican National Committee. On July 23, 1971 the Republican National Committee selected San Diego as the 1972 convention site.

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28.1	San Diego City Council resolution, June 29, 1971 (received from San Diego City Council).....	563
28.2	Memorandum from Jeb Magruder to John Mitchell, June 30, 1971 (received from White House).....	568
28.3	Memorandum from Herbert Klein to H. R. Haldeman, June 30, 1971 (received from White House).....	569
28.4	Memorandum from William Timmons to Jeb Magruder, July 3, 1971 (received from White House).....	574
28.5	Memorandum from Herbert Klein to the President, July 19, 1971 (received from White House).....	575
28.6	Memorandum from William Timmons to the President, July 19, 1971 (received from White House).....	576
28.7	Memorandum from Jo Good to Robert Dole, July 19, 1971 (received from White House).....	578

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28.8 Memorandum from Jeb Magruder to John Mitchell, July 28, 1971 with attached memorandum from Robert Odle to Jeb Magruder, July 27, 1971 (received from White House)..... 582

28.9 Telegram from Howard James to Bob Wilson, July 21, 1971, 2 KCH 678-79..... 588

28.10 Harold Geneen testimony, 2 KCH 648-49..... 590

28.11 Resolution on Selection of the Site for the 1972 Republican National Convention, July 23, 1971..... 592

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29. On July 31, 1971, after ITT and Antitrust Division lawyers had negotiated details of the settlement of the ITT litigation, the settlement was announced.

Page

29.1 Richard McLaren testimony, 2 KCH 110-14..... 596

29.2 Felix Rohatyn testimony, 2 KCH 115..... 601

29.3 Richard Kleindienst testimony, 2 KCH 99..... 602

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30. A Sheraton Harbor Island Corporation check for $100,000 dated August 5, 1971 and representing the non-contingent portion of ITT's pledge was delivered to the San Diego Convention and Tourist Bureau.

Page

30.1 Photograph of check from Sheraton Harbor Island Corporation to the San Diego Convention and Tourist Bureau printed in Washington Post, March 16, 1972, A13..... 604

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31. On February 15, 1972 the President nominated Richard G. Kleindienst to be Attorney General to succeed John Mitchell who was leaving the Department of Justice and who later became Campaign Director of the Committee for the Re-election of the President. The Senate Committee on the Judiciary held hearings on the nomination and recommendation on February 24, 1972 that the nomination be confirmed.

Page

31.1 Announcement of President's Intention to Nominate Richard Kleindienst to be Attorney General, 8 Presidential Documents 440, 448..... 606

31.2 Letter from President Nixon to John Mitchell, February 15, 1972, 8 Presidential Documents 439..... 608

31.3 S. Exec. Rept. 92-19, Nomination of Richard Kleindienst, 92d Cong., 2d Sess. (1972)..... 609

31.4 Chicago Tribune, February 25, 1972, Section 2A, 1..... 612

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32. On February 22, 1972 columnist Jack Anderson obtained from an ITT source a memorandum dated June 25, 1971 purportedly written by ITT lobbyist Dita Beard addressed to ITT Vice President Merriam regarding the ITT-Sheraton convention pledge and settlement of the ITT antitrust cases. Anderson's investigative reporters contacted first Dita Beard to discuss and confirm the memorandum's validity and then ITT and Administration officials to discuss and attempt to confirm the events reported in the memorandum. On February 24, 1972 ITT personnel destroyed documents in the Washington office files.

		Page
32.1	Purported memorandum from Dita Beard to William Merriam, June 25, 1971, (received from White House) reprinted in 2 KCH 447-48	614
32.2	Jack Anderson testimony, 2 KCH 449	618
32.3	Brit Hume testimony, 2 KCH 408-14	619
32.4	Felix Rohatyn testimony, 2 KCH 115-16	626
32.5	Washington Post, March 3, 1972, D15	628
32.6	Howard Aibel testimony, 2 KCH 704-05	629

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33. In a February 28, 1972 Department of Justice press release Mitchell said he had met Dita Beard only once, at a party given by Governor Louis Nunn of Kentucky in May 1971. Mitchell denied allegations that he had discussed the ITT antitrust cases with her. He also denied in the press release that he had discussed the ITT matter with the President.

Page

33.1 John Mitchell statement, Department of Justice press release, February 28, 1972 (received from Department of Justice)..... 632

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34. On February 29, March 1 and March 3, 1972 there were published three columns by Jack Anderson based in part on the Beard memorandum. The articles alleged a connection between the ITT-Sheraton pledge and the ITT antitrust settlement and purported to involve both Mitchell and Kleindienst. As a result of the publication of the first two articles Kleindienst asked that his confirmation hearings be reopened.

Page

34.1 Washington Post, February 29, March 1, March 3, 1972 634

34.2 Washington Post, March 1, 1972, A1 637

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35. On March 1, 1972 during his final press conference as Attorney General, Mitchell again denied talking to the President about ITT or any other antitrust case.

Page

35.1 John Mitchell press conference, March 1, 1972, 1-2 (received from SSC)..... 640

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36. On or about March 1, 1972 a member of the staff of the SEC demanded that ITT produce documents in the files of ITT's Washington, D. C. office. The SEC staff member contended that production of the documents was called for by subpoenas previously issued in connection with SEC proceedings. Attorneys for ITT collected documents believed to be included in the SEC demand.

Page

36.1 Michael Mitchell affidavit submitted to House Judiciary Committee, May 1, 1974, with attachments..... 646

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37. On Thursday March 2, 1972 pursuant to Kleindienst's request the confirmation hearings resumed and Kleindienst, testifying under oath, denied talking other than casually to the White House and White House staff about the ITT matter. He denied receiving any suggestions from the White House as to the action that the Justice Department should take in the ITT cases.

Page

37.1 Richard Kleindienst testimony, 2 KCH 95-96, 157..... 678

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38. On the same day an ITT attorney delivered copies of one or more of the documents collected by ITT attorneys from ITT's Washington office files to White House aide Wallace H. Johnson. The document or documents were then conveyed by Johnson to John Mitchell. During the following week copies of other documents taken from the ITT Washington office which mentioned the ITT antitrust suits and contacts between ITT and administration officials were delivered by ITT attorneys to Johnson.

		Page
38.1	Michael Mitchell affidavit, submitted to House Judiciary Committee, May 1, 1974, with attachments	682
38.2	Wallace Johnson affidavit, April 25, 1974	713
38.3	John Mitchell log, March 2, 1972 (received from SSC)	717

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39. On the evening of March 2, 1972 Dita Beard, having spent two days at the ITT offices in New York City, left Washington by airplane for Denver, Colorado en route to West Yellowstone, Montana. During the flight she became ill and on the evening of March 3, 1972 she was admitted to a Denver hospital.

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39.1	Dita Beard statement, 2 KCH 741-42.....	720
39.2	Edward Gerrity testimony, 3 KCH 1167.....	722
39.3	United Air Lines passenger ticket, issued to D. Beard for Flight #175, March 2, 1972 (received from United Air Lines).....	723
39.4	Stewardess report on passenger illness of Mrs. Beard, occuring on Flight # 175, March 2, 1972 (received from United Air Lines).....	724
39.5	Letter from J. Edgar Hoover to Chairman James O. Eastland, March 5, 1972, 2 KCH 213.....	725
39.6	Medical Report by Dr. Joseph Snyder, March 13, 1972, 2 KCH 637-39.....	726

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40. On Friday, March 3, 1972 Kleindienst, in his testimony before the Senate Committee on the Judiciary, denied consulting with, reporting to, or getting directions from anybody at the White House about the ITT antitrust cases. He also testified that he did not recall why on April 19, 1971 the Department of Justice requested a delay in the appeal of the ITT-Grinnell case to the Supreme Court.

	Page
40.1 Richard Kleindienst testimony, 2 KCH 95, 181, 191, 203-04	730

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41. On the afternoon of Sunday, March 5, 1972, the President and Haldeman returned to Washington, D. C. from Key Biscayne. On Monday, March 6, 1972 the President had conversations with Haldeman, Ehrlichman and Colson. At about 1:30 p.m., shortly after leaving the President's office, Ehrlichman met with SEC Chairman Casey.

Page

41.1 John Ehrlichman log, March 6, 1972 (received from SSC) 736

41.2 Meetings and conversations between the President and John Ehrlichman, March 6, 1972 (received from White House) 737

41.3 Meetings and conversations between the President and H. R. Haldeman, March 1, March 5 and March 6, 1972 (received from White House) 739

41.4 Meetings and conversations between the President and Charles Colson, March 6, 1972 (received from White House) 741

41.5 John Ehrlichman log, March 21, 1972 (received from SSC) 742

41.6 William Casey testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, June 27, 1973, 261-64, 309-10 743

41.7 William Casey calendar, March 6, 1972 (received from U.S. Attorney, Southern District of New York) ... 749

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42. On Tuesday, March 7, 1972 in a prepared statement given under oath before the Senate Committee on the Judiciary, Kleindienst described the circumstances surrounding the request for an extension of time to appeal ITT-Grinnell. He omitted mention of the President's order to drop the case made during their telephone conversation of April 19, 1971.

Page

42.1 Richard Kleindienst testimony, 2 KCH 95, 249-50..... 752

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43. On March 8, 1972 Kleindienst testified before the Senate Committee on the Judiciary and denied again that he was interfered with, pressured, importuned or directed by anybody at the White House in connection with the discharge of his responsibilities in the ITT cases.

Page

43.1 Richard Kleindienst testimony, 2 KCH 95, 323, 353..... 756

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44. In early March 1972 a White House task force, consisting of Ehrlichman, Colson, Moore, Dean, Fielding, Johnson, Assistant Attorney General Robert C. Mardian and others, was established to follow the Kleindienst hearings; its activities continued throughout the month. Fielding was given the responsibility of reviewing White House files and collecting all documents relating to ITT, which he proceeded to do.

		Page
44.1	Charles Colson testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, 218	760
44.2	Richard Moore testimony, 5 SSC 1947-48	761
44.3	Wallace Johnson affidavit, April 25, 1974	763
44.4	Robert Mardian testimony, 6 SSC 2348	767
44.5	John Dean testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, 66, 68	768

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45. On March 14, 1972 John Mitchell appeared before the Senate Committee on the Judiciary and twice denied under oath that he talked to the President about the ITT antitrust litigation or any antitrust litigation. On the evening of March 14, 1972 the President and Mitchell had a telephone conversation which, according to Mitchell's logs, was their only telephone conversation during the month.

Page

45.1 John Mitchell testimony, 2 KCH 539, 552, 571..... 772

45.2 John Mitchell log, March 14, 1972 (received from SSC)..... 775

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46. On March 15, 1972 E. Howard Hunt met with Colson, Johnson and Timmons. It was determined that Hunt should interview Mrs. Beard respecting the authenticity of the purported Beard memorandum. Hunt flew to Denver and interviewed Mrs. Beard in her hospital room. On March 17, after his return to Washington, he prepared a detailed summary of the interview.

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46.1	Charles Colson calendar, March 15, 1972 (received from SSC)...	778
46.2	E. Howard Hunt testimony, 9 SSC 3734-35, 3752-53.....	780
46.3	Charles Colson testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, 201-03.....	784
46.4	Memorandum regarding Dita Beard, March 17, 1972 (received from White House).....	787

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47. "ITT" is written on Colson's calendar for the morning of March 18, 1972. Colson had three telephone conversations with Mitchell during the morning. That afternoon the President and Colson met for more than two hours.

Page

47.1 Charles Colson calendar, March 18, 1972 (received from SSC)..... 796

47.2 John Mitchell log, March 18, 1972 (received from SSC)..... 797

47.3 Meetings and conversations between the President and Charles Colson, March 18, 1972 (received from White House) 798

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8. On March 24, 1972 the President held his only news conference during the period of the Kleindienst nomination hearings. He stated that nothing had happened in the Senate hearings that shook his confidence in Kleindienst as an able, honest man fully qualified to be Attorney General. He also praised the actions of Richard McLaren, and the administration, in having moved effectively to stop the growth of ITT.

Page

48.1 President Nixon news conference, March 24, 1972, 8 Presidential Documents 673-75..... 800

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49. On the morning of March 30, 1972 Colson, Haldeman and MacGregor met. That afternoon Colson sent a memorandum to Haldeman stating that certain factors should be taken into account in determining whether to continue to support, or to withdraw, Kleindienst's nomination, including the possibility that documents would be revealed tending to show that the President was involved in the ITT situation in 1971 and contradicting statements made by Mitchell under oath during the hearings. Haldeman and Colson each had several conversations with the President on that day.

Page

49.1 Memorandum from Charles Colson to H. R. Haldeman, March 30, 1972, SSC Exhibit No. 121, 8 SSC 3372-76 805

49.2 Letter from William Merriam to John Connally, April 22, 1971 (received from White House) 810

49.3 Letter from William Merriam to Peter Peterson, April 30, 1971 (received from White House) 812

49.4 Letter from "Ned" [Edward Gerrity] to Vice President Spiro Agnew, August 7, 1970, with attached memorandum (received from House Interstate and Foreign Commerce Committee)..... 813

49.5 Memorandum from John Ryan to William Merriam, August 24, 1970, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Legislative Oversight of SEC: Agency Independence and the ITT Case, 154-56, and partial handwritten copy of memorandum (received from White House) 816

49.6 Memorandum from Herbert Klein to H. R. Haldeman, June 30, 1971 (received from White House)..... 820

49.7 Memorandum from Richard Kleindienst and Richard McLaren to John Ehrlichman, April 23, 1969 (received from White House)..... 821

49.8 Memorandum from Tod Hullin to Richard McLaren, August 10, 1970 (received from White House)..... 827

49.9 Memorandum from John Ehrlichman to John Mitchell, September 17, 1970 (received from White House)..... 828

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49.10 Memorandum from John Ehrlichman to John Mitchell, May 5, 1971 (received from White House) 829

49.11 Memoranda from John Ehrlichman to the President, April 28, 1971 and May 3, 1971 (received from White House) 830

49.12 H. R. Haldeman testimony, 8 SSC 3216, 3218-19 834

49.13 H. R. Haldeman calendar, March 30, 1972 (received from SSC) 837

49.14 Meetings and conversations between the President and H. R. Haldeman, March 30, 1972 (received from White House) 838

49.15 Meetings and conversations between the President and Charles Colson, March 30, 1972 (received from White House) 839

MTC-00030631_1081

50. On April 4, 1972 Mitchell returned to his office after about two weeks in Florida. That afternoon he met with the President and Haldeman at the White House. According to Haldeman's testimony before the Senate Select Committee on Presidential Campaign Activities, his notes taken during the meeting indicate that the Kleindienst hearings were discussed.

Page

50.1 John Mitchell log, March 21 - April 4, 1972 (received from SSC)..... 842

50.2 Meetings and conversations between the President and H. R. Haldeman, April 4, 1972 (received from White House)..... 845

50.3 H. R. Haldeman testimony, 7 SSC 2866, 2881..... 846

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On April 27, 1972, the final day of the Kleindienst confirmation hearings, Kleindienst, referring to his earlier testimony about communications with persons at the White House, testified that if someone had called him to instruct him on the handling of the ITT case, he would remember such a call. Kleindienst said that no such conversation occurred.

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51.1	Richard Kleindienst testimony, 2 KCH 95, 3 KCH 1673, 1682	850
51.2	Richard Kleindienst statement, October 31, 1973, reprinted in New York Times, November 1, 1973, 33	853

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52. The press provided extensive news coverage and frequent editorial commentary on the Kleindienst confirmation hearings. John Mitchell's denials that he discussed the ITT cases with President Nixon were reported. Richard Kleindienst's descriptions of his role in the ITT-Grinnell appeal and settlement were also reported; these descriptions omitted reference to the President's order that the appeal be dropped.

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52.1 Newspaper articles from The New York Times and The Washington Post, February 25 - June 28, 1972, regarding hearings on the Nomination of Richard Kleindienst to be Attorney General..... 856

52.2 The Washington Post, March 10, 1972, A-1, A-12..... 857

52.3 The New York Times, March 15, 1972, 1, 34..... 858

52.4 The Washington Post, April 27, 1972, A-1, A-7..... 859

52.5 The Washington Post, April 28, 1972, A-1, A-6..... 860

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3. By letter dated April 25, 1972 from Senator Eastland, Chairman of the Senate Committee on the Judiciary, to SEC Chairman William Casey, Senator Eastland requested access to ITT documents in the possession of the SEC. This request was denied by Chairman Casey. If Chairman Casey had complied with the Senate Judiciary Committee's request the SEC would have supplied the Committee with, among other things, the following documents not obtained by the Committee during the course of the Kleindienst hearings:

1. Letter dated April 22, 1971 from Harold Geneed to Peter Peterson concerning their April 16, 1971 meeting with memorandum on antitrust policy attached.

2. Letter dated April 22, 1971 from William Merriam to John Connally referring to the ITT antitrust litigation.

3. Letter dated April 26, 1971 from William Merriam to Peter Peterson referring to planned antitrust legislation.

4. Letter dated April 30, 1971 from William Merriam to Peter Peterson referring to Solicitor General Griswold's request for an extension of time to perfect the ITT-Grinnell appeal.

5. Letter dated August 7, 1970 from Thomas Casey of ITT to Charles Colson discussing the pending ITT antitrust litigation.

6. Letter dated August 7, 1970 from "Ned" [Edward Gerrity] to Vice President Spiro Agnew with memorandum about ITT antitrust litigation attached.

7. ITT inter-corporate memorandum dated August 10, 1970 from Edward Gerrity to John Ryan discussing, among other things, Richard McLaren and the Administration's merger policy.

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8. ITT inter-corporate memorandum dated August 24, 1970 from William Merriam to John Ryan discussing, among other things, the ITT antitrust litigation, Richard McLaren and contacts with the Administration.

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53.1 Letter from Senators Kennedy, Bayh, Hart, Burdick and Tunney to Chairman James Eastland, April 19, 1972, 3 KCH 1664..... 865

53.2 Letter from William Casey to Chairman James Eastland, April 26, 1972, 3 KCH 1664..... 866

53.3 Letter from Edward Kennedy to Chairman Harley Staggers, December 13, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 28-29..... 867

53.4 Michael Mitchell affidavit, submitted to House Judiciary Committee, May 1, 1974, with attachments..... 869

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54. On June 8, 1972 the Senate confirmed Kleindienst's nomination. On June 12, 1972 he became Attorney General.

		Page
54.1	Congressional Record, June 8, 1972, S9114-15	902
54.2	President Nixon remarks at swearing-in ceremonies for Richard Kleindienst as Attorney General, June 12, 1972, 8 Presidential Documents 1024	904

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55. On three occasions in September 1972 Congressman Harley Staggers, Chairman of the House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, requested from SEC Chairman William Casey access to material received from ITT by the SEC in connection with the SEC's investigation of ITT. Chairman Casey discussed Chairman Staggers' request with Mitchell, Dean and Colson. By letters to Chairman Staggers, Chairman Casey refused the requests. The ITT material was transferred by the SEC to the Department of Justice on October 6, 1972. In addition, an envelope containing other documents obtained from ITT which reflected contacts in 1970 and 1971 between representatives of ITT and Administration officials was delivered separately by the SEC to the office of Deputy Attorney General Erickson.

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55.1 Letter from Chairman Harley Staggers to William Casey, September 21, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 5..... 907

55.2 Chairman Harley Staggers statement, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 23..... 908

55.3 Letter from Chairman Harley Staggers to William Casey, September 28, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 6-8..... 909

55.4 William Casey testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, 230, 235, 241, 250-51, 260-62..... 922

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55.5 Letter from William Casey to Chairman Harley Staggers, September 26, 1973, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 5-6..... 920

55.6 Letter from William Casey to Chairman Harley Staggers, October 6, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 8-9..... 922

55.7 Letter from William Casey to Ralph Erickson, October 5, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 135-36..... 924

55.8 Charles Mallory testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry into Withholding and Transfer of Agency Files Pertaining to ITT, 86-89..... 928

55.9 Ralph Erickson testimony, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Agency Independence and the ITT Case, 128-30, 149-64..... 930

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. In a letter dated October 17, 1972 Chairman Staggers requested from Deputy Attorney General Erickson access to the ITT materials referred to the Department of Justice by the SEC. Erickson denied the request on the grounds that disclosure might prejudice any future criminal proceedings.

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56.1 Letter from Chairman Harley Staggers to Ralph Erickson, October 17, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry Into Withholding and Transfer of Agency Files Pertaining to ITT, 9-10..... 950

56.2 Letter from Ralph Erickson to Chairman Harley Staggers, October 26, 1972, House Interstate and Foreign Commerce Committee, Special Subcommittee on Investigations, Hearings on Legislative Oversight of SEC: Inquiry Into Withholding and Transfer of Agency Files Pertaining to ITT, 10-11..... 952

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57. On January 8, 1974 the Office of the White House Press Secretary issued a "White Paper" entitled, "The ITT Anti-Trust Decision," describing the President's role in the ITT antitrust cases and their settlement.

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57.1 White House "White Paper", The ITT Anti-Trust Decision, January 8, 1974..... 956

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58. On May 16, 1974, Richard Kleindienst pleaded guilty to one count of refusing or failing fully to respond to questions propounded to him by the Senate Committee on the Judiciary on March 2, 3, 7, and 8 and April 27, 1972.

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58.1 United States v. Kleindienst information, May 16, 1974, with attached Watergate Special Prosecution Force press release..... 966

58.2 Letter from Leon Jaworski to Herbert J. Miller, May 10, 1974 (received from Watergate Special Prosecution Force)..... 969

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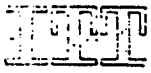
ATTACHMENT 46

TO THE

DECLARATION OF BRIAN DAUTCH

32.1 PURPORTED DITA BEARD MEMORANDUM, JUNE 25, 1971, 2 KCH 447-48

PERSONAL AND CONFIDENTIAL



Washington Office

1707 L Street, N.W.
Washington, D.C. 20036
Tel. (202) 296-6000

To: W. R. Merriam *Date:* June 25, 1971

From: D. D. Beard

Subject: San Diego Convention

I just had a long talk with EJG. I'm so sorry that we got that call from the White House. I thought you and I had agreed very thoroughly that under no circumstances would anyone in this office discuss with anyone our participation in the Convention, including me. Other than permitting John Mitchell, Ed Reinecke, Bob Haldeman and Nixon (besides Wilson, of course) no one has known from whom that 400 thousand committment had come. You can't imagine how many queries I've had from "friends" about this situation and I have in each and every case denied knowledge of any kind. It would be wise for all of us here to continue to do that, regardless of from whom any questions come; White House or whoever. John Mitchell has certainly kept it on the higher level only, we should be able to do the same.

I was afraid the discussion about the three hundred/four hundred thousand committment would come up soon. If you remember, I suggested that we all stay out of that, other than the fact that I told you I had heard Hal up the original amount.

Now I understand from Ned that both he and you are upset about the decision to make it four hundred in services. Believe me, this is not what Hal said. Just after I talked with Ned, Wilson called me, to report on his meeting with Hal. Hal at no time told Wilson that our donation would be in services ONLY. In fact, quite the contrary. There would be very little cash involved, but certainly some. I am convinced, because of several conversations with Louie re Mitchell, that our noble committment has gone a long way toward our negotiations on the mergers eventually coming out as Hal wants them. Certainly the President has told Mitchell to see that things are worked out.

Cont'd.

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fairly. It is still only McLaren's mickey-mouse we are suffering.

We all know Hal and his big mouth! But this is one time he cannot tell you and Ned one thing and Wilson (and me) another!

I hope, dear Bill, that all of this can be reconciled -- between Hal and Wilson -- if all of us in this office remain totally ignorant of any committment ITT has made to anyone. If it gets too much publicity, you can believe our negotiations with Justice will wind up shot down. Mitchell is definitely helping us, but cannot let it be known. Please destroy this, huh?

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The Washington Merry-Go-Round · THE WASHINGTON POST Tuesday, Feb. 29, 1972 B11

Secret Memo Bares Mitchell-ITT Move

By Jack Anderson

We now have evidence that the settlement of the Nixon administration's biggest anti-trust case was privately arranged between Attorney General John Mitchell and the top lobbyist for the company involved.

We have this on the word of the lobbyist herself, crusty, capable Dita Beard of the International Telephone and Telegraph Co. She acknowledged the secret deal after we obtained a highly incriminating memo, written by her, from ITT's files.

The memo, which was intended to be destroyed after it was read, not only indicates that the anti-trust case had been fixed but that the fix was a payoff for ITT's pledge of up to $400,000 for the upcoming Republican convention in San Diego.

Confronted with the memo, Mrs. Beard acknowledged its authenticity. The next night, badly shaken and acting against the wishes of ITT officials who wanted her to leave town, she met with my associate Brit Hume at her home to try to explain the document.

By this time, she said, ITT security officers from company headquarters in New York had put most of her office files through a document shredder to prevent their being subpoenaed after disclosure of the memo.

She said she met with Mitchell at the Governor's mansion in Kentucky during a dinner reception given by Republican Gov. Louie Nunn last May after the Kentucky Derby.

At the governor's reception, she said, Mitchell took her and Nunn aside and to her astonishment and shock, launched into an hour-long diatribe against her. He criticized her for putting pressure through Congress and the on the Justice Department White House on the anti-trust cases.

She said Mitchell confided to her he was sympathetic to ITT but had been prevented until then from helping the company because of the zeal of the Justice Department's anti-trust chief, Richard McLaren.

After his harangue, Mrs. Beard said, Mitchell agreed to discuss the anti-trust matters and asked bluntly, "What do you want?" meaning what companies did ITT most want to keep if the anti-trust cases were settled.

"We have to have Hartford Fire because of the economy," Mrs. Beard recalled saying.

She said she also told Mitchell ITT wanted to keep "part of the Grinnell Corporation," a manufacturing concern. She said Mitchell at first replied, "You can't have part of Grinnell," but he subsequently relented.

And, she said, when the Justice Department announced its settlement with ITT on July 31, more than two months later, it conformed to the agreement she had made with Mitchell.

Mrs. Beard insisted the subject of the GOP convention never came up with Mitchell and was never a factor in the anti-trust matter. But this clearly contradicts her memorandum, which was written about six weeks after the Kentucky Derby dinner.

It is addressed to W. R. (Bill) Merriam, head of ITT's Washington office. It is marked "Personal and Confidential" and its last line asks, "Please destroy this, huh?"

The memo warns Merriam to keep quiet about the ITT cash pledge for the Republican convention. "John Mitchell has certainly kept it on the higher level only," the memo says, "we should be able to do the same . . .

"I am convinced, because of several conversations with Louie (Gov. Nunn) re Mitchell that our noble commitment has gone a long way toward our negotiations on the mergers coming out as Hal (ITT President Harold Geneen) wants them.

"Certainly the President has told Mitchell to see that things are worked out fairly. It is still only McLaren's mickey-mouse we are suffering . . .

"If (the convention commitment) gets too much publicity, you can believe our negotiations with Justice will wind up shot down. Mitchell is definitely helping us, but cannot let it be known."

ITT Replies

ITT issued the following statement yesterday.

"There was no deal of any kind to settle our antitrust cases. It is unfair to the individuals involved to even suggest such a possibility. Agreement was reached with the Justice Department only after hard negotiations between our outside legal counsel and the then-Assistant Attorney General Richard McLaren and his staff.

"Neither Mrs. Beard nor anyone else except legal counsel was authorized to carry on such negotiations. The June 25, 1971, memorandum attributed to Mrs. Beard was seen for the first time by the ITT official to whom it was addressed when it was brought in by a member of Mr. Anderson's staff last week.

"The San Diego contribution of the Sheraton Hotels was made as a non-partisan joint effort of the San Diego community and was purely in support of a local situation. Sheraton has two hotels in San Diego and a third is under construction which would be completed in time for the convention. There was no tie-in of any kind between this local joint participation and any other aspects of ITT's business."

Bell-McClure Syndicate

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The Washington Merry-Go-Round — THE WASHINGTON POST Wednesday, March 1, 1972 B 15

Kleindienst Accused in ITT Case

By Jack Anderson

We have now established that Attorney General-designate Richard Kleindienst told an outright lie about the Justice Department's sudden out-of-court settlement of the Nixon administration's biggest antitrust case.

The case involved the International Telephone and Telegraph conglomerate, which appeared on the way to a Supreme Court showdown with the Justice Department over ITT's takeover of the huge Hartford Fire Insurance Co.

Last July, however, the case was abruptly settled. The terms, considered highly favorable to ITT, were announced at the same time ITT secretly pledged up to $400,000 to support the Republican convention in San Diego this year. A check for $100,000 has already been written.

Denying any connection between the convention cash and the antitrust settlement, Kleindienst insisted that the Justice Department's antitrust staff had been free from any political pressure from above.

"The settlement between the Department of Justice and ITT was handled and negotiated exclusively by Assistant Attorney General Richard W. McLaren (then head of the antitrust division)," Kleindienst said in a letter to Democratic National Chairman Larry O'Brien.

However, we have now learned that Kleindienst himself held roughly a half-dozen secret meetings on the ITT case with a director of the company before the settlement was reached.

The director, Wall Street financier Felix Rohatyn, conceded to us that he met in private with Kleindienst, who was then Deputy Attorney General, at the same time McLaren was negotiating with ITT's lawyers.

"I was supposed to make the case on the economic side of it," Rohatyn told my associate Brit Hume. He said he particularly stressed to Kleindienst ITT's arguments for keeping Hartford Fire.

Kleindienst Duplicity

Kleindienst's duplicity is further evidence that the administration has much to hide in the ITT affair, which looks more suspicious the more we investigate it.

Not only Kleindienst, but his boss, outgoing Attorney General John Mitchell, has now been linked to the settlement. Mitchell had officially disqualified himself from the case because of an old relationship with ITT. Yet Dita Beard, the company's top lobbyist, has now acknowledged that she arranged the settlement with Mitchell in a private conversation at the governor's mansion in Kentucky after last year's Kentucky Derby.

Her admission came after we obtained an extraordinary confidential memo, written by her, from ITT's files. The memo suggested strongly that the settlement was made in exchange for ITT's pledge of cash support for the Republican convention.

Mrs. Beard also told us that the day after we confronted her with the memo, ITT security men from New York shredded many of her office files because they feared the papers might be subpoenaed when the memo became public.

Mitchell would not discuss the matter with us. John Hushen, a Justice Department spokesman, told us there was "no truth" to Mrs. Beard's story. He acknowledged, however, that Mitchell had spoken to Mrs. Beard at the governor's mansion.

We gave Hushen specific questions to ask the Attorney General. But four hours later, after conferring with Mitchell, he called us back without the answers.

Instead, he urged that we withhold our story on Mrs. Beard's version of events until, as Hushen put it, "we get all our ducks in a row." He said Mitchell would "prove" the falsehood of Mrs. Beard's incriminating memo, but three days later, no proof had appeared.

Republican Names

The June 25, 1971, memo is studded with such big Republican names as President Nixon, Mitchell, California Lt. Gov. Ed Reinecke, San Diego Congressman Bob Wilson, White House aide Bob Haldeman and H. S. (Hal) Geneen, ITT's president.

It is addressed to W. R. (Bill) Merriam, manager of ITT's Washington office. "I thought you and I had agreed very thoroughly that under no circumstances would anyone in this office discuss with anyone our participation in the Convention, including me," Mrs. Beard wrote.

"Other than permitting John Mitchell, Ed Reinecke, Bob Haldeman and Nixon (besides Wilson, of course) no one has known from whom that 400 thousand commitment had come . . . John Mitchell has certainly kept it on the higher level only, we should be able to do the same . . ."

"I am convinced, because of several conversations with Louie (Nunn) re Mitchell that our noble commitment has gone a long way toward our negitiations on the mergers eventually coming out as Hal (Geneen) wants them. Certainly the President has told Mitchell to see that things are worked out fairly. It is still only McLaren's mickey-mouse we are suffering . . .

"If (the convention cash) gets too much publicity you can believe our negotiations with Justice will wind up shot down. Mitchell is definitely helping us, but cannot let it be known. Please destroy this, huh?"

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Contradictions Cited in ITT Case

By Jack Anderson

The Justice Department and International Telephone and Telegraph are now trying to lie their way out of a scandal over the suspicious, sudden settlement of a landmark anti-trust suit against ITT.

In earlier columns, we disclosed a remarkable ITT memo indicating the Justice Department granted the favorable settlement in exchange for cash support of the upcoming Republican convention in San Diego.

The author of the memo, ITT lobbyist Dita Beard, told us she arranged the settlement herself in a private conversation with Attorney General John Mitchell at a Kentucky dinner party.

Mitchell refused to talk to us. A spokesman, John Hushen, urged us to withhold our story until he could "get our ducks in a row." He then waited three days before calling us back with a terse statement from Mitchell.

The statement says the Attorney General "was not involved in any way with the Republican National Committee convention negotiations and had no knowledge of anyone from the committee or elsewhere dealing with International Telephone and Telegraph"

This is false. In mid-May last year, California Lt. Gov. Ed Reinecke and an aide, Edgar Gillenwaters, met with Mitchell in his Washington office to discuss efforts to hold the convention in San Diego.

Mitchell Misleads

We could not reach Reinecke, But Gillenwaters told us he and Reinecke personally informed Mitchell that ITT had offered to put up as much as $400,000 to support a GOP convention in San Diego.

"He liked the idea of (having the convention in) San Diego," Gillenwaters said of Mitchell. "He didn't need any persuading. He said, 'If you can do it, more power to you.'"

ITT also issued a statement on the matter which insisted that only its lawyers were authorized to deal with the Justice Department on the anti-trust cases. "Neither Mrs. Beard nor anyone else except legal counsel was authorized to carry on such negotiations," the statement said.

This is also false. Felix Rohatyn, an investment banker and director of ITT, told us he held a series of about a half-dozen secret meetings during the merger negotiations with Deputy Attorney General Richard Kleindienst. Rohatyn said he was specifically authorized to "make the case on the economic side" by ITT President Harold S. Geneen.

Rohatyn's acknowledgment also puts the lie to an earlier statement by Kleindienst, who has been named to replace Mitchell as Attorney General. On December 13, Kleindienst wrote to Democratic National Chairman Larry O'Brien to deny that high-level political pressure had been exerted on the Justice Department's anti-trust staff in the ITT case.

"The settlement between the Department of Justice and ITT was handled and negotiated exclusively by Assistant Attorney General Richard W. McLaren (then head of the anti-trust division)," the Kleindienst letter said.

Obviously, if Kleindienst were holding secret talks with Rohatyn on the case, it could not have been "handled" and negotiated "exclusively" by McLaren and ITT's lawyers.

Under the Dome

Sen. Jennings Randolph, the West Virginia Democrat who fought for the eighteen-year-old vote for 30 years, recently went home to personally escort a college student to the voter registration desk. The unawed young lady registered Republican . . . Sen. Marlow Cook (R-Ky.), ranking minority member of the Senate Penitentiaries Subcommittee, will soon be taking a hard look at the federal prison rehabilitation programs. Cook hopes to kick off two days of hearings this April with testimony by James Hoffa . . .

As a member of the powerful Senate Commerce Committee, Indiana Democrat Vance Hartke will have a lot to say about whether the national no-fault automobile insurance bill ever reaches the Senate floor. His opinion may be colored somewhat by the fact that he is a full-fledges, dues-paying ($175 per year) "sustaining member" of the American Trial Lawyers Association — the lawyers' group which is lobbying mightily to kill the no-fault proposal . . .

The black-owned Afro-American newspaper appeared on the newsstand in a Senate dining room recently and stayed there exactly one day before irate Senate Restaurants Manager Joseph Diamond banned it. . . . Doug Toms, Federal highway safety director, may leave his job to take a crack at politics in Washington state. Toms was bitterly disappointed when he couldn't get Detroit to put airbags in all passenger cars by the 1974 models. He recuperated from the setback with a breezy 21-day junket to Japan to visit auto plants and see whether Honda can develop a safer motorcycle.

Ball-McCluro Syndicate

MTC-00030631_1098

EXHIBIT B

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK, *et al.*, Plaintiffs v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1233 (CKK)

ORDER

In light of the recent tragic events affecting our Nation, this Court regards the benefit which will be derived from a quick resolution of these cases as increasingly significant. Accordingly, to avoid the expenditure of the parties' financial resources on litigation costs which will surely be incurred if these cases continue to be litigated, the Court will order the parties into settlement for a fixed period of time, commencing as of the date of this Order and expiring on November 2, 2001. The Court expects that during this time the parties and counsel will fully

expend and concentrate all of their resources upon resolving these cases through a fair settlement for all parties. If the cases have not been fully resolved through settlement by November 2, 2001, then the Court will proceed with the scheduling order to be addressed at the September 28, 2001, scheduling conference and entered immediately thereafter.

The parties have indicated that if the cases are to be settled they can best resolve these cases without the assistance from a mediator. It has been three months since the appellate court rendered its decision with no resolution reached by the parties. The Court will give the parties until October 12, 2001, to settle the cases on their own. However, if at the end of that time, they have not been fully successful, the parties shall submit to Chambers, on October 12, 2001, the name of an agreed-upon individual to act as facilitator/mediator to assist the parties in their efforts. If the parties cannot agree upon an individual, then the Court will appoint such an individual to act as their facilitator/mediator. Any payment due the facilitator/mediator shall be borne equally among the three parties. At ten-day intervals, without disclosing or discussing the contents of the settlement discussion, the parties shall participate in a conference call to apprize the Court of their progress in settling the cases. The Court will not entertain any requests for extensions of the deadlines.

The Court cannot emphasize too strongly the importance of making these efforts to settle the cases and resolve the parties' differences in this time of rapid national change. The claims by Plaintiffs of anticompetitive conduct by Microsoft arose over six years ago, and these cases have been litigated in the trial and appellate court for over four years. As the Court of Appeals has noted, the relevant time frame for this dispute spans "an eternity in the computer industry." The Court expects that the parties will act in good faith and will engage in an all-out effort to settle these cases, meeting seven days a week and around the clock, acting reasonably to reach a fair

resolution.

Based on the foregoing, it is this ___ day of September, 2001, hereby

ORDERED that all proceedings in the above captioned cases are stayed until November 2, 2001; and it is further

ORDERED that during this time, counsel shall focus all of their attention on the settlement of these cases; and it is further

ORDERED that the parties shall be permitted to proceed without a facilitator/mediator until October 12, 2001, and thereafter until a facilitator/mediator is appointed; and it is further

ORDERED that if no resolution is reached by October 12, 2001, on that date, the parties shall submit to Chambers the name of an agreed-upon individual to serve as a facilitator/mediator; if the parties are unable to agree upon such an individual, the Court will appoint such an individual to serve as a facilitator/mediator; and it is further

ORDERED that the parties shall participate in a conference call to Chambers on October 12, 2001, and on October 22, 2001, wherein the parties shall report the status of their negotiations to the Court.

SO ORDERED.

_____
COLLEEN KOLLAR-KOTELLY
United States District Judge

EXHIBIT C

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, vs. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, vs. MICROSOFT CORPORATION, Defendant.	Filed: November 6, 2001 Civil Action No. 98-1233 (CKK) Next Court Deadline: November 6, 2001 Status Conference

STIPULATION

Plaintiffs United States of America ("United States") and the States of New York, Ohio, Illinois, Kentucky, Louisiana, Maryland, Michigan, North Carolina and Wisconsin and Defendant Microsoft Corporation ("Microsoft"), by and through their respective attorneys, having agreed to the entry of this Stipulation, it is hereby stipulated and agreed that:

1. A Final Judgment in the form attached hereto may be filed and entered by the Court, upon the motion of any party or upon the Court's own motion, at any time after compliance with the requirements of the Antitrust Procedures and Penalties Act, 15 U.S.C. § 16, and without further notice to any party or other proceedings, provided that the United States has not withdrawn its consent, which it may do at any time before the entry of the

revised proposed Final Judgment by serving notice thereof on Microsoft and by filing that notice with the Court.

2. Unless otherwise provided in the revised proposed Final Judgment, Microsoft shall begin complying with the revised proposed Final Judgment as it was in full force and effect starting on December 16, 2001. Subject to the foregoing, Microsoft agrees to be bound by the provisions of the revised proposed Final Judgment pending its entry by the Court. If the United States withdraws its consent, or if (a) the revised proposed Final Judgment is not entered pursuant to the terms of the Stipulation, (b) the time has expired for all appeals of any Court ruling declining to enter the revised proposed Final Judgment, and (c) the Court has not otherwise ordered continued compliance with the terms and provisions of the revised proposed Final Judgment, then all of the parties shall be released from all further obligations under this Stipulation, and the making of this Stipulation shall be without prejudice to any party in this or any other proceeding.

3. Pursuant to 15 U.S.C. § 16(g), within ten (10) days of the submission of the revised proposed Final Judgment, Microsoft will file with the Court a description of any and all written or oral communications by or on behalf of Microsoft, or other person, with any officer or employee of the United States concerning or relevant to the revised proposed Final Judgment, except that any such communications made by counsel of record alone with the Attorney General or the employees of the United States Department of Justice alone shall be excluded from this requirement.

4. Pursuant to 15 U.S.C. § 16(b), on or before November 16, 2001, the United States will file with the Court a Competitive Impact Statement explaining the terms of the revised proposed Final Judgment. The United States will publish the revised proposed Final Judgment and Competitive Impact Statement in the Federal Register.

5. The United States will publish a notice informing the public of the revised proposed Final Judgment and public comment period in the *Washington Post* and the *San*

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Jose Mercury News, for seven days over a period of two weeks commencing no later than November 15, 2001.

6. Members of the public may submit written comments about the revised proposed Final Judgment to a designated official of the Antitrust Division of the United States Department of Justice for a period of 60 days after publication of the revised proposed Final Judgment and Competitive Impact Statement in the Federal Register.

7. Within 30 days after the close of the 60-day public comment period, the United States will file with the Court and publish in the Federal Register any comments it receives and its response to those comments.

8. Once the aforementioned procedures have been compiled with, the United States will file with the Court a certification of compliance with the requirements of 15 U.S.C. § 16, and a Motion for Entry of Revised Proposed Final Judgment, unless it withdraws its consent to entry of the revised proposed Final Judgment pursuant to paragraph 2, above. At any time thereafter, and at the conclusion of any further proceedings ordered by the court pursuant to 15 U.S.C. § 16(f), the Court may then enter the revised proposed Final Judgment, provided that the Court determines that entry of the revised proposed Final Judgment will serve the public interest.

DATED this 6th day of November, 2001

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

CHARLES A. JAMES (Bar No. 29220)
Assistant Attorney General
Antitrust Division
United States Department of Justice
901 Pennsylvania Avenue, N.W.
Washington, D.C. 20530
(202) 514-2401

MTC-00030631_1106

FOR PLAINTIFFS THE STATES OF NEW YORK, OHIO, ILLINOIS, KENTUCKY, LOUISIANA, MARYLAND, MICHIGAN, NORTH CAROLINA AND WISCONSIN:

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(212) 558-4000

MTC-00030631_1107

EXHIBIT D

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK, *et al.*, Plaintiffs v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1233 (CKK)

ORDER

Pursuant to the status hearing held on November 6, 2001, it is this eighth day of November, 2001, hereby

ORDERED that the above-captioned cases shall proceed on two independent tracks:

* "Track I" is the label the Court shall use to refer to the Court's review, pursuant to the Antitrust Procedures and Penalties Act (Tunney Act), 15 U.S.C. § 16(b)-(h), of the proposed Final Judgment which reflects a settlement of Civil Action No. 98-1232 in its entirety and a partial settlement of Civil Action No. 98-1233.
* "Track II" is the label the Court shall use to refer to the remaining litigation between the States proceeding to litigation and Microsoft concerning an appropriate remedy in Civil Action No. 98-1233.

Accordingly, with regard to Track I, it is hereby

ORDERED that the States choosing to join the settlement shall inform the Court not later than November 9, 2001, of the identity of the individual(s) who will serve as their representative(s) in future proceedings before the Court;[1] and it is further

ORDERED that the United States shall inform the Court of the anticipated date of publication of the proposed Final Judgment and Competitive Impact Statement in the Federal Register as soon as such date is available; and it is further

ORDERED that, pursuant to 15 U.S.C. § 16(b), the proposed Final Judgment, in its final form, and Competitive Impact Statement shall be filed with the Court not later than November 15, 2001; and it is further

ORDERED that, pursuant to 15 U.S.C. § 16(g), within ten days of the publication of the proposed Final Judgment in the Federal Register, Microsoft shall file with the Court a description of any and all written or oral communications by or on behalf of Microsoft, or other person, with any officer or employee of the United States concerning or relevant to the proposed Final Judgment, except that any such communications made by counsel of record alone with either the Attorney General or the employees of the United States Department of Justice shall be excluded from this requirement; and it is further

ORDERED that, pursuant to 15 U.S.C. § 16(c), the United States shall publish in the *Washington Post*, the *San Jose Mercury News*, and the *New York Times* a notice containing a

---

[1]While the Court is aware that the requirements of the Antitrust Procedures and Penalties Act (Tunney Act) apply only to proposals for "consent judgment[s] submitted by the United States," 15 U.S.C. § 16(b), the Court presumes that the States which have chosen to enter into a settlement agreement with Microsoft will play an active role in advocating the entry of the consent judgment proposed in this case.

MTC-00030631_1110

summary of the terms of the proposed Final Judgment, a summary of the Competitive Impact Statement, and a list of materials and documents which the United States shall make available for purposes of meaningful public comment and the place where such materials and documents are available for public inspection. Such publication shall continue for seven days over a period of two weeks, commencing not later than November 15, 2001; and it is further

ORDERED that members of the public may submit written comments concerning the proposed Final Judgment to a designated official of the Antitrust Division of the United States Department of Justice for a period of 60 days following publication of the proposed Final Judgment and Competitive Impact Statement in the Federal Register; and it is further

ORDERED that, within thirty days after the close of the 60-day public comment period, the United States shall file with the Court and publish in the Federal Register its responses to any comments received; and it is further

ORDERED that, simultaneous with the filing of its response to the comments of the public, the United States shall file any appropriate legal briefing with the Court; and it is further

ORDERED that upon completion of the above procedures, the United States shall file with the Court a certification of compliance with the requirements of the Antitrust Procedures and Penalties Act (Tunney Act), 15 U.S.C. § 16(b)-(h).

As discussed at the November, 6, 2001, hearing, following the close of the 60-day public comment period, the Court will hold a status conference wherein the parties shall address the nature and need for a hearing concerning the proposed final judgment.

MTC-00030631_1111

With regard to Track II, it is hereby

ORDERED that any and all motions in limine shall be filed not later than February 22, 2002; and it is further

ORDERED that a Pre-hearing Conference shall be held on March 4, 2002, at 9 a.m.

SO ORDERED.

As discussed at the hearing on November 6, 2001, following the filing of the parties' proposals for remedial relief in early December, the Court will require the parties proceeding along Track II to file a Joint Status Report which addresses any remaining issues concerning the nature of the remedy hearing. Thereafter, the Court will set a date for a status conference.

COLLEEN KOLLAR-KOTELLY
United States District Judge

MTC-00030631_1112

EXHIBIT E

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, vs. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK *ex. rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, vs. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Status Conference

NOTICE OF ENTRY OF APPEARANCE

Please enter the appearance of Charles F. Rule (Bar No. 370818) as counsel for defendant Microsoft Corporation.

Respectfully submitted,

Charles F. Rule (D.C. Bar #370818)
Fried, Frank, Harris, Shriver & Jacobson
1001 Pennsylvania Avenue, N.W.
Suite 800
Washington, D.C. 20004-2505
Telephone No. 202-639-7300

Attorney for Defendant
Microsoft Corporation

Dated: November 15, 2001

EXHIBIT F

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK *ex. rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Status Conference

DEFENDANT MICROSOFT CORPORATION'S DESCRIPTION OF WRITTEN OR ORAL COMMUNICATIONS CONCERNING THE REVISED PROPOSED FINAL JUDGMENT AND CERTIFICATION OF COMPLIANCE UNDER 15 U.S.C. § 16(g)

In conformance with Section 2(g) of the Antitrust Procedures and Penalties Act ("APPA"), 15 U.S.C. § 16(g), defendant Microsoft Corporation ("Microsoft") respectfully submits the following description of "any and all written or oral communications by or on behalf of" Microsoft "with any officer or employee of the United States concerning or relevant to" the Revised Proposed Final Judgment filed in these actions on November 6, 2001. In accordance with the requirements of the APPA, this description excludes

only "communications made by counsel of record alone with the Attorney General or the employees of the Department of Justice alone."

(1) Following the Court's Order dated September 27, 2001, and continuing through November 6, 2001, counsel for Microsoft met on a virtually daily basis with counsel for the United States and the plaintiff States in Washington, D.C. After the Court appointed Professor Eric Green of Boston University School of Law as mediator on October 12, 2001, Professor Green and his colleague Jonathan Marks participated in many of those meetings. From October 29, 2001 through November 2, 2001, Will Poole, a Microsoft vice president, also participated in some of the meetings.

(2) On October 5, 2001, counsel for Microsoft met with representatives of the United States and the plaintiff States in Washington, D.C. to answer a variety of technical questions. Linda Averett, Michael Wallent, Robert Short and Chad Knowlton of Microsoft attended this meeting, as did Professor Edward Felten of Princeton University, one of plaintiffs' technical experts.

Microsoft certifies that, with this submission, it has complied with the requirements of 15 U.S.C. § 16(g) and that this submission is a true and complete description of such communications known to Microsoft.

MTC-00030631_1117

Dated: Washington, D.C.
December 10, 2001

Respectfully submitted,

John L. Warden (Bar No. 222083)
Richard J. Urowsky
Steven L. Holley
Michael Lacovara
Richard C. Pepperman, II
Ronald J. Colombo
SULLIVAN & CROMWELL
125 Broad Street
New York, New York 10004
(212) 558-4000

Bradley P. Smith (Bar No. 468060)
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1701 Pennsylvania Avenue, N.W.
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(202) 956-7500

Counsel for Defendant Microsoft Corporation

William H. Neukom
Thomas W. Burt
David A. Heiner, Jr.
Diane D'Arcangelo
Christopher J. Meyers
MICROSOFT CORPORATION
One Microsoft Way
Redmond, Washington 98052
(425) 936-8080

Dan K. Webb
WINSTON & STRAWN
35 West Wacker Drive
Chicago, Illinois 60601
(312) 558-5600

Charles F. Rule (Bar No. 370818)
FRIED, FRANK, HARRIS, SHRIVER & JACOBSON
1001 Pennsylvania Avenue, N.W.
Suite 800
Washington, D.C. 20004-2505
(202) 639-7300

MTC-00030631_1118

EXHIBIT G

United States District Court
for the District of Columbia

ECF

STATE OF NEW YORK ex rel.
Attorney General ELIOT SPITZER, et al.,
Plaintiffs,

v.

MICROSOFT CORPORATION,
Defendant.

APPEARANCE

CASE NUMBER: 98-1233 (CKK)

To the Clerk of this court and all parties of record:

Enter my appearance as counsel in this case for

The State of West Virginia
by Attorney General Darrell V. McGraw, Jr.

December 12, 2001
Date

W. Va. 5502
BAR IDENTIFICATION NO.

Douglas Lee Davis
Signature

Douglas Lee Davis
Print Name

P. O. Box 1789
Address

Charleston, WV 25326
City State Zip Code

(304) 558-8986
Phone Number

US DISTRICT COURT FOR THE DISTRICT OF COLUMBIA
RENEWAL APPLICATION
(PLEASE PRINT OR TYPE)

Name

Last Davis First Douglas

Middle Lee Generation (Jr., Sr., etc.) _____

D.C./Federal Bar Identification Number _____ Social Security Number 286-56-8106

(If Federal Bar, please state name of court): _____

Address

Firm Office of the West Virginia Attorney General

Building & Suite P. O. Box 1789

Street 812 Quarrier St., 4th Floor

City Charleston State WV

Zip 25326 Phone (304) 558-8986

Unit (within firm or agency) Consumer Protection and Antitrust

Status

Criminal Justice Act Attorney (Yes) _____ (No) _____

U.S. District Court Admission Date Sept. 25, 1990, S.D.W.Va.

Employed by the United States Government (Yes) _____ (No) X

GOVERNMENT ATTORNEYS who practice and file pleadings before the US District Court should complete this form. Renewal Fees may be waived.

CHANGE OF ADDRESS

This form may serve as written notification to the Clerk's office of address change under the requirements of Local Rule 706(c). However, this notification DOES NOT fulfill the PRAECIPE requirement of the Rule. 706(c) requires that, "[t]he attorney shall also within 10 days file a praecipe reflecting such change in each case which the attorney has pending before this Court serving a copy upon each of the attorneys in these cases."

FAILURE TO RENEW

An attorney who fails to file the required certification and pay the renewal fee will be provisionally removed from the list of members in good standing. The name of the attorney will be restored to the list of members in good standing upon the filing of the required certificate and payment of the delinquent fee within five years after the due date. At the end of the five years from the due date, the attorney's name will be permanently removed from the roll, without prejudice to an application for admission as a new member. [Local Rule 701.1(c)].

MTC-00030631_1121

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

ATTORNEY CERTIFICATION

In compliance with Local Rule 701.1.(a), all attorneys who are members in good standing of the bar of this Court, AND/OR, government attorneys eligible to practice by virtue of Local Rule 104(e) or (f), must submit this certification and hereby certify that he/she:

(MANDATORY FOR ATTORNEYS WHO ARE MEMBERS OF THE BAR OF THIS COURT)
(OPTIONAL FOR ATTORNEYS WHO WISH TO MAINTAIN A 'GOVERNMENT' STATUS)

1. _X_ is familiar with the current version of the Federal Rules of Civil Procedure, the Federal Rules of Evidence, the Local Rules of this Court, and the Rules of Professional Conduct as adopted by the District of Columbia Court of Appeals

and/or

2. ____ is familiar with the current version of the Federal Rules of Criminal Procedure, the Sentencing Guidelines, the Federal Rules of Evidence, the Local Rules of this Court, and the Code of Professional Conduct as adopted by the District of Columbia Court of Appeals. (Attorneys who appear in criminal cases.)

In compliance with Local Rule 104(b), an attorney who wishes to appear as sole or lead counsel in a contested evidentiary hearing or trial on the merits further certifies that he/she:

(CHECK ALL ITEMS THAT APPLY)

3. ____ has previously acted as sole or lead counsel in a federal district court or the Superior Court of the District of Columbia or a state trial court of general jurisdiction in a contested jury or bench trial or other contested evidentiary hearing in which testimony was taken in open court and an order or other appealable judgment was entered. [Local Rule 104(b)(1)]; OR

4. ____ has participated in a junior capacity in an entire contested jury or bench trial in a federal district court or the Superior Court of the District of Columbia or a state trial court of general jurisdiction. [Local Rule 104(b)(2)]; OR

5. ____ has satisfactorily completed a continuing legal education trial advocacy course of at least 30 hours sponsored by the District of Columbia Bar or accredited by a State Bar. [Local Rule 104(b)(3)]

In consideration of Local Rules 702(a) and 702.1, the undersigned applicant certifies that he/she:

(OPTIONAL)

6. ____ has read Local Rule 702(a) and understands that members in good standing of the bar of this Court have an obligation to assist or represent the needy in civil matters before this Court whenever requested by the Court and if necessary, without compensation. I have read Local Rule 702.1 and understand that the Court has established a voluntary Civil Pro Bono Panel from which attorneys may be appointed by the Court to represent indigent pro se litigants. I have indicated below whether I would like to receive additional information regarding the Court's Civil Pro Bono Panel.

_____ Please Send _____ Do Not Send

I declare under penalty of perjury that the foregoing is true and correct.

12/12/01
DATE

SIGNATURE OF ATTORNEY

MTC-00030631_1122

CERTIFICATE OF SERVICE

I hereby certify that on this 12th day of December, 2001, copies of my Notice of Appearance was served upon the following by first-class mail, postage prepaid, to:

Brendan V. Sullivan, Jr., Esquire
Williams & Connolly, LLP
725 Twelfth Street, N.W.
Washington, D. C. 20005

John L. Warden, Esquire
Sullivan & Cromwell
125 Broad Street, 31st Floor
New York, NY 10004-2498

Bradley P. Smith, Esquire
Sullivan & Cromwell
1701 Pennsylvania Avenue, N.W., 7th Floor
Washington, D. C. 20006-5805

William H. Neukom, Esquire
Law and Corporate Affairs
Microsoft Corporation, Building 8
One Microsoft Way
Redmond, WA 98052-6399

Dan K. Webb, Esquire
Winston & Strawn
35 West Wacker Drive
Chicago, IL 60601

Charles F. Rule, Esquire
Fried, Frank, Harris, Shriver & Jacobson
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Philip S. Beck, Esquire
Bartlit, Beck, Herman, Palenchar & Scott
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54 West Hubbard Street
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Renata B. Hesse, Esquire
United States Department of Justice
Antitrust Division
601 D Street, N.W., Suite 1200
Washington, D. C. 20530

Jay L. Himes, Esquire

Office of the Attorney General of the State of New York
120 Broadway, Suite 2601
New York, NY 10271

Kevin J. O'Connor, Esquire
Office of the Attorney General of the State of Wisconsin
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Beth Finnerty, Esquire
Office of the Attorney General of the State of Ohio
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Columbus, OH 43215

Blake Harrop, Esquire
Office of the Attorney General of the State of Illinois
100 West Randolph Street, 12th Floor
Chicago, IL 60601

Douglas L. Davis
Assistant Attorney General
State of West Virginia

CertificateofService.LitigatingStates.12-12-01

EXHIBIT H

AO 458 (Rev. 6/98 DC) - APPEARANCE

United States District Court
for the District of Columbia

STATE OF NEW YORK, et al.,
Plaintiffs,

v.

MICROSOFT CORPORATION,
Defendant.

APPEARANCE

CASE NUMBER: 98-1233 (CKK)

To the Clerk of this court and all parties of record:

Enter my appearance as counsel in this case for

Plaintiff States New York, California, Connecticut, Florida, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, North Carolina, Ohio, Utah, Wisconsin and the District of Columbia

November 1, 2001
Date

253286
BAR IDENTIFICATION NO.

Steven R. Kuney
Signature

Steven R. Kuney,
Print Name

Williams & Connolly LLP
Address
725 Twelfth Street, N.W.
Washington, D.C. 20005
City State Zip Code

202-434-5000
Phone Number

25

MTC-00030631_1126

CERTIFICATE OF SERVICE

I hereby certify that on this 1st day of November, 2001, copies of Notices of Appearance for Brendan V. Sullivan, Steven R. Kuney and John E. Schmidtlein were served by facsimile and first-class mail, postage prepaid, to:

John L. Warden, Esq.
Sullivan & Cromwell
125 Broad Street
31st Floor
New York, NY 10004-2498

Bradley P. Smith, Esq.
Sullivan & Cromwell
1701 Pennsylvania Avenue, N.W.
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William H. Neukom, Esq.
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Counsel for Defendant Microsoft

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Renata B. Hesse, Esq.
United States Department of Justice
Antitrust Division
601 D Street, N.W.
Suite 1200
Washington, D.C. 20530

Counsel for Plaintiffs

John E. Schmidtlein

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EXHIBIT I

AO 458 (Rev. 6/98 DC) - APPEARANCE

United States District Court
for the District of Columbia

STATE OF NEW YORK, et al.,
Plaintiffs,

v.

MICROSOFT CORPORATION,
Defendant.

APPEARANCE

CASE NUMBER: 98-1233 (CKK)

To the Clerk of this court and all parties of record:

Enter my appearance as counsel in this case for

Plaintiff States New York, California, Connecticut, Florida, Illinois, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Michigan, Minnesota, North Carolina, Ohio, Utah, Wisconsin and the District of Columbia

November 1, 2001
Date

12757
BAR IDENTIFICATION NO.

Brendan V. Sullivan, Jr.
Signature

Brendan V. Sullivan, Jr.
Print Name

Williams & Connolly LLP
Address
725 Twelfth Street, N.W.
Washington, D.C. 20005
City State Zip Code

202-434-5000
Phone Number

26

MTC-00030631_1130

CERTIFICATE OF SERVICE

I hereby certify that on this 1st day of November, 2001, copies of Notices of Appearance for Brendan V. Sullivan, Steven R. Kuney and John E. Schmidtlein were served by facsimile and first-class mail, postage prepaid, to:

John L. Warden, Esq.
Sullivan & Cromwell
125 Broad Street
31st Floor
New York, NY 10004-2498

Bradley P. Smith, Esq.
Sullivan & Cromwell
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Washington, D.C. 20006-5805

William H. Neukom, Esq.
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Microsoft Corporation
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One Microsoft Way
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Counsel for Defendant Microsoft

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Chicago, IL 60610

Renata B. Hesse, Esq.
United States Department of Justice
Antitrust Division
601 D Street, N.W.
Suite 1200
Washington, D.C. 20530

Counsel for Plaintiffs

John E. Schmidtlein

RECEIVED
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MTC-00030631_1132

EXHIBIT 11

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

UNITED STATES OF AMERICA Plaintiff, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1232 (CKK) Filed: January 28, 2002
STATE OF NEW YORK *ex rel.* Attorney General ELIOT SPITZER, *et al.*, Plaintiffs, v. MICROSOFT CORPORATION, Defendant.	CIVIL ACTION NO. 98-1233 (CKK) Next Court Deadline: March 4, 2002 Pre-hearing Conference

MEMORANDUM OF POINTS AND AUTHORITIES IN SUPPORT OF MOTION OF RELPROMAX ANTITRUST INC. FOR LIMITED PARTICIPATION AS AN AMICUS CURIAE AND FOR AN EXTENSION OF TIME ON THE GROUNDS THAT THE UNITED STATES HAS NOT PROVIDED A COMPETITIVE IMPACT STATEMENT IN COMPLIANCE WITH THE REQUIREMENTS OF 15 U.S.C. § 16(b)

Plaintiff, the United States of America , has not complied with the disclosure requirements of the Tunney Act, specifically 15 U.S.C. § 16(b), or this Court's Order dated November 8, 2001.

MTC-00030631_1134

Pursuant to 15 U.S.C. § 16(b), anyone has the statutory right to comment on the Revised Proposed Final Judgment ("RPFJ") in captioned Civil Action 98-1232 for sixty (60) days after the United States complies with the requirement for a Competitive Impact Statement ("CIS") set forth in 15 U.S.C. § 16(b). Relpromax Antitrust Inc. ("Relpromax") hereby asserts its statutory right, which is also the statutory right of all Americans, to consider for sixty (60) days a CIS which meets the requirements of 15 U.S.C. § 16(b) and then to file with the United States such written comments as it deems appropriate with respect to the RPFJ in light of the information disclosed in the CIS pursuant to 15 U.S.C. § 16(b).

Accordingly, Relpromax seeks an order:

1) granting Relpromax status as an amicus curiae with the right of limited participation in proceedings so it can assist, if necessary, in obtaining, inter alia, the statutorily required (and Court ordered) CIS;

2) compelling the United States to comply with the statute and the November 8, 2001, order; and,

3) extending the time for comments to provide Relpromax and all interested parties with their statutory rights.

II. FACTUAL AND PROCEDURAL BACKGROUND

On November 15, 2001, the United States filed a CIS.

On November 28, 2001, the CIS was published in the Federal Register.

III. ARGUMENT

The Tunney Act, 15 U.S.C. § 16(b)(3), (4), and (6) requires in pertinent part a CIS which provides:

"(3) an explanation of the proposal for a consent judgment, including an explanation of

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any unusual circumstances giving rise to such proposal or any provision contained therein, relief to be obtained thereby, and the anticipated effects on competition of such relief;

(4) the remedies available to potential private plaintiffs damaged by the alleged violation in the event that such proposal for the consent judgment is entered in such proceeding; and

(6) a description and evaluation of alternatives to such proposal actually considered by the United States."

In violation of 15 U.S.C. § 16(b)(3), the CIS does not contain anything approaching an analysis of the effects of the RPFJ on competition.

In violation of 15 U.S.C. § 16(b)(4), the CIS does not analyze or explain the effect of the RPFJ on private litigants.

In violation of 15 U.S.C. § 16(b)(6), the CIS does not contain a full evaluation of all alternatives to the RPFJ actually considered by the United States. The CIS mentions, but does not evaluate, numerous other alternatives.

Further, no documents considered determinative in formulating the RPFJ throughout the negotiation process were disclosed as required by 15 U.S.C. § 16(b).

Accordingly, entry of an order in the form submitted herewith is respectfully requested.

MTC-00030631_1136

REQUEST FOR ORAL HEARING

An oral hearing on this motion is requested pursuant to 15 U.S.C. § 16(f)(5).

Respectfully submitted,

January 28, 2002

Peter Peckarsky (D.C. Bar No. 266171)
1615 L Street, N.W., Suite 850
Washington, D.C. 20036
Telephone: (202) 785-0100
Telecopier: (202) 408-5200

Attorney for Relpromax Antitrust Inc.

MTC-00030631_1137

EXHIBIT 12

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

The Real *Microsoft* Case and Settlement

BY CHARLES A. JAMES

United States v. Microsoft,[1] the first major monopolization case of the 21st century, has transformed antitrust from an obscure legal discipline into a broad public dialogue about the role of competition in our society and our national tolerance for economic power. The case has all of the trappings of a media event. It involves the signature product of the digital age, the Windows operating system, through which the vast majority of computer users worldwide interact with what has become a basic appliance in human life. It pits the power of the U.S. government against one of the country's most successful corporations, led by one of its wealthiest and most visible citizens. It became a contest between one of the nation's most skilled and flamboyant trial lawyers and a company with the resources to purchase all the legal talent money could buy.

Additionally, the case became a contest between Microsoft and the other lions of the information technology industry. Never before in the history of the Antitrust Division have competitors of a firm under prosecution invested so heavily in the outcome of one of our cases. By virtue of its control over the operating system, Microsoft enjoys distinct advantages in competition for adjacent markets. With huge amounts of money on the line, Microsoft's competitors hired scores of lawyers and lobbyists to press their views of the case and to insist that the remedy be crafted so as to advance their interests.

Finally, *Microsoft* was the first major antitrust case to be tried in the age of 24-hour news and, as such, came to be covered like the Super Bowl, complete with play-by-play reporting, color commentary, player interviews, and endless expert analysis. Antitrust lawyers and academicians suddenly became television personalities, providing blow-by-blow commentary on every development in the litigation. A nine-hour court of appeals argument was broadcast live over the Internet, and, miraculously enough, ordinary people listened to lawyers debating the finer points of technology tying and market definition. The general public actually formed opinions about the appropriate outcome of an antitrust case.

Under the circumstances, it was very easy for the antitrust case itself to become mere subtext—i.e., to become completely submerged beneath the show business, pontification, and self-interested advocacy. Antitrust, after all, is about the application of technical legal principles to highly complex economic circumstances. The types of issues that actually matter in antitrust analysis are far less glamorous and intriguing than the issues usually discussed in connection with the *Microsoft* case. One bedrock principle of antitrust law—that a firm might lawfully obtain a monopoly and exercise the power it affords—is almost counterintuitive to the American psyche and presents difficult line-drawing exercises even for the antitrust cognoscenti. Thus, care must be taken to distinguish between "*Microsoft*, the antitrust case" and "*Microsoft*, the public spectacle." The two have developed quite differently.

In this article, I address what I consider to be the real *Microsoft* case—the antitrust dispute fought out in the courts. In particular, I wish to refocus attention on the legal allegations charged in the complaint, how those allegations were resolved in the courts, and the remedies in the proposed Final Judgment presently undergoing Tunney Act review (the "proposed decree"). That the *Microsoft* litigation that emerged from the court of appeals was a far narrower antitrust case than was originally brought seems to have gone largely unnoticed. Viewed purely as an antitrust matter, we believe the remedy presently under consideration by the district court fully and demonstrably resolves the monopoly maintenance finding that the court of appeals sustained.

Underlying the monopoly maintenance claim was proof that Microsoft took actions, among other things, to discourage the development and deployment of rival Web browsers and Java technologies, in an effort to prevent them from becoming middleware threats to the operating system monopoly. The settlement extends the product definition to all manner of present and future middleware products, prohibits in the broadest terms the practices found to be unlawful, deprives Microsoft of the means of disciplining firms that might develop or deploy competing middleware products, and requires disclosure of proprietary interfaces and protocols so that rival firms may create middleware that can compete on a function-by-function basis with Microsoft's integrated products. The prescribed relief is supported by an unprecedented level of enforcement power, including a full-time, on-site, independent compliance team and the power to extend the decree in the event of serious violations. In strict antitrust terms, by any serious reading of the court of appeals ruling, the settlement represents a big win for the government.

Charles A. James is the Assistant Attorney General in charge of the Antitrust Division of the U.S. Department of Justice. The Antitrust Division commenced its case against Microsoft on May 18, 1998. A coalition of 19 states and the District of Columbia, with New York as the lead plaintiff, filed their lawsuit on the same day, and the two cases were consolidated and prosecuted jointly. Nine states, including New York, have joined with the United States in proposing a settlement. The views expressed herein are the author's and relate to the Antitrust Division's case and settlement and do not purport to represent the views of any state plaintiff.

MTC-00030631_1139

The Real *Microsoft* Case

A dose of reality is in order. Microsoft occupies a critical place in the worldwide computer industry. Its proprietary Windows operating system exists as the de facto standard for the entire realm of IBM-compatible personal computers. In rough terms, operating systems perform certain basic computing functions—drawing a box, opening a file, executing print commands, etc. These functions are accessed by software running on the operating system through application programming interfaces (APIs). The operating system is said to "expose" APIs. To facilitate the development of programs that run on the Windows operating systems, Microsoft discloses some, but not all, of those APIs to the software development community. Tens of thousands of software programs are written to the Windows operating system, a fact that has become a seemingly self-perpetuating basis for Microsoft's monopoly over the operating system market. Because computer users want their operating system to be a stable platform for present and future applications programs, new operating systems, whatever their technological merits, have difficulty gaining patronage. This is the "applications barrier to entry."

The Microsoft operating system monopoly, fortified by the applications barrier to entry, is very durable, and gives Microsoft distinct advantages in competing in downstream markets for applications software, hardware, and Internet services. There has never been any serious contention, however, that Microsoft *obtained* its operating system monopoly through unlawful means, but rather that it unlawfully *maintained* it. Thus, under our antitrust laws, the existence of the operating system monopoly is not subject to direct attack and was not challenged in this case.[2]

In 1998, the Antitrust Division, nineteen states, and the District of Columbia commenced their respective antitrust cases against Microsoft.[3] The complaints alleged: (1) that Microsoft engaged in a series of anticompetitive acts to maintain its monopoly position in the market for operating systems designed to run on Intel-compatible personal computers, in violation of Section 2 of the Sherman Act; (2) that Microsoft attempted to monopolize the Web browser market, also in violation of Section 2; (3) that Microsoft illegally tied its Web browser, Internet Explorer (IE), to its operating system, in violation of Section 1; and (4) that Microsoft entered into exclusive dealing arrangements that also violated Section 1. After a full trial on the merits, the district court sustained all claims save for exclusive dealing.[4] The court of appeals, however, narrowed the liability findings, sustaining only the monopoly maintenance claim, but with fewer anticompetitive actions than the district court had found.[5] The court of appeals reversed with respect to eight of the twenty anticompetitive acts the district court had sustained as elements of the monopoly maintenance claim. The court of appeals reversed the attempted monopolization and tying conclusions, remanding the latter claim for further proceedings under the more rigorous rule of reason standard.[6] And, of course, the court of appeals vacated the Final Judgment that had set forth the break-up remedy and interim conduct remedies.[7] In its own words, the court of appeals "drastically altered the District Court's conclusions on liability."[8]

The surviving portion of the case focused primarily on the so-called "browser war" and allegations that Microsoft engaged in various anticompetitive practices to maintain its operating system monopoly. For all of its claimed technological prowess and industry foresight, Microsoft had fallen behind in the race to commercialize Web browser technology. An upstart company called Netscape had beaten the mighty Microsoft to the punch and quickly gained a respectable market share as the preferred technology for navigating the then-burgeoning Internet. More importantly, Netscape proponents were touting the prospect of a new world of Internet computing that would make operating systems less relevant, if not virtually irrelevant. Netscape touted its Web browser as a new category of software that came to be known as "middleware," a form of software that, itself, exposed a broad range of APIs to which software developers could write applications. Assuming that Netscape Navigator could become fairly ubiquitous, that large numbers of developers wrote programs to it, and that Netscape, itself, ran on multiple operating systems, operating systems other than Windows could become viable. In this sense, the browser was a "nascent" threat to the operating system monopoly.

Microsoft took this middleware threat seriously. The trial record disclosed a corporate preoccupation with thwarting Netscape and displacing the Netscape Navigator with IE as the prevailing Web browser in the industry. This campaign featured a host of strong-arm tactics aimed at various computer manufacturers, Internet access providers, and independent software developers. Even the decision to integrate its own browser into the operating system—in effect, giving it away for free—had an element of impeding the growth of Netscape and once was described as taking away Netscape's oxygen. Microsoft went so far as to make it more difficult to remove its browser from Windows in the apparent recognition that computer manufacturers would fear that the presence of two Web browsers on the desktop would cause consumer confusion and prompt expensive service calls.

The government's case against Microsoft focused heavily on the browser war—and a relatively narrow aspect of that war—the consumer's experience the very first time he or she boots up a brand new computer. A consumer with some basic level of computer knowledge and a small amount of effort, could elect to use the Netscape browser. Just like any form of computer software, alternate browsers were available through download and other forms of retail distribution. The underlying assumption of the browser war, however, was that most consumers become wedded to the first products to which they are exposed and those the computer manufacturer makes it easiest to deploy. Thus, desktop place-

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ment and other forms of "first-sighting" were important market movers.

The district court based its monopoly maintenance liability finding on the government's proof that Microsoft had engaged in a series of exclusionary acts. Those acts involved, in sum, the integration of IE into Windows, while closing off access for Netscape; various dealings with original equipment manufacturers, independent software providers, Internet access providers, and Internet hardware providers; efforts to thwart Java technologies; and a course of conduct as a whole.[9] While Judge Jackson had sustained the government on most of the claims, the court of appeals was a bit more selective. It ruled that certain of Microsoft's practices—for example, Microsoft's practice of preventing computer manufacturers from substituting their own user interfaces for the Windows interface supplied by Microsoft—were justified and thus lawful.[10] The court of appeals also explicitly rejected the course of conduct theory.[11] Under that theory, we, in effect, argued that the whole was greater than the sum of the parts—that Microsoft's individual practices, rather than being judged on their individual merits, should be evaluated as part of a grander scheme of monopolization, providing an independent basis for monopolization liability.

Thus, we found ourselves victorious on the monopoly maintenance claim, albeit with less underlying conduct to remedy. The attempted monopolization count was gone and, based on the court of appeals' decision and the need to move to the remedy phase as quickly as possible, we dropped the tying claim. Those two claims had been a direct assault on Microsoft's ability to compete outside of the operating system—in particular, its ability to integrate new functions into Windows. But the court of appeals had made it clear that, albeit with some limits, Microsoft could lawfully integrate new functions into the operating system and use the advantages flowing from its knowledge and design of the operating system to compete in downstream markets. What was left in the case was a series of individual practices directed against competing browser developers and others, which the court of appeals found to be unlawful because of their potential to protect the operating system monopoly. That was the conduct to be remedied; not the existence of the Microsoft operating system monopoly itself and not the prospect that Microsoft might come to dominate other downstream markets for reasons unrelated to its conduct protecting the operating system franchise.

Dropping the Structural Remedy. Having taken the helm of the Antitrust Division just weeks before the court of appeals decision, for me the prior history of the case had to be just that: history. The court of appeals decision was the new reality. It set forth the rules of the game. Judge Jackson's order to separate Microsoft's operating system business from the applications business had received a chilly reception, at best, in the court of appeals decision.[12] By admonishing that a structural remedy would only be appropriate if the government proved a more direct causal connection between Microsoft's exclusionary practices and maintenance of the operating system monopoly (a connection that Judge Jackson said he could not find), it was clear that a structural remedy was not favored.[13] Moreover, even in the absence of the court of appeals' cautionary language about a structural remedy, its adverse conclusions on the tying and attempted monopolization claims undercut any real basis for separating the operating system and applications businesses. After all, the court of appeals declined to hold that Microsoft could not lawfully integrate applications functions into the operating system. Given what was left in the case—essentially a series of heavy-handed contracting practices with computer manufacturers and software developers, unlawful when undertaken to protect the operating system monopoly—a conduct remedy seemed all that could be secured, let alone justified.

Eliminating structure from the remedial picture was also an important tactical issue as we moved into a remedy hearing before a new judge. The new judge obviously would take into account the court of appeals' not-so-subtle message regarding structural relief, and likely would have little patience for some quixotic effort to press for that remedy, even as a mere bargaining chip. Moreover, the question of structural relief would have greatly complicated the remedy phase of the case. Microsoft would have been entitled to raise a raft of issues regarding the impact of such relief. This would have substantially protracted the discovery phase of the remedy proceeding, eliminating any prospect for a quick resolution, either in the district court or otherwise. Even if we had persuaded the trial court to impose structural relief, we would have found ourselves right back before the court of appeals, which already had said that it would review structural relief with considerable skepticism and under stringent legal standards. Finally, from my own personal perspective, the structural remedy that Judge Jackson had ordered, i.e., a break-up into two companies without ongoing line-of-business restrictions—might have been a hollow, short-lived solution. Without the types of continuing line-of-business restrictions found to be hopelessly complicated and regulatory in the AT&T decree, Microsoft easily could have kept its operating system monopoly and reassembled its applications businesses through acquisition and internal development in a matter of years, if not months. Presenting the case for line-of-business restrictions would have been yet another complication. Taking structural relief off the table at the outset of the remedy proceeding before the new judge enabled us to get favorable procedural rulings that were essential to moving quickly to a prompt resolution.

The Conduct Remedy

An antitrust remedy for a Section 2 violation must stop the offending conduct, prevent its recurrence, and restore competition. While prohibiting the exact conduct found to be unlawful in the court of appeals decision would be relatively simple work, addressing the broader question of monopoly maintenance was more difficult. Preventing recurrence must

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involve proactive steps to address conduct of a similar nature. Restoration requires prospective relief to create lost competition and may involve actions to disadvantage the antitrust offender and/or favor its rivals. The relief, however, must have its foundation in the offending conduct. The monopoly maintenance finding, as sustained by the court of appeals, was not a mandate to range broadly across the computer industry purporting to solve unproven problems unrelated to the middleware threat to the operating system. Indeed, Judge Kollar-Kotelly stated in open court that she expected the government's proposed remedy to reflect the fact that portions of the government's case had not been sustained.

At the outset of the remedies proceeding, we stated that our proposed relief would be modeled upon the interim conduct provisions of Judge Jackson's (now-vacated) Final Judgment. Those provisions were "interim" because they were intended to remain in place only during the year in which Microsoft was preparing to be broken into two companies. The government itself had proposed those interim remedies, and thus they provided a base from which to develop appropriate remedies. We were cognizant, however, that those remedies provided relief based on Judge Jackson's liability findings, including the attempted monopolization and tying claims and portions of the monopoly maintenance claim that were not upheld by the appellate court.

In addition, because those remedies had never been subjected to the rigors of an adversarial proceeding, and had been prepared without any meaningful consultation with Microsoft, certain practical issues had never been fully vetted. This was a real danger, because the remedies had to be fully capable of being put into practice; anything else would be an enforcement nightmare. The interim remedies had also been based upon a trial record developed largely in 1998 and 1999. The industry had changed significantly since then. Among other things, by most accounts, Microsoft had essentially won the browser war; relief to revive Netscape Navigator as a middleware threat may have been too little, too late. In addition, the character of potential middleware platforms had largely changed. It is unclear whether another general middleware threat like the browser will ever again emerge. The middleware war of today appears to focus on more specialized types of software, such as instant messaging systems and media players—systems that might be platforms for families of related functions, but whose potential to be a platform for a broad range of applications remains to be seen. Today, one would not necessarily predict that a software developer would write a financial services program, for example, to run on either a messaging system or a media player. Finally, and perhaps most importantly, the operating system world has changed. At the time the case was filed, the browser was designed to sit on top of the operating system like any other application that had to be "opened" manually. In the ensuing years, the technology evolved so that browser functions increasingly were integrated into the operating system and invoked automatically to create a more seamless user experience. This made middleware products easier for consumers to use, but placed greater demands on competitors to create products that could function as seamlessly as Microsoft's.

Enjoining the Unlawful Conduct. There was no question that any proposed Final Judgment had to include prohibitions to enjoin the offending conduct that the district court had found and the court of appeals had sustained. I must note, however, that the affirmative prohibitions contained in the proposed decree go considerably beyond the literal findings of the court of appeals. The decree broadly bans exclusive dealing, gives computer manufacturers extensive control of the desktop and initial boot sequence, and prohibits a broad range of retaliatory conduct. There can be no question that Microsoft must fundamentally change the way in which it deals with computer manufacturers, Internet access providers, software developers, and others under the proposed decree.

The middleware definition was a very complex issue and would have been fought hard in a litigated remedy proceeding. The term has no accepted industry or technical meaning, and one might reasonably distinguish between products that might function as middleware (i.e., an intermediate software program between an operating system and an application) and products that actually might threaten the operating system monopoly. At the time of trial, the term middleware was used to describe software programs that exposed APIs. In today's world, by virtue of the extensive degree to which software programs interact with each other, a very broad range of programs—large and small, simple and complex—expose APIs. Obviously, all software that exposed APIs could not qualify as middleware for purposes of the case.

As middleware is defined in the proposed decree, it captures, in today's market, Internet browsers, e-mail client software, networked audio/video client software, and instant messaging software. On a going forward basis, it also provides guidelines for what types of software will be considered middleware for purposes of the decree. These guidelines are critical because, while it is important that future middleware products be captured by the proposed decree, those products will not necessarily be readily identified as such.

Preventing Recurrence. Having addressed the basic prohibitions, the more formidable tasks of addressing recurrence, restoration, and enforcement confronted us. Because of the critical role Microsoft's Windows operating system plays within the computer industry, the company has at its disposal a broad array of potential means of projecting its will upon manufacturers and developers. Many in the computer industry believe that Microsoft can influence product development and deployment decisions by other firms through a variety of carrots and sticks, and there was evidence in the trial record that Microsoft had used a number of such tactics to impede the emergence of competing Web browsers. By the same token, not all forms of collaboration between Microsoft and other industry participants are anticompetitive, and some actually benefit competition and consumers. To cover the broad range of potential strategies Microsoft might deploy, we

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sought to address the recurrence issue through the broad concepts of non-discrimination and non-retaliation, rather than by simply enumerating a list of specific prohibitions that we can identify today.

Restoring Lost Competition. With regard to restoration, we had to begin from the premise that the middleware threat to the operating system monopoly was a nascent one. It is said that some 70,000 applications currently run on Windows, making the applications barrier to entry quite formidable. At the very peak of our advocacy in the case, unfortunately not even we could hypothesize a point at which so many applications would be written to middleware APIs that there would be a meaningful threat to the Windows operating system, and that fact was noted in the court of appeals decision. Thus, the task in the restoration aspect of the decree was to restore the potentiality of middleware. As had been the case in the mediation before Judge Posner and in Judge Jackson's order, our preferred approach was to ensure that middleware developers had access to the technical information necessary to create middleware programs that could compete with Microsoft in a meaningful way. This would have been a difficult undertaking in the earliest phases of the case, and it became even more difficult with the evolution of operating systems toward more integrated and seamless functionality.

API disclosure apparently had been a very difficult obstacle to resolution of the case at every stage. Press reports of the mediation before Judge Posner indicated that the scope of API disclosure was the sticking point that doomed earlier efforts to settle. There had never been any allegation in the case that Windows was an essential facility, the proprietary technology for which had to be openly shared in the industry. Further, failure to disclose APIs sufficient to create interoperable software was not a critical underpinning of the case; after all, we argued successfully that the 70,000 applications written to Windows contributed to the strength of the monopoly. That is not to say that disclosure had not been used selectively by Microsoft; the government showed that Microsoft had sought agreements with middleware developers to refrain from developing competing products in exchange for preferential access to proprietary technical information. Such agreements, however, would have been facially unlawful, without regard to Microsoft having some inherent legal obligation to disclose APIs. Technical support, in that sense, was merely consideration for an otherwise unlawful agreement.

There is a duality in Microsoft's position on API disclosure. The company frequently argues that it has strong incentives to make broad disclosures of APIs and other technical information because it wants developers to write applications programs to its operating system. Nonetheless, the company is forced to acknowledge that many important Windows functions rely upon undisclosed APIs. Moreover, it seemed fairly clear that Microsoft's reluctance to disclose those APIs was based upon more than a concern about the burden of administering the disclosure regimen. The simple fact is that certain of the undisclosed APIs relate to cutting-edge functions and applications, many of them integrated deeply into the operating system, that could be meaningful points of differentiation between Windows middleware products and those offered by third parties. Thus, we believed that we were on strong legal ground in seeking to require Microsoft to disclose its undisclosed APIs as a means of restoring competition in the middleware industry.

The decree's provisions for API disclosure will be critical in enabling independent developers to match Windows' functionality in their middleware products. Simply stated, if Microsoft middleware products rely on an API, that API must be disclosed. API disclosure of this type has become all the more critical as the operating system has evolved to include more deeply integrated functions that are invoked automatically in connection with other applications. But for detailed API disclosure, many middleware functions offered in third-party software would be more difficult to implement than Microsoft's integrated functions. Independent middleware vendors also will be aided by the decree's provisions that require Microsoft to create and preserve "default" settings, such that certain of Microsoft's integrated middleware functions will not be able to over-ride the selection of a third-party middleware product. This is yet another respect in which changes in the technology required us to go beyond the relief contemplated in Judge Jackson's order. By giving middleware developers the means of creating fully competitive products, requiring the creation of add/delete functionality that will make it easier for computer manufacturers and users to replace Microsoft middleware functionality with independently developed middleware, and making it absolutely clear that computer manufacturers can, in fact, replace Microsoft middleware, the decree will do as much as possible to restore the nascent threat to the operating system monopoly that browsers once represented.

The disclosure of communications protocols for servers was another matter entirely. Very clearly this was a by-product of the negotiated resolution of the case that would have been highly contentious and by no means a certainty had the remedy been fully litigated. In recent years, Microsoft has moved aggressively into the network server market, competing with firms, such as IBM, Novell, and others. Servers tend to communicate through fairly standard communications protocols. Nonetheless, all server manufacturers have implemented their own proprietary communications technologies, working in tandem with the standard protocols, that each server line employs to differentiate itself from other brands and models in terms of features and performance. In network computing, these proprietary technologies are implemented through software code residing at both ends of the communications link, i.e., on the desktop operating system or "client" and on the server itself. Anyone who has ever worked in a network computing environment is familiar with the process of the network administrator loading new software in the form of annoying updates, downloads and overnight system

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changes. While other server manufacturers must load all of their client software independently, Microsoft ships some of its client-server interoperability technology on Windows itself.

Competing server manufacturers complain that Microsoft has an inherent advantage in server competition in that it has a superior knowledge of the operating system and possesses the ability to embed within the operating system secret technology that gives its servers more features and better performance than servers offered by others. Although these claims have never been fully discovered or litigated, it seems intuitively correct that Microsoft would behave in this manner. Yet there is a clear body of case law that a vertically integrated firm, even one that is a monopolist, might rationally and lawfully gain a competitive advantage in one market from its strength or monopoly power in another.[14] In other words, there is no legal rule of antitrust law requiring distinct businesses within a single firm to act as though they are complete strangers to each other.

The connection between the "secret sauce" argument in the server market and the monopoly maintenance claim in this case may not be obvious. To establish the connection on even the theoretical level, one must hypothesize a number of circumstances concerning the future economic course of the server market. To use the Berkeley School "econo-phrase," Microsoft's practice of embedding secret technology in the Windows operating system would have to cause the server market to "tip" in its favor, such that competing servers would no longer provide a platform threat to the desktop operating system.

Further, this issue developed primarily since the trial—it was barely raised and never litigated in the proceedings before the district court. Indeed, the word "servers" never appeared in the complaint and was mentioned only a handful of times in the findings of fact—in those instances mostly in the context of discussing the browser as a component in network computing. In fact, the most cogent statement of the server theory appears in a series of proposed findings of fact we submitted that actually were not adopted by Judge Jackson.[15] Undoubtedly, Microsoft would have argued strenuously in the remedy proceeding that server issues had never been litigated in the case and provided no basis for relief.

Notwithstanding any difficulties the government might have faced in pursuing server relief in the remedies proceeding, the potential competitive consequences in this area are substantial. If it is true, as many seem to believe, that server-based applications might be the next important threat to the operating system monopoly, this would be an area in which it is important to stretch for relief, whether or not the issue was fully fleshed-out in the liability phase of the case. The proposed decree, therefore, requires Microsoft to disclose communications protocols embedded in the operating system, but preserves for the company the ability to deploy proprietary communications technology provided separately. Although this does not fully negate Microsoft's inherent advantages as the designer of the operating system, it requires Microsoft to compete as other server manufacturers do by separately providing client-side communications technology.

Enforcement. It has been suggested that no "conduct" remedy could be effective because Microsoft is a defiant company that cannot be trusted to comply with an antitrust decree. Our practice with regard to enforcement, however, is never influenced by the extent to which we "trust" a defendant. Rather, the decree must stand on its own as an enforcement vehicle. The settlement in this case contains some of the most stringent enforcement provisions ever contained in any modern consent decree. In addition to the ordinary prosecutorial access powers, backed up by civil and criminal contempt authority, this decree has two more aggressive features. First, it requires an independent, full-time, on-site compliance team—complete with its own staff and the power to hire consultants—that will monitor compliance with the decree, report violations to the Department, and attempt to resolve technical disputes under the disclosure provisions. The compliance team will have complete access to Microsoft's source code, records, facilities, and personnel. Its dispute resolution responsibilities reflect the recognition that the market will benefit from rapid, consensual resolution of issues, more so than litigation under the Department's contempt powers. The dispute resolution process complements, but does not supplant, ordinary methods of enforcement. Complainants may bring their inquiries directly to the Department if they choose.

The decree also contains a provision under which the term may be extended by up to two years in the event that the court finds serious, systematic violations. Assuming that Microsoft will want to get out from under the decree's affirmative obligations and restrictions as soon as possible, the prospect that it might face an extension of the decree should deter violations and provide an extra incentive to comply. We opted for this three-part compliance regime, not because of the assumption that Microsoft would act in bad faith, but rather because of the inherent complexity of the decree, which seeks to address Microsoft's interactions with firms throughout the computer industry. Under the circumstances, ongoing supervision backed up by tough penalties was in order.

Reaction to the Settlement. In our view, the proposed decree fully remedies the violations upheld in the court of appeals decision. No conceivable remedy could *guarantee* that middleware products will emerge as a palpable threat to the operating system monopoly. However, the decree, if entered, creates an environment in which Microsoft will have to compete on the merits and will be prevented from using anticompetitive means to impede the emergence of competing middleware products. In the short term, computer manufacturers will be able to offer consumers choices with respect to popular middleware programs free of interference from Microsoft. To the extent that the decree prevents Microsoft from unduly influencing the natural propagation of middleware technologies, it will have accomplished an important purpose, whether or not any particular middle-

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ware product ultimately grows into a meaningful threat to the operating system.

Not surprisingly, the settlement has its critics. Some of the criticism, however heartfelt and passionate, can be dismissed as failing to reflect a real appreciation for the underlying law. Generalized claims that Microsoft's operating system monopoly should have been taken away as "punishment," or that the government should have obtained monetary relief, will not be seriously debated in antitrust circles. The remaining critics tend to fall into two categories. The loudest and most vocal critics, understandably, are Microsoft's competitors—some of which hoped the case would bring about a wholesale emasculation of Microsoft, while providing their own companies specific strategic, technological, and financial advantages. A second group, which again includes competitors, raises questions as to whether a remedy of this scope and complexity reasonably can be expected to correct the unlawful conduct in which Microsoft has been found to have engaged. Questions of that nature are entirely appropriate and we hope will be raised and addressed in the Tunney Act process.

The *Microsoft* case is unique in the level at which competitors have sought to assist in and influence the government's liability and remedial determinations. From the very outset of the litigation, virtually every significant player in the computer industry, directly or through coalitions, hired a team of antitrust lawyers (and sometimes lobbyists) to advance their views of the case. Support from competitors was extremely helpful to us during the liability phase, in that it gave the government ready access to discovery materials, technical expertise and other assistance. This support also was helpful in conceptualizing the remedy and testing the likely competitive effects of various remedial approaches.

Nonetheless, the government still had to make judgments based upon its own assessment of the marketplace, rather than solely or even predominantly from the perspective of competitors. Once liability had been established, a sense of entitlement set in among some firms that had rendered assistance. Firms in the industry became very aggressive in pressing for all manner of relief, whether or not it had anything to do with the antitrust liability that had been established.[16] The specter of the Microsoft operating system monopoly overhangs every level of the information technology industry and very clearly imposes serious challenges upon firms seeking to compete in adjacent markets. One can easily hypothesize any number of governmental actions constraining Microsoft or bestowing advantages upon its rivals that might be said to "level the playing field" upon which Microsoft must compete with other firms. The Antitrust Division, however, has no mandate to "regulate" competition divorced from remedying specific antitrust violations. Thus, from a law enforcement perspective, the relief had to be tailored to proven violations; it could not be a laundry list of unrelated requirements competitors might find useful. In this regard, it is useful to consider some of the principal concerns expressed publicly by competitors and others, in light of both the court of appeals decision and the proposed decree.

Probably the single most widely, publicly expressed criticism relates to the questions of product bundling and commingling of software code. Firms in adjacent markets very clearly wanted the decree to restrict, if not prohibit, Microsoft from competing outside of the operating system market. That is one of the reasons that the structural remedy was so popular among competitors. Rules prohibiting Microsoft from integrating products into the operating system would benefit competitors. The court of appeals, however, refused to establish a rule of antitrust law that outlaws Microsoft's integration of new functions or products into the operating system. We had to accept that we had lost on that issue in the context of four separate claims: the contempt proceeding under the 1995 decree, and in the monopoly leveraging, tying, and attempted monopolization claims of this case. Given the manner in which the courts have treated this issue, it is surprising that there has been any suggestion that the settlement is deficient because it does not restrict bundling.

Equally surprising is the public criticism that the proposed decree should have required Microsoft to sell à la carte versions of Windows with the middleware priced separately. As an initial matter, this would have been a remedy most appropriate for the tying claim, rather than for monopoly maintenance. Even more fundamentally, where is the consumer benefit in this relief proposal? Computer manufacturers tout the fact that their products include the Windows operating system, and consumers reasonably expect that a Windows operating system will include the Windows features. The proposed decree provides the computer manufacturer the option of featuring alternative middleware products, which consumers might accept or reject as they see fit. We saw no public benefit in depriving consumers of that choice.

Similar issues have been raised with regard to the commingling of code. At trial, the government challenged Microsoft's actions to prevent removal of its browser—in particular, eliminating the browser from the list of programs that could be removed by the computer manufacturer or end user with the add/remove function, and making it impossible to remove the Microsoft browser without removing related operating system code and thereby losing necessary operating system functions. Our proposed decree addresses both issues by requiring that Microsoft redesign Windows to include an effective add/remove function for all Microsoft middleware products and to permit competing middleware to take on a default status that will override middleware functions Microsoft has integrated into the operating system. In tandem, these provisions provide an unimpeded choice to select an alternative middleware product. We have never read the court of appeals decision with regard to commingling to be an attempt by the court to articulate an affirmative rule of software design under which all commingling would have been prohibited. This aspect of the court's opinion very clearly addressed the subject of consumer choice, which has been

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fully addressed in the proposed decree. Those seeking a broad ban on commingling appear to be seeking to reduce consumer choice, not increase it.

Public critics also express concern that the proposed decree does not address Microsoft's incursions into new markets and services, such as e-commerce, Internet services, or content. They contend that, left unabated, Microsoft will unfairly gain control over those markets from its base in operating systems. Given Microsoft's market power in operating systems, its movement into adjacent markets will almost always merit careful antitrust scrutiny. That said, the rulings in this case provided no basis for attempted monopolization or monopoly leveraging remedies that would proscribe Microsoft actions that do not have the purpose and effect of protecting the operating system monopoly. Once again, with the monopoly maintenance claim as the only surviving basis for relief, the remedy has to focus on middleware or middleware-type threats to the operating system, not the prospect that Microsoft might come to dominate other markets.

It has been reported that critics also claim that the proposed decree is riddled with "loopholes," particularly with respect to carve-outs from the exclusive dealing and nonretaliation provisions. Those carve-outs, which are stated in phraseology borrowed from well-established Supreme Court joint venture law, afford Microsoft a limited ability to engage in collaborative conduct that would be plainly lawful under the established precedents. We can understand why some would prefer that Microsoft be prevented from engaging in any collaborative conduct. Among other things, such relief would constrain Microsoft in its ability to move into new technologies, products, and markets, isolating the company into a world of internal product development. But we never alleged that all of the scores of types of agreements into which Microsoft routinely enters contributed to illegal maintenance of the operating system monopoly. Indeed, many developers actually benefit from their collaborations with Microsoft and the prospect that their products might be commercialized through, or with, Microsoft. Consumers benefit to the extent that such collaborations bring such new products and services to the market. A flat prohibition would have prevented such collaborations without regard to their potential procompetitive benefits. It might also have prevented Microsoft, for example, from offering a promotional allowance in connection with a new product to one developer unless it provided the allowance to all. Requiring Microsoft to provide those allowances to firms that did not even sell the product would have been nonsensical. For these reasons, an absolute ban on collaborative activity would have been overkill under the circumstances of this case.

Many competitors and others in the industry strongly favored a remedy that required Microsoft to disclose its source code in its entirety. There is within the computer science community, particularly among devotees of other platforms, a generalized notion that Microsoft unfairly foists inferior software upon the public by maintaining the protected proprietary quality of its operating system. Proponents of that view believe that innovation would accelerate, and Microsoft itself would be forced to compete on the merits, if Windows could be transformed into an open source code platform.[17]

While competitor demands for access to source code are often stated in terms of interoperability, there is no question that such access would benefit competitors in other ways, as well. Access to the source code would provide competitors free access to Microsoft's programming approaches and innovations, allowing firms to imitate, copy, or clone products and services Microsoft offers.

The proposed decree assures disclosure without providing an easy way for competitors or even hackers to misappropriate intellectual property and trade secrets for themselves. To the extent that the secure facility provided in Judge Jackson's order was to ensure adequate disclosure and documentation under the decree, we elected the effective but less intrusive approach of providing the compliance team, a group of computer science experts, with access to the source code. If a developer believes that there has been a failure of the disclosure regime, the compliance team will be able to determine quickly whether Microsoft has met its obligations under the decree. If it has failed, it may either cure the problem or risk contempt sanctions. There being no basis under the court of appeals decision to order Microsoft to disclose its intellectual property to undermine the operating system monopoly, it would have been a significant stretch to require open access simply to police a restorative provision. Our proposed decree provides an effective mechanism for developers to receive source code assistance, consistent with our remedial goals, without the danger of misappropriation of Microsoft's intellectual property.

With regard to compulsory licensing to computer manufacturers, again, the court of appeals ruling is a constraining factor. Judge Jackson ordered this disclosure upon the assumption that the tying and attempted monopolization decisions had been sustained, providing a basis for separating middleware products from the operating system. Those findings, of course, were reversed by the court of appeals, calling into question whether computer manufacturers could lawfully reconfigure Windows by stripping out Microsoft middleware products in their entirety. Moreover, one would have to question the practicality of having computer manufacturers redesigning Windows for their own purposes. As it is, the proposed decree provides the computer manufacturer considerable control over the Windows desktop at initial boot-up and beyond. Requiring Microsoft to design effective add/delete and default functions into new versions of Windows would seem far superior to inviting computer manufacturers to create do-it-yourself versions. Last, a compulsory licensing regime would have raised many of the same security concerns as the secure facility.

In sum, it is understandable why competitors would want Microsoft to unbundle its integrated products, refrain from all collaborative activity, and widely disseminate its proprietary intellectual property. Those requirements, however, are large-

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ly beyond the scope of the court of appeals decision or otherwise do not advance public goals. The antitrust laws protect competition, not competitors. We believe that the relief we have negotiated fully addresses the legitimate public goals of prohibiting Microsoft's unlawful conduct and restoring competition. ■

[1] United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001).

[2] Even the structural remedy proposed by the government and ordered by Judge Jackson would have permitted Microsoft to retain its operating system monopoly.

[3] United States v. Microsoft Corp., Civil Action No. 98-1232 (D.D.C. filed May 18, 1998); State of New York v. Microsoft Corp., Civil Action No. 98-1233 (D.D.C. filed May 18, 1998).

[4] United States v. Microsoft Corp., 87 F. Supp.2d 30, 56–57 (D.D.C. 2000).

[5] *Microsoft*, 253 F.3d at 50–80.

[6] *Id.* at 96. The Court also held that although if it pursued the tying claim the government had the burden to show an anticompetitive effect in the browser market, it was "precluded from arguing any theory of harm that depends on a precise definition of browsers or barriers to entry . . . ." *Id.* at 95.

[7] *Id.* at 119.

[8] *Id.* at 105.

[9] *Id.* at 58.

[10] *Id.* at 50–80.

[11] *Id.* at 78.

[12] See *id.* at 105–06.

[13] *Id.*

[14] *See, e.g.*, Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263 (2d Cir. 1979).

[15] Plaintiffs' Joint Proposed Findings of Fact—Revised at ¶ 55.

[16] Indeed, the number of requests for meetings with me immediately after my nomination but before my confirmation became so daunting that I adopted the posture of refusing to meet personally with any third parties in the *Microsoft* case, and I have maintained that posture to this day. Third parties had complete access to the staff and my Deputy throughout the process, and I was willing to read any written submission that a third party wished to submit.

[17] For example, in a recent *Washington Post* article, Sun Microsystems is reported to have argued that all of Microsoft's formats and all of its communications protocols should be "turned into open, published standards." *U.S. Settlement Leaves Microsoft More Entrenched*, WASH. POST, Nov. 9, 2001, at E1.

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EXHIBIT 13

TO THE COMMENTS

OF RELPROMAX ANTITRUST INC.

Enron Executives Contributed to Ashcroft Campaigns

By DAN EGGEN
Washington Post Staff Writer

One week before John D. Ashcroft suffered the biggest defeat of his political career, a $25,000 donation arrived at the Ashcroft Victory Committee, one of the Missouri senator's fundraising committees for the 2000 race.

The donor was Kenneth L. Lay, head of a rapidly growing Houston energy company called Enron Corp., whose executives contributed more than $50,000 to Ashcroft's Senate campaign in 1999 and 2000.

The contributions prompted Ashcroft to recuse himself yesterday from a criminal investigation into Enron's collapse by the Justice Department, which he heads as attorney general.

Ashcroft's decision was based on "the totality of the circumstances of the relationship between Enron and the attorney general," and Ashcroft "has not been involved in any aspect of initiating or conducting any investigation involving Enron," the Justice Department said in a statement.

Chief of Staff David Ayres, who ran Ashcroft's failed reelection bid, also will divorce himself from the Enron probe, officials said. In Houston, U.S. Attorney Michael Shelby said his entire office has removed itself from any matter involving Enron because he and other prosecutors have relatives affected by the company's collapse. The Justice Department had named Houston on Wednesday as one of three U.S. attorney's offices that would participate in the investigation.

Ashcroft and his aides have determined that no other top Justice officials in Washington, including several who have played prominent roles in Republican politics, had direct involvement with Enron, officials said.

Deputy Chief of Staff David Israelite and new Communications Director Barbara Comstock came to Justice after working at the Republican National Committee, which received more than $700,000 from Enron and its executives in 1999 and 2000, records show.

"It was determined that all the people [from] RNC, including David and Barbara, had no involvement with Enron," an official said.

The Ashcroft campaign received $57,499 in 1999 and 2000 from Enron and its executives, according to records compiled by the Center for Responsive Politics, a campaign finance watchdog group.

Rep. Henry A. Waxman (D-Calif.), in a letter to Ashcroft yesterday, complained that Lay's $25,000 gift "was many times greater than the maximum allowable contribution by individuals to federal candidates" and said the gift may have "thwarted the intent of election laws."

The Ashcroft Victory Committee, like many similar committees formed by parties and candidates in the last election, was structured to avoid rules that limit individual contributions to $2,000 and bar corporate donations.

The Enron probe will be overseen by Deputy Attorney General Larry Thompson and the Justice Department's criminal division chief, Michael Chertoff, officials said.

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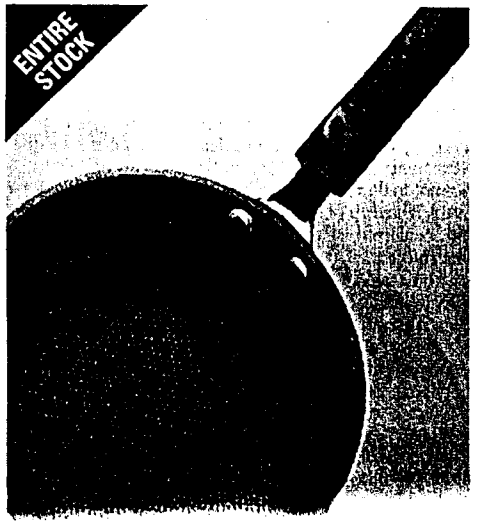

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