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DIRECT TESTIMONY OF FRANKLIN M. FISHER

I. BACKGROUND

1. I am professor of economics at the Massachusetts Institute of Technology, where I have taught for more than 38 years. I am also a director of the National Bureau of Economic Research and the chair of the Middle East Water Project – a project supported by the government of the Netherlands that involves American, Dutch, Israeli, Jordanian, and Palestinian participation. I received my A.B. from Harvard University in 1956, and my Ph.D. in Economics from Harvard University in 1960.

2. I am a fellow and past President of the Econometric Society and for nine years was the editor of that society's journal, *Econometrica*. I am a member of the American Economic Association, from which I received the John Bates Clark Award; a fellow of the American Academy of Arts and Sciences; and a recipient of a John Guggenheim Fellowship.

3. My fields of specialization within economics are industrial organization, microeconomics, and econometrics. I am the author of 15 books and well over 100 articles. In the course of my scholarly research and my consulting work, I have studied issues of competition and monopoly in a large number of industries. I have written extensively in the area of antitrust economics. I have provided expert consultation and testimony in numerous antitrust cases and have testified at trial, in

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deposition, or by affidavit in more than 40 cases in the last 10 years. These cases are listed in my curriculum vitae, which is attached as Appendix A to this testimony.

4. I was for many years IBM's chief economic witness in *US v. IBM* (dismissed, 1982) and associated cases. This work is discussed in two of my books.

5. I have been asked to provide my expert economic opinion about the competitive effects of a collection of Microsoft's actions centered around its Internet browser. As part of my analysis, I have considered transcripts and exhibits from the depositions of Microsoft employees, of employees of other companies in the computer industry, and of others; Microsoft agreements with third parties; internal documents from Microsoft and from others; published reports and data; and other related documents and information. I have also read direct testimony and the trial transcript through December, 1998.

6. New and additional evidence and data have recently been made available, and I understand that more evidence and data may become available. To the extent that new data and evidence are relevant to my opinions, I will, to the extent possible, include them in my analysis.

7. Appendix B contains pages from declarations and C.I.D. depositions I have cited in my report.

II. SUMMARY OF OPINIONS

8. I have been asked to consider four basic economic questions. First, does Microsoft possess monopoly power in the market or markets for personal computer operating systems? Second, has Microsoft maintained its monopoly power by anti-competitive conduct? Third, has Microsoft used its monopoly power in an anti-competitive way to distort competition or achieve monopoly power in markets other than the market or markets for personal computer operating systems? Fourth, has Microsoft engaged in unreasonable restraints of trade?

9. I note at the outset that the answer to the first question is significant in answering each of the remaining three questions. As discussed below, there are several reasons this is so. One important reason is that the effect of certain conduct by a firm depends on whether the enterprise engaging in it has monopoly power. For example, if an enterprise without monopoly power engages in tying (or other restrictive practices), customers who would prefer not to purchase the tied combination can decline to buy from the company with the tying enterprise. If there is effective competition in the market for the tying product, and if there is a separate demand for a component of a tied combination sufficient to make it efficient to supply that component separately, I would expect competitors to offer both the tying and the tied components of the combination separately. However, if an enterprise that is engaged in tying possesses monopoly power over the tying product, customers will not have realistic competitive alternatives and will be unable practicably to procure the tying product separate from the combination. Moreover, if the enterprise engaged in tying

both has monopoly power over the tying product and ties a sufficient quantity of the tied product so that there is no longer sufficient demand to support viable alternative suppliers of the tied product, the enterprise engaged in tying will achieve a dominant position in the supply of the tied product as well. (If there are significant barriers to entry in the market for the tied product, that dominant position will result in the enterprise's achieving monopoly power over the tied product also.)

10. Similarly, analyzing the effect of conduct on either maintaining existing monopoly power or on securing monopoly power where such power does not exist may be useful in assessing whether the conduct is anti-competitive or exclusionary. This is not, of course, to say that all conduct which secures or maintains monopoly power is anti-competitive. Certain conduct (e.g., non-predatory price competition or product improvements) is so important to the competitive process, and the potential costs of interference are so high, that it is considered competitive (and not anti-competitive) even where it results in securing or maintaining a monopoly. However, certain conduct that may be benign (or at least tolerated) if it does not maintain or create monopoly power, is clearly recognized to be anti-competitive where it has such an effect.

11. For example, it is sometimes asserted that tying even by a monopolistic entity will not have an economically inefficient effect, since the monopolist only has a given quantum of monopoly power and it is irrelevant whether that power is exercised directly by charging a profit-maximizing price for the monopoly product or indirectly by requiring customers to take tied products that they would not otherwise have acquired

from the monopolist. Without here specifying all of the reasons that general assertion is wrong, it is apparent that the assertion does not apply where the act of tying maintains an existing monopoly or secures a new monopoly (or to put it more generally, where the act of tying increases the monopoly power the enterprise would otherwise have possessed as compared with merely exploiting an unchanging, unthreatened quantum of monopoly power). (There may well be significant economic and social costs of permitting a monopolist to exploit a given quantum of monopoly power even if that exploitation neither protects an existing monopoly nor is likely to result in a new monopoly. For the reasons indicated above and discussed in more detail below, it is not necessary to address those costs in the present case.)

12. As another example, there is an arguable case for prohibiting enterprises from engaging in predatory pricing or predatory product design even if the enterprise does not have monopoly power and has no reasonable prospect of obtaining it. However, the limited (and, perhaps, speculative) cost of permitting predatory behavior under those circumstances coupled with the costs of possible misdiagnosis lead economists generally to favor non-intervention in cases of predatory pricing or product design in the absence of monopoly power, or the reasonable prospect of monopoly power.¹ By contrast, where predatory pricing or product design can be reasonably

¹ On the one hand, predatory pricing or predatory product design in a competitive market may be thought to benefit consumers by offering them lower prices (even if only temporarily) or an alternative product choice. On the other hand, where barriers to entry (or re-entry) exist, predatory pricing and product design can distort and reduce competition short of monopoly power. Moreover, the danger of misdiagnosis is a two-edged sword; if a finding of actual or prospective monopoly power is required to prohibit predatory behavior, there is the risk that a fact finder will understate the existence or risk of such power.

expected to maintain existing monopoly power, or to obtain monopoly power in a new market, the economic costs of non-intervention are too high to tolerate.

13. In that context, I make one more general observation before turning to the answers to the four specific questions I have been asked to address. Because of the central and essential role the personal computer (PC) operating system plays (and is expected to play) in both commercial and consumer endeavors (including access to the Internet and the World Wide Web), the costs of improperly maintaining monopoly power over the operating system, and the danger that Microsoft's existing monopoly power will be used to monopolize other critical markets that are linked to the operating system, are very great.

14. For example, if Internet browsers and/or Java in fact threaten eventually to undermine Microsoft's operating system monopoly by eroding the applications programming barrier to entry that protects that monopoly, the economic cost of permitting Microsoft to rebuild that barrier to entry by stifling non-Microsoft browsers and Java will be substantial.

15. Similarly, if Microsoft is permitted to use its existing monopoly power over PC operating systems to monopolize the market for Internet browsers (and, thereby, to put itself in the position to control and ultimately exact a monopoly toll for efficient access to the Internet), the economic costs to consumers and the economy will again be substantial.

16. I now turn to a summary of my basic conclusions.

17. Microsoft has achieved monopoly power in the market for operating systems for Intel-compatible desktop personal computers.

18. Microsoft has foreseen the possibility that the dominant position of its Windows operating system will be eroded by Internet browsers and by Java, which are capable of supporting software applications that are operating-system independent.

19. Microsoft has taken anti-competitive actions to exclude competition in Internet browsers in order to protect the current dominance of its Windows operating system. Microsoft's conduct includes: anti-competitive agreements with PC manufacturers that require the manufacturers to acquire Microsoft's Internet browser as a condition of acquiring Microsoft's Windows operating system, that hinder the manufacturers' promotion of competing browsers, and that restrain PC manufacturers from removing Microsoft's browser or substituting an alternative browser; the predatory pricing and distribution of Microsoft's browser; and anti-competitive and exclusionary agreements with Online Services (OLSs), Internet Service Providers (ISPs), Internet Content Providers (ICPs), and others. Taken together, Microsoft's actions as to browsers are not profit-maximizing in themselves but are profitable only because of their adverse effects on competition.

20. Microsoft has also taken anti-competitive actions to restrain the use and availability of the Java technology in order to protect the current dominance of the Windows operating system. Further, Microsoft has engaged in a number of anti-competitive acts and solicitations designed to convince other firms not to compete against Microsoft in platform-level software.

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21. Microsoft is using its monopoly power over PC operating systems to secure monopoly power over Internet browsers.

22. As we shall see in more detail, Microsoft's conduct has created, preserved, and increased barriers to entry into both the PC operating system market and the Internet browser market. Microsoft's conduct to create, preserve, and increase barriers to entry includes:

- a. Tying its browser to the operating system, thereby requiring companies to enter successfully the already monopolized operating system market in order to compete successfully with Microsoft in supplying browsers and thus severely hampering Netscape in browser competition;
- b. Excluding browser competitors from the most efficient channels of distribution, thereby requiring competitors to use more costly and less efficient channels;
- c. Entering into agreements requiring original equipment manufacturers (OEMs) to not remove Microsoft's browser;
- d. Entering into agreements to boycott or disfavor Netscape and other browsers (including agreements not to promote, distribute, use, or pay for Netscape's browser — or to do so only on less favored terms), thereby further excluding competition;

- e. Giving its browser away for free (and stating it would do so “forever”), thereby depriving competitors of both the resources and the incentives to continue in, or enter into, the browser market.

23. The principal effect of Microsoft’s anti-competitive conduct is the maintenance of Microsoft’s operating systems monopoly. If Microsoft’s conduct is not checked, it is very likely to create a world in which entry into browsers is difficult or impossible (partially as a result of network effects). In that world, platforms that do not use a Microsoft standard will never prosper, and a critical opportunity for innovation that reduces or eliminates Microsoft’s power will have been lost.

24. Further, if Microsoft is successful in its anti-competitive actions, that success will serve as a disincentive to other firms to innovate in areas that Microsoft may stake out as its own property. If software developers believe that Microsoft will engage in anti-competitive acts to impede any innovation that threatens its monopoly, they will have substantially reduced incentives to innovate in competition with Microsoft. As a result, the range of software products from which consumers can choose will be limited, ultimately further reducing consumer welfare.

III. THE ECONOMICS OF COMPETITION AND MONOPOLY

25. It is important at the outset to distinguish the features of competition from those of monopoly. Under competition, any attempt by a firm to restrict output (or reduce quality) and to charge supra-normal prices will be defeated, as other firms offer lower prices or higher quality to attract customers. The business of the firms that do

not offer lower prices or superior products will be bid away, and customers will benefit. In monopoly, by contrast, such beneficial effects will not occur, or will occur only to a significantly more limited extent. A monopolist can charge supra-competitive prices because the constraints imposed by rivals are loose and ineffective.

26. Economists use the term “market power” to refer to a departure from conditions of competition. Market power to a seller is the ability profitably to maintain prices above competitive levels.

27. Market power is a matter of degree. The possession of a small degree of market power is common in the real world. For example, a corner grocery store may possess a small degree of market power. When present only to a small degree, market power should not be of antitrust concern.

28. Monopoly power is a substantial degree of market power. While a firm with a slight degree of market power may find it profitable to charge supra-normal prices for a short time or to charge prices that are only slightly supra-normal, a firm with monopoly power will find it profitable (a) to charge a price significantly in excess of competitive levels and (b) to do so over a significant period of time. I believe this definition is consistent with the oft-cited legal definition of monopoly power as “the power to control prices or exclude competition.”

29. Success achieved through legitimate means such as innovation, superior marketing, or historical accident may naturally give rise to market power or even monopoly power. Whether or not this is true of software (and, in particular, of PC

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operating systems), the very fact that the software industry is so innovative, together with its immense and growing importance in the American economy, makes it crucial that success be restricted to success on the merits, and that monopoly power be confined to that which results from that success. Even a firm that has attained monopoly power through legitimate means and natural economic effects must not be permitted to retain or extend that power through artificial, anti-competitive means. (Because of my conclusion that Microsoft has improperly maintained its PC operating system monopoly and attempted to monopolize the Internet browser market, it has not been necessary for me to examine the allegations of anti-competitive actions by Microsoft that underlie the earlier monopolization case against Microsoft.)

30. An analysis of competition and monopoly as applied to this case requires discussion of the following points:

- a. How does one identify monopoly power?
- b. What is the role of network effects?
- c. What is an anti-competitive act?
- d. How might a firm with monopoly power in a particular market use that power to gain advantages in other markets in ways that are anti-competitive and serve to protect or extend the firm's power?

31. After discussing these points, I proceed to apply them to an analysis of Microsoft's situation and behavior.

A. How Does One Identify Monopoly Power?

32. As the preceding discussion suggests, the hallmark of monopoly power is the absence or ineffectiveness of competitive constraints on price, output, product decisions, and quality. The issue of monopoly power is conventionally addressed by defining “the relevant market” and assessing shares in that market. A large share of a properly defined market is an indication of a firm’s ability successfully to raise price. Because its purpose is the identification of monopoly power, if it exists, the “relevant market” should include all those products that reasonably serve to constrain the behavior of the alleged monopolist. Such constraints arise from three sources: substitution by consumers to other products (demand substitutability), substitution by producers to other products (supply substitutability), and entry of new productive capacity. As market power is a matter of degree, so too is the extent to which each of these factors imposes a constraint.

33. Demand substitutability refers to the ease with which customers, faced with an attempt by the alleged monopolist to exercise power and earn supra-normal profits, could turn to products other than those of the alleged monopolist.

34. Supply substitutability refers to the ease with which firms that do not currently supply demand-substitutable products could do so by reallocating their existing productive capacity in the event of an attempt by the alleged monopolist to exercise power and earn supra-normal profits.

35. An example may help to clarify what is involved in the consideration of supply substitutability. The bottoms of boats used in seawater need to be painted with a copper-based, anti-fouling paint (to protect against barnacles). Suppose that there were only a single manufacturer of such paint but that it were very easy for other paint manufacturers to produce and market anti-fouling paint. Clearly, the single current producer of anti-fouling paint does not possess monopoly power. One could come to this conclusion even if one found that this firm had a market share of a hundred percent, observing that the hundred percent share of the alleged monopolist was meaningless because of high supply substitutability. But such a share also could lead to an erroneous inference of monopoly power from market share.

36. Market shares are useful indicators of market power only if they reflect supply substitutability as well as demand substitutability. This can be accomplished in the anti-fouling paint example either by defining “the relevant market” as all paint, or by defining “the relevant market” as just anti-fouling paint, but assigning shares in that market to paint manufacturers that do not currently sell such paint based on their capacity to sell it. Obviously, there will often be no bright line between defining products as in the market on the basis of supply substitutability and leaving them out while remembering that the firms that do not produce them can enter fairly readily. But the lack of such a clear line will not matter, so long as one remembers that market definition need not be precise and that its purpose is to assist in analyzing the constraints on the behavior of the alleged monopolist.

37. These principles have long been recognized. Since 1982, the Department of Justice's Merger Guidelines have approached market definition by asking in part whether a single, profit-maximizing firm controlling a candidate market could raise price by a significant amount (i.e., 5 percent), for a non-negligible time period. (U.S. Department of Justice, Merger Guidelines § I (1982), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶13,102; U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines § 1.0 (1992), *reprinted in* 4 Trade Reg. Rep. (CCH) ¶13,104. The Merger Guidelines generally consider raising price from the prevailing level, because the issue presented by a merger case typically is whether the proposed merger would create or enhance market power. When the issue is instead whether a particular firm possesses market power or monopoly power, it is necessary to consider raising price from the competitive level.)

38. Having defined an appropriate market, one then goes on to consider market share and the ability of firms not in the market to enter, in the event of an attempt by the alleged monopolist to earn supra-normal profits through an exercise of power. As noted above, a key distinguishing feature of monopoly power is its durability. If the attempt by a firm to earn supra-normal profits by pricing above competitive levels would be rapidly frustrated by entry, that firm does not possess monopoly power.

39. Economists generally refer to factors that would prevent entry in the face of supra-normal profits as "barriers to entry." (Such factors also limit expansion of existing firms. I use the term "barriers to entry" to refer both to limits on entry of new firms and to limits on the expansion of existing firms.) Where there are significant

barriers to entry, monopoly power can be present. Where there are no barriers or barriers are low, monopoly power cannot exist.

B. What Is the Role of Network Effects?

40. The barriers to entry in the present case include two phenomena known respectively as economies of scale and network effects.

41. An economy of scale is a phenomenon in which the average cost of production falls as more units of a product are produced. The software business exhibits substantial economies of scale, because most of the costs of software production come in the creation of the software and are independent of the number of copies that are produced.

42. A network effect is a phenomenon in which the attractiveness of a product to customers increases with the use of that product by others. This means, for example, that the fact that many applications are written for a given operating system and cannot easily run on the other operating systems will make that operating system more attractive to users — a network effect. (This may be reinforced by other network effects related to the operating system and applications — the desirability of using a common word-processing system, for example.)

43. Where network effects are present, a firm that gains a large share of the market, whether through innovation, marketing skill, historical accident, or any other means, may thereby gain monopoly power. This is because it will prove increasingly difficult for other firms to persuade customers to buy their products in the presence of

a product that is widely used. The firm with a large share may then be able to charge high prices or slow down innovation without having its business bid away.

44. Such a circumstance can occur “naturally” in the sense that if network effects are sufficiently strong, a firm may acquire monopoly power without engaging in anti-competitive conduct. However, the fact that the successful firm has acquired monopoly power with a “natural” barrier to entry does not justify its taking anti-competitive acts to extend that power to another market or, in particular, its engaging in anti-competitive acts that serve to buttress and protect its power in the original market.

45. In the absence of anti-competitive conduct, market forces and developments can erode monopoly power based solely on network effects. This is in fact why Microsoft felt it necessary to take the actions discussed below with respect to Java and internet browsers.

C. What Is an Anti-Competitive Act?

46. Clearly, it is important to understand what an “anti-competitive act” is in the context of this case. In the case of a single firm, anti-competitive acts typically involve the taking of measures that are more restrictive of competition than necessary. When this involves actions that would not be profitable without their effect on competition, those actions can be called “predatory.” (What is under discussion here are anti-competitive acts by a single firm. I am not discussing agreements, such as the division of markets, between two firms.)

47. This definition of a predatory anti-competitive act can be spelled out in two parts. The first part is deceptively simple: A predatory anti-competitive act is an act that is not expected to be profitable in the long run without accounting for the supra-normal profits that can be earned because of the adverse effects on competition.

48. The second part of the definition is as follows. A predatory anti-competitive act is one that *is* expected to be profitable in the long run *only* when taking into account the supra-normal profits to be earned because of the adverse effects on competition.

49. Some discussion is now in order. First, what matters is what is expected (or can reasonably be expected) at the time the action in question is taken. In an uncertain world, firms will often take actions that turn out to be unprofitable. Hence, the second part of the definition is useful to distinguish a predatory anti-competitive act from one that merely turns out to lose money *ex post*.

50. Second, in effect, a predatory anti-competitive act is one that involves a deliberate sacrifice of profit in order to secure or protect monopoly power. To understand the nature of this sacrifice, it is important to understand the concept of “opportunity cost.”

51. Opportunity cost is the cost of foregoing an opportunity. Suppose, for example, that a certain manufacturing firm also owns the land on which its plant is situated. Suppose further that the land involved is favorably situated and would, if sold or rented, command a high price. The manufacturing firm that chooses to use the land

itself does not, in an economic sense, obtain it for free. In so choosing, it incurs an *opportunity cost* equal to the amount it could have gotten by leasing the land to others. In considering its manufacturing business, such a firm will make the correct profit calculation only if it treats that opportunity cost as a real cost to its manufacturing business.

52. A second example is even more common. Firms that own their own plant and equipment are not profitable in terms of economics unless they earn an amount sufficient to return to their investors what their capital could earn in alternative uses. For example, a firm with \$100 million in invested capital that earns \$100 over current operating costs is, nevertheless, an economically unprofitable firm. Its invested capital could earn far more than that if merely invested in government securities. The correct calculation of economic profits requires treating as a cost what the invested capital could earn on the outside (at comparable risk). This is an opportunity cost. It is universally accepted in economic analysis to be a true cost. The firm in this example is incurring economic losses. If those losses continue, the firm will wish to leave the business, since the firm is not profitable.

53. To return to the analysis of predatory anti-competitive acts, a firm that takes an action not expected to be profit-maximizing, save for its effects on competition, is sacrificing a profit regardless of how the results are reported on its books. Such a firm is using its assets in a way that incurs an opportunity cost — a sacrifice of profits that could have been made had the firm taken a profit-maximizing action. If the firm does this in order to earn later supra-normal profits dependent on the effects of its actions

on competition, then that firm has taken an action that is not profitable except for those effects.

54. The standard tests of predatory anti-competitive acts in the literature are not at odds with the definition that I have given. Often, they are attempts to make that definition operational in the form of relatively simple tests. The well-known Areeda-Turner article on predatory pricing, for example, takes essentially the same view as do I.² It ends up with a simple test for a single-product firm in terms of price and average variable cost, but that test is an important application of the general principle. A predatory anti-competitive act is one that is deliberately not profit-maximizing, save for the supra-normal profits to be earned because of the effects on competition. With opportunity costs properly understood, this is the same thing as an act that is deliberately unprofitable, save for the supra-normal profits to be earned because of the effects on competition.

D. Extending and Protecting Monopoly

55. A firm with monopoly power may choose to exercise that power in ways other than by immediately charging monopoly prices. In particular, such a firm, even while earning supra-normal profits in a given market, may choose to exercise its power to gain an advantage or even a monopoly in a second market. It is important to understand the circumstances under which such an action can have anti-competitive consequences.

² Phillip E. Areeda and Donald F. Turner. *Predatory Pricing and Related Practices under Section 2 of the Sherman Act*, 88 Harvard L. Review 697- 733 (1975). My analysis here concerns predatory anti-

56. Suppose that product A is used to make product B and begin by supposing that such use involves fixed proportions; that is, a fixed amount of A must be used to make each unit of B. In such a case it might appear that the A monopolist has nothing to gain by extending its monopoly into B. But such an appearance would be illusory because there are circumstances in which the extension of the A monopoly into the market for B could enable the original A monopolist to garner additional supra-competitive profits. For example, if A has other uses than the production of B, then the charging of a high price for A risks losing customers for those other uses. The monopolist may be able to do better by charging a relatively low, uniform price for A and ensuring that it is the only source for B. (This is an example of the classic “metering” case in which the monopolist of A and B price discriminates, charging a low price for A to keep the business of highly price-responsive consumers of A, and extracts additional profit from less price-responsive users of A and B together by charging a high price for B.)

57. Suppose, alternatively, that while A is used to make B, it is not used in fixed proportions, so that the amount of A per unit of B can be varied. In such a case, the A monopolist may very well be able to do better by becoming a B monopolist than by simply charging a high price for A. In effect, a monopolist may be able to use its power in A to organize the market in B, creating a new monopoly there and obtaining additional monopoly profits.

competitive acts generally. The Areeda-Turner article discusses predatory pricing, which is merely one type of predatory anti-competitive act.

58. Another possibility is that by extending its monopoly into the market for B, the original monopolist may be in a position to earn supra-competitive profits in related markets in which B is used as an input.

59. Beyond all this, there is another very important possibility. If extending a monopolist's power from A to B can prevent others from entering A, then such an action will serve to maintain the A monopolist's original power. This could happen as follows. Suppose firms that produce B learn technology or know-how or gain access to customers that assist them in producing (or selling) A. Or suppose that B could be used by potential competitors of A to overcome barriers to entry in the supply of A. In such cases, and others, gaining control of the B business can create a barrier to entry in the A market.

60. Indeed, such an example is directly on point for the present case. Suppose that firms can somehow use B to facilitate the creation of a substitute for A. Then the A monopolist will gain from keeping or driving firms out of the production of B. *If it does so through acts that are not profitable save for the preservation of the A monopoly, then those acts are predatory and anti-competitive.*

61. In general, extending one monopoly to encompass a second market can be anti-competitive under either of two circumstances. The first such circumstance is one in which a firm uses its power in one market to organize a second market, permitting the earning of supra-normal profits that would not otherwise be available. The second circumstance is one in which the extension of power to a second market serves to

protect monopoly power in the first market by inhibiting entry. As I shall explain, both circumstances are present here.

IV. ECONOMIC ANALYSIS OF MICROSOFT'S ACTIONS

A. Market Power

1. Personal Computer Operating Systems

62. Microsoft possesses monopoly power in the market for operating systems for Intel-compatible desktop personal computers. There are no reasonable substitutes for Microsoft's Windows operating systems for Intel-compatible desktop PCs. Operating systems for non-Intel-based computers are not a reasonable substitute for Microsoft's Windows operating system.

63. As numerous representatives from personal computer OEMs have testified, OEMs do not believe they have any alternative to the acquisition and installation of Microsoft's Windows operating system. For example:

- (i) John Romano, Hewlett-Packard Operations Manager for the Home Products Division in Asia Pacific, testified:

“Q: Is it your view as we sit here today that there is no choice but Microsoft for operating systems with regard to the Pavilion line?”

A: Absolutely there's no choice.” (John Romano 4/13/98 Dep. Tr. 50.) (This testimony and certain other testimony to which I refer, is collected in Appendix B to this testimony.)

- (ii) Bart Brown, Gateway Vice President of Direct Marketing, testified:

“Q: So in order for Gateway to remain competitive in the personal computer market, it's your opinion that it is necessary to preinstall

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Windows 98 on its personal computers when Windows 98 is released?

A: That is my opinion.

Q: If Windows 98 were to increase in price 10 percent, would that affect your opinion about whether Windows 98 was necessary to remain competitive in the PC market?

A: No.” (Bart Brown 3/5/98 Dep. Tr. 10-11.)

(iii) James Von Holle, Director of Software and the Global Products Group at Gateway, testified that the Windows operating system is “required.” For the market Gateway serves, Windows is “...essentially the de facto standard” and it is probably “...used by over 90 percent of the people using desktop computers.” (James Von Holle 9/19/97 Dep. Tr. 12-13.)

(iv) Frank Santos, R&D Section Manager for Hardware and Software for the Pavilion product line at Hewlett-Packard, testified:

“Q: Okay. Currently you load Windows — some version of Windows 95 on a hundred percent of the Pavilion machines shipping?”

A: That’s correct.

Q: Okay. Why is that?

A: It’s a requirement for our business.

....

Q: In the last few years has HP considered any other operating systems for its Pavilion machines?

A: No.

Q: Why not?

A: Because we don’t know if any other — because there isn’t any out there.” (Frank Santos 4/13/98 Dep. Tr. 7-8.)

(v) Webb McKinney, Hewlett-Packard General Manager of the Home Products Division, which is responsible for the Pavilion product line of home computers, testified:

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“Q: Do you see any commercially viable alternative for Hewlett-Packard to Windows 98 today?

A: No.

Q: Once Windows 98 is released, will Windows 95 be a commercially feasible alternative?

A: Only for a short period of time.

Q: Why is that?

A: Because ... our customers will demand that we have Windows 98 on our machines, so Windows 95 will be the old — be viewed as the old technology.” (Webb McKinney 3/13/98 Dep. Tr. 11-12.)

(vi) Penny Nash, Gateway Associate Business Manager in supply management handling the Microsoft account, testified:

“Q: If Gateway were to stop licensing Microsoft operating systems, what alternatives would Gateway have with respect to shipping its computers?

A: We wouldn’t have any due to that Windows 95 currently has approximately 85 to 90 percent market share. And any other operating system would not provide the customer the operating systems that are in the field today. It would be suicide for Gateway to try and do otherwise.” (Penny Nash 11/18/97 Dep. Tr. 5-6.)

(vii) Richard T. Brownrigg, Chief Engineer for Internet Initiatives at Gateway, testified:

“Q: Is it fair to say that with respect to the market that Gateway markets its computers into, the Microsoft operating systems are the only commercially feasible alternatives for the computers that it ships?

A: Yes.” (Richard Brownrigg 3/5/98 Dep. Tr. 8.)

(viii) Eric Browning, Department Manager for Product Enhancement at Micron Electronics, declared that being “able to license and distribute Windows 95 is essential to Micron’s business because Micron’s customers expect an operating system to be preinstalled on the computer they purchase, and because they overwhelmingly expect that

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operating system to be Windows 95.” (Eric Browning 10/14/97 Decl. ¶4.)

- (ix) Jon Kies, Senior Product Manager for Versa notebooks at Packard Bell NEC, testified:

“Q: And do you know why NEC has not evaluated preinstalling a non-Windows operating system on its Versa line?

A: Lack of market demand.

Q: What do you mean by that?

A: The Windows product currently owns 95 percent of the market share for personal computers. We need to stay focussed on the large target of the market as opposed to looking at niche.” (Jon Kies 4/23/98 Dep. Tr. 8.)

- (x) Finally, Stephen Decker, Director of Software Procurement at Compaq, stated that Windows is “the only choice,” and that he is not aware of any commercially viable alternatives. (Stephen Decker 10/17/97 Dep. Tr. 11-12.)

64. Microsoft’s share of personal computer operating systems is very high and has remained stable over time. Microsoft’s worldwide share of shipments of Intel-based operating systems has been approximately 90 percent or more in recent years. (See, e.g., Pl. Ex. 1.) Even if operating systems for non-Intel-based computers are included in the market definition, Microsoft’s share is still very high and stable.

65. Microsoft’s high market share is an indication that it possesses monopoly power. The analysis of barriers to entry confirms that monopoly power exists.

66. Operating systems are characterized by network effects, and all software is characterized by economies of scale. Users want the operating system that will permit them to run all the applications programs they want to use; developers tend to write applications for the most popular operating system; and applications software written

for a specific operating system cannot run on a different operating system without extensive and costly modifications or add-ons. (Operating systems provide application programming interfaces (APIs) through which applications interact with the operating system and through the operating system with the computer hardware. Applications developers must write their programs to interact with a particular operating system's APIs. The time and expense of then "porting" the application to a different operating system can be substantial. An API set to which applications may be written is often referred to in the industry as a "platform.")

67. There are other network effects as well. For example, the presence of a common interface may enable firms to avoid training costs when personnel are moved within the firm or new personnel are hired from outside. This gives firms an incentive to have the same user interface throughout its own computers and the same interface that is widely used by other firms. Other network effects include the ease of exchanging files and the opportunity to learn from others. According to Jon Kies of Packard Bell NEC, his customer base "is very concerned about training and standardization. They prefer to standardize on a single interface and not have to retrain any of their end users to learn a new interface they are very loath to change anything in the interface." (Jon Kies 9/11/98 Dep. Tr. 31-32.)

68. As discussed above, there is nothing inherently anti-competitive about network effects. However, to the extent that anti-competitive conduct by Microsoft exists, network effects increase the risk that such conduct will further entrench Microsoft's monopoly.

69. The existence of network effects also implies that the effect of anti-competitive contracts or conduct will not be dissipated merely by terminating the anti-competitive contracts or stopping the anti-competitive conduct.

70. As the result of economies of scale and network effects, Microsoft's high market share leads to more applications being written for its operating system, which reinforces and increases Microsoft's market share, which in turn leads to still more applications being written for Windows than for other operating systems, and so on. This in turn supports the conclusion, also supported by Microsoft's internal documents and other evidence, that this share is not likely to be eroded by new entry as long as the applications programming barrier to entry remains strong.

71. There is abundant document and deposition testimony on the importance of network effects, scale economies, and the applications programming barrier to entry.

For example:

- (i) According to Ron Rasmussen, Vice President of the Volume Systems Group of SCO, "nobody buys an operating system for an operating system. They buy the application." His testimony continued:

"Q: How does the success or failure or penetration of a particular operating system affect whether a third party is likely to write an application for that operating system?

A: All the application vendors look at market share and the cost/benefit analysis of providing that application on any operating system, so if it costs them more than they believe they're going to get in revenue or if they believe their revenue is just a trade from one operating system to another, there is no financial benefit for producing that application on other operating systems." (Ron Rasmussen 7/10/98 Dep. Tr. 67.)

- (ii) James Von Holle of Gateway explained in his deposition that:

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“...if there are a lot of applications available, that’s the type of... industry activity that drives interest in a particular operating system. So again, the wide availability of applications is going to make the operating system also popular.” (James Von Holle 9/19/97 Dep. Tr. 9.)

- (iii) Similarly, Frank Santos, R&D Section Manager for Hardware and Software for the Pavilion product line at Hewlett-Packard, stated that customer expectations for PCs are “driven by applications that run on the operating system.” According to Santos, the applications “most used by consumers run on the Windows operating system” and don’t run on non-Windows operating systems. (Frank Santos 4/13/98 Dep. Tr. 9.)

- (iv) Brad Chase, Microsoft Vice President in charge of Marketing and Development Relations in the Personal Businesses’ System Group, confirmed the importance of the number of users for developers in the context of browsers:

“speaking very generally, a developer’s interested in building applications when there’s a lot of users who could run those applications on the platform.” (Brad Chase 3/25/98 Dep. Tr. 97.)

- (v) Jitendra Saxena, CEO of Applix, which offered an office productivity product for a “thin client” or browser-based client, described the situation from the point of view of a developer of a new product as a “vicious cycle.”

“...if most of the applications are running on Windows today, then the tendency for more and more of the users to require Windows, and then it is a vicious cycle. Very soon everybody requires Windows, and all the software development companies like us have to support Windows.” (Jitendra Saxena 4/17/98 Dep. Tr. 39.)

- (vi) Brian Croll, Director of Product Marketing for Sun Microsystem’s Solaris operating system, testified that it “comes down to volume, so that as the volume of your platform decreases, it’s less economically feasible for someone to offer a product there. So, it’s hard to get people on board...” (Brian Croll 7/14/98 Dep. Tr. 168.)

- (vii) Eric Dunn, Senior Vice President and Chief Technology Officer of Intuit, discussed the costs of developing software and the role the number of users plays in decisions about investments in such software:

“In the Quicken product line, the Macintosh and the Windows 95 versions are separate As a result, if we want to introduce a feature

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... we have to have six people working on Quicken for Windows and another six people working on Quicken for Macintosh.

“...the most important factor is the number of active user of a particular operating system. For us in Quicken it would be the number of home users for an operating system. So for example, we might say that the Windows and DOS environment — Windows environment would probably be perhaps as many as 30 million households and the Macintosh environment in the home might be 3 million households. So that’s the primary driver.” (Eric Dunn 4/24/98 Dep. Tr. 11-12.)

72. Microsoft does not appear to consider other operating systems vendors as a material constraint on its pricing of the Windows operating system. For example, Joachim Kempin, Senior Vice President of OEM Sales at Microsoft, was asked if he considered any other vendors in setting the Windows 98 prices. He testified that he set the royalty rates for Windows 98 and that he never thought about looking at other vendors. (Joachim Kempin 3/18/98 Dep. Tr. 75-78.)

73. In a memorandum in December 1997 about potential competition that could affect Microsoft’s OEM pricing strategy, Mr. Kempin described for Bill Gates the barriers to entry for OEMs that might be interested in entering the market:

“Our high prices could get a single OEM(Compaq might pay us 750M\$ next year) or a coalition to fund a competing effort (say in India). While this possibility exists I consider it doubtful even if they get a product out that they can market it successfully, leapfrog us and would not deviate from their own standard to differentiate. Could they convince customer to change their computing platform is the real questions. The existing investments in training, infrastructure and applications in windows computing are huge and will create a lot of inertia. No bundling of OS on low end systems would be the easiest way to hurt us- but who would want to start with this and loose business?” (12/16/97 re “As promised OEM pricing thoughts,” Joachim Kempin to Bill Gates, et al.: Pl. Ex. 365, p. MS7 007196.)

74. Microsoft argues that it faces competition from its own installed base (i.e., the copies of earlier versions of its operating system already in the hands of users).

(Richard Schmalensee 9/4/98 Expert Report pp. 6-7.) Even if that were true because of the absence of other competition, it does not follow that whatever constraint its own installed base poses is sufficient to prevent Microsoft from having monopoly power; indeed, the contrary is the case.

75. New operating systems are principally acquired in connection with the purchase of new computers and only secondarily in connection with upgrades. At best, Microsoft's installed-base argument relates to its pricing of upgrades. It does not apply to the more important channel of new computers.

76. New computers are bought largely to take advantage of developments in hardware or software. The fact that a given user has an old operating system will not do much to keep that user from changing computers when hardware or software advances, and a new computer is required to use those advances.

77. Moreover, Microsoft has taken action to ensure that installed-base competition is minimal. (For examples of these agreements, see Pl. Ex. 1113; Compare Kempin 3/18/98 Dep. Tr. 74-75.) Microsoft's licenses preclude customers from transferring their licenses to use Windows separately from their PCs; the ability to so transfer licenses would be a necessary condition for the development of a secondary market for such licenses that would permit OEMs to acquire such licenses as an alternative to licensing the use of Microsoft's newest version of its operating system. Microsoft's contracts with OEMs also generally prohibit them from shipping PCs to consumers with earlier versions of Microsoft's operating system once a new version is released.

78. Despite all the evidence set out above, Microsoft denies that it has monopoly power. Professor Schmalensee's expert report uses a well-known formula for profit-maximizing pricing and concludes that it shows that Microsoft does not have monopoly power. (Richard Schmalensee 9/4/98 Expert Report p. 6.) The proper conclusion from Schmalensee's argument cannot be that Microsoft lacks monopoly power. If any conclusion can be drawn, it would be that Microsoft is not maximizing its short-run profits.

2. Internet Browsers

79. It is probable that in the absence of intervention, Microsoft will obtain monopoly power in the market for Internet browsers.

80. There is a market for Internet browsers. Before Microsoft gave away its browser for free, a price for browsers was determined in this market and the market could have continued to perform this function. There is substantial demand for browsers that is separate from the demand for operating systems. Browsers are distributed separately from the operating system by ISPs and by retailers. There is demand for operating systems without browsers and for operating systems with a choice of browsers.

a. There is substantial demand for browsers that is separate from the demand for the operating system.

(i) For example, Cameron Myhrvold, Microsoft Vice President of the Internet Customer Unit, explained that ISPs distribute the Internet Explorer (IE) browser as a stand-alone product:

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“Q: And when you market IE Version 4 to ISPs, how do you represent that as a product? How do you position that?”

A: As the best browser in the marketplace.

Q: Do you ever tell ISPs that they’re distributing a component of Windows?

A: Do we tell ISPs they’re distributing a component of Windows? No, I don’t think we tell them that.... But no, it’s not something that I go out and specifically flag.

Q: Why not?

A: Well, if you’re selling tires, you probably don’t want to sell them as a piece of a Ford.

Q: Why not?

A: I don’t think that’s what people are buying.

Q: Could you explain what you mean by that as a marketing manager, from a marketing perspective?

A: Well, technically speaking I’m part of a sales force, but —

Q: Okay.

A: But the ISPs are distributing browsers because they need to ship browsers and support browsers as part of their service. It’s the way they terminate their service. So there is no service for them, there is no revenue if there is not a browser configured to take advantage of their service in the user’s hands. So they’re in the business of distributing browsers. So that’s the way in which we represent the product.

Q: Have the ISPs ever exhibited a need for distributing an operating system along with a browser or part of an operating system along with a browser?

A:A few have suggested from time to time maybe they should be people shipping upgrades of our operating systems. But I don’t think any have ever done that. And I’d say that’s only — that’s probably come up two or three times total.”

....

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“Q: Do you have an understanding as to why that never occurred?

A: People don't look to ISPs to get an upgrade of their operating system. We have a pretty broad channel for shipping operating systems and upgrades to operating systems, so I don't think the ISPs really add a lot of value there. We share their desire to upgrade people, but, you know, I don't think it really made a tremendous amount of sense.” (Cameron Myhrvold 4/24/98 Dep. Tr. 26-29.)

b. There is also a demand for an operating system with a choice of browsers.

(i) As Jon Kies of Packard Bell NEC explained:

“...browsers are considered by most of our customers as a third party application.” He described these as applications developed outside the Microsoft OS. (Jon Kies 9/11/98 Dep. Tr. 25.)

As for the choice between IE and the Netscape browser, Mr. Kies testified that for Windows 95 on the Versa LX and SX, Packard Bell NEC does not install a browser but includes both the Microsoft and Netscape browsers on a CD. Since “there was about 50 percent market share for Internet Explorer and Netscape,” pre-installation would mean that about half of the users would have to uninstall it. (Kies Tr. 24-26.)

“In an ideal choice, what we would most prefer is if we had Netscape and IE available to the end user during the installation process such that a prompt would come up and ask the question ‘Which browser would you like installed at this time?’” (Kies Tr. 39.)

(ii) This view was echoed by Eric Browning of Micron Electronics:

“In my view, it is desirable for Micron to be able to choose which browser(s) it preinstalls and to be able to customize the preinstalled browser(s) as a way of enhancing and personalizing its customers' experience with Micron's PCS.” (Eric Browning 10/14/97 Decl. ¶9.)

(iii) Richard Brownrigg of Gateway made the same point:

“...we'd like to ask the user what browser they'd like, giving them a default, of course, so they would have something if they choose an internet service, but letting them choose if they have a preference.” (Richard Brownrigg 3/5/98 Dep. Tr. 27.)

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c. There is even demand for operating systems without browsers. For example,

- (i) Joseph Kanicki, Strategic Commodity Manager for Dell Computer Corporation, stated in his April 1998 declaration, "...the customer may wish to prevent its employees from accessing or attempting to access the Internet or the World-Wide Web." (Joseph Kanicki Decl. 4/29/98, ¶2.)
- (ii) As David Limp, Vice President of Marketing of Network Computer, Inc., explained, "If you went to the floor of a call center...you may not want the person that's working eight hours a day on the call to have access to the Web. They can go off and surf to games and surf to the other things when they really want to be running that call center application, which is, answer the call, get the reservation, move to the next call." (David Limp 7/30/98 Dep. Tr. 124.)
- (iii) Jon Kies of Packard Bell NEC spoke more generally of corporate customers' desire to have software tailored to their needs: "...our customers preferred to receive only the base OS and drivers and not have any of the other third party applications pre-installed." (Jon Kies 9/11/98 Dep. Tr. 25.)

81. Barriers to entry (including network effects and the results of Microsoft's conduct) exist which prevent companies that might be able to produce a browser from entering the browser market. Indeed, by bundling its browser with its operating system and giving away its browser for "free," Microsoft effectively prevents companies from successfully entering the browser market unless they successfully enter the operating system market at the same time.

B. Browsers Are a Threat to Microsoft's Operating System Monopoly

1. Browsers Erode the Applications Programming Barrier to Entry

82. Microsoft has recognized that the dominant position of its Windows operating system is threatened by Internet browsers that are capable of supporting applications that are operating-system independent. The dominant position of Microsoft's operating system is protected by the applications programming barrier to entry described in some detail above. To the extent that browsers support applications independent of the operating system, they could erode the applications programming barrier to entry that protects Microsoft's monopoly in operating systems. In a 1995 memo to his "Executive Staff and direct reports," Microsoft CEO Bill Gates noted that Netscape was "pursuing a multi-platform strategy where they move the key API into the client to commoditize the underlying operating system." (5/26/95 "The Internet Tidal Wave," Pl. Ex. 20, p. MS98 0112876.3.) The following discussion explains how this could occur.

83. The browsers produced by Netscape run on many different operating systems, including Windows, the Apple Macintosh operating system, and various flavors of the UNIX operating system. (A list of these operating systems appears in Pl. Ex. 13.)

84. Netscape's browsers contain their own set of APIs (as well as a set of Java APIs) to which applications developers can write their applications. As a result,

applications can be developed that will run on browsers regardless of the underlying operating system.

85. Because applications running on the browser are not operating-system specific, the Netscape browser could undermine the network effects and applications programming barriers to entry that currently protect Microsoft's operating system monopoly. In particular, by lessening the reliance on the operating system, the browser, while not performing all the traditional functions of an operating system, could provide opportunities for competing operating systems by reducing the applications programming barrier to entry that protects Microsoft's operating system monopoly.

86. With enough applications written to be operating-system independent, users might cease to care, or care as much, whether they had the same operating system as other users. As Gateway's James Von Holle testified, an interface that sits on top of the operating system reduces the need for a specific underlying operating system:

"If the user is not required to boot or launch an application directly from Windows and there was some sort of an underlying layer that sat between the interface and the PC operating system that abstracted those commands, ... then there would definitely be a threat to Microsoft Windows.... The requirement for Windows would not be there." (James Von Holle 9/19/97 Dep. Tr. 32.)

87. Similarly, browsers could reduce the power of the operating system monopoly by facilitating the expansion of network computing, in which users with "thin clients" use a network to access applications residing on a server computer, rather than hosting the application on the PC itself. For example, in May 1998, Baer Tierkel, CEO of PeopleSoft Business Network, explained how the thin-client model is applied

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with his firm's enterprise software for large and medium-sized organizations: "All a customer must have for PeopleSoft's Internet solution to be available is a PeopleSoft-certified browser, along with a PeopleSoft-certified operating system.... We have created the Web client to run in a browser and is written using '100% Pure' Java. One reason we are making this effort is to reduce the cost to the end-user of maintaining client-based software." (Baer Tierkel Decl. 5/11/98, ¶5-7.)

88. Microsoft's own documents show an awareness of browsers as a serious threat to Microsoft's operating system monopoly, and its executives have expressed in both depositions and internal documents their concern that browsers could weaken Microsoft's control of the platform. As noted above, in 1995 Mr. Gates wrote that Netscape's strategy threatened to "commoditize" the operating system. Similarly:

- (i) As early as May 1995, Ben Slivka, who was at that time a Microsoft Project Leader for Internet Explorer, noted that "My nightmare scenario is that the Web grows into a rich application platform in an operating system-neutral way."

Mr. Slivka continued, "If we don't quickly become the supplier of choice for Internet technology, the Internet will grow and change under someone else's influence, and we risk losing the standard setting role (with the attendant profit margins) we have come to enjoy with MS-DOS and Windows (and Office)." (5/27/95 "The Web is the Next Platform (version 5)," Pl. Ex. 21, pp. MS98 0102395-6.)

- (ii) In a planning memo entitled "FY 97 Planning Memo: 'Winning the Internet platform battle,'" Brad Chase of Microsoft wrote:

"Why should you care?

This is a no revenue product, but you should worry about your browser share, as much as BillG because :

- we will loose the Internet platform battle if we do not have a significant user installed base. The industry would simply ignore

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our standards. Few would write Windows apps without the Windows user base.

- at your level, if you let your customers deploy Netscape Navigator, you lose the leadership on the desktop.” (4/4/96 “FY97 Planning Memo: ‘Winning the Internet platform battle,’ ” Brad Chase to FY97 WWSMM Attendees: Pl. Ex. 39, p. MS6 5005720.)

- (iii) Similarly, in a slide presentation for the “IPTD Division Meeting,” Brad Silverberg, who was at the time Senior Vice President of the Internet Platforms and Tools Division at Microsoft, wrote:

“The Internet Battle

This is not about *browsers*

Our competitors are trying to create an alternative *platform* to Windows[®]” (4/25/96: Pl. Ex. 40, p. MS6 6005550.)

- (iv) This theme is echoed in a planning memo written by Brad Chase, in which he said:

“Netscape’s primary strategy has not changed: they still want to obsolete Windows. Netscape and Sun endeavor to commoditize the OS and drive developers to adopt their technologies and APIs.” (4/4/97 “FY98 Planning Memo: ‘Preserving the desktop paradise,’ ” Brad Chase to FY98 WWSMM Attendees: Pl. Ex. 510, p. MS7 004127.)

- (v) Mr. Chase described the threat at length:

“Q: Now, you’ve also touched on Netscape as a competitive threat. Can you describe in a little more detail the way in which you see Netscape as a threat to Microsoft’s position in the operating systems area?

A. Well, there’s multiple ways in which Netscape is a threat to Microsoft in the operating systems area. One of the key elements of being successful with an operating system is development of applications for your platform.

Netscape is a platform for a whole set of applications that might be done on the Internet or Intranet and has made quite clear its desire to extend that effort to control developers and applications in APIs.” (Brad Chase 3/25/98 Dep. Tr. 38-39.)

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- (vi) Paul Maritz, Group Vice President, Platforms and Applications at Microsoft, described his view of Sun:

“If you go back to our discussion about forms of competition to Windows, one of the forms that I mentioned was the notion of people layering a layer on top of Windows and getting users and applications to bind to that layer and then moving that layer ... off Windows, which is the explicit strategy of some microsystems [Sun Microsystems] which would further increase the possibility that a layer on top of Windows could become the dominant operating system of the time.” (Paul Maritz 4/3/98 Dep. Tr. 175-176.)

- (vii) Christopher Jones, who in 1995 was Group Program Manager for Internet Explorer, described questions raised among the Microsoft participants before a June 1995 meeting with Netscape:

“Was Netscape in the platform business or not. And if they were not in the platform business, then what could we do to provide a great platform for them to create a business upon. And if they were in the platform business, that they were competing with us and ... that is a huge threat.” (Christopher Jones 4/8/98 Dep. Tr. 200.)

89. The browser could also threaten the operating system monopoly by providing an alternative user interface that would reduce users' reliance on the dominant operating system interface. By providing a popular alternative user interface, browsers could reduce consumers' resistance to non-Windows operating systems and enable businesses that utilize the alternative interface to use different operating systems without increasing their training and support costs. In turn, this would reduce Microsoft's power to exploit the value of its interface real estate by requiring other companies to promote Microsoft's products through exclusive agreements.

For example, Brad Chase of Microsoft testified that Netscape was "... also trying to control and define user interface, which is another important element of an operating system..." (Brad Chase 3/25/98 Dep. Tr. 39.)

2. Browsers Could Develop into Alternative Operating Systems

90. Microsoft was also concerned that browsers could ultimately develop into operating systems. For example:

(i) In April 1996, Bill Gates wrote:

"Netscape's strategy is to make Windows and the Apple Macintosh operating system all but irrelevant by building the browser into a full-featured operating system with information browsing. Over time Netscape will add memory management, file systems, security, scheduling, graphics and everything else in Windows that applications require.

The company hopes that its browser will become a de facto platform for software development, ultimately replacing Windows as the mainstream set of software standards. In Netscape's plan, people will get rid of their existing PC and Mac applications in favor of new software that will evolve around the Netscape browser." (4/10/96 "The Internet PC," Pl. Ex. 336, p. MS7 007443.)

(ii) Mr. Gates said of the Netscape browser, "They are taking a browser and growing it into an operating system." (6/10/96 "Fightback at the Seat of Power," Hugo Dixon and Louise Kehoe, *The Financial Times*: Pl. Ex. 71, p. 3.)

(iii) As Ben Slivka of Microsoft explained:

"So the point is not that the little tiny Web browser, you know, whether it was Navigator 1 or Navigator 2 or Navigator 3, the point was not that that thing by itself as it stood then would immediately kill Windows. That wasn't the point. The point was that that thing could grow and blossom and provide an application development platform which was more popular than Windows. So let me just take you through the scenario about how this happens.

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So Microsoft does nothing about the Web, and Netscape has its browser and continues to enhance that and refine that. It gets developers to write tools that target the Netscape platform, both their Web-server products, their commerce-server products, their collaboration products that are client and server.

And so in the same way that the Macintosh sort of faded away to irrelevance, in most people's opinion, because developers focused less and less on writing Macintosh applications, developers would focus less and less on writing Windows applications. And they would focus on Netscape applications.

....

And so the — if all the developers were focused on building Netscape applications as opposed to Windows applications, then eventually, you know, Netscape decides, hey, we're going to get in the operating system business. And so they build an operating system, and now that's installed. That can get preinstalled on computers so they can sell it at retail, however they decide to distribute that." (Benjamin Slivka 9/3/98 Dep. Tr. 252-253.)

- (iv) James Allchin, Microsoft Senior Vice President for the Personal Business Systems Group and a member of the Executive Committee, expressed similar concerns about Netscape:

"As far as I'm concerned, they were a complete competitor to the operating system. They made it very clear. I've been on panels with Mark Andreessen that they were going to replace the operating system. That was their intent." (James Allchin 3/19/98 Dep. Tr. 116.)

- (v) Brad Chase of Microsoft testified:

"Q: As you sit here today, do you see the threat we talked about a little bit from Netscape being more displacing Windows, substituting for Windows, or sitting on top of Windows and having the API set that makes Windows less important somehow?

A: I worry about both." (Brad Chase 3/25/98 Dep. Tr. 51.)

Mr. Chase went on to describe the "...additional very serious threat, that Netscape is slowly building all the components to completely replace Windows" due to Netscape's development of a Windows shell. (Chase Tr. 52.)

3. Microsoft's Plan to Extinguish the Browser Threat by Extending Its Control to the Browser Market

91. Microsoft responded to the Netscape threat by adopting a strategy aimed at extending its dominance over PC operating systems to Internet browsers, and ultimately the Internet itself.

92. Microsoft recognized that it could protect its dominant position in the PC operating systems market by gaining and keeping a large share of the business in Internet browsers and by preventing any other browser from having a sufficient share to threaten Microsoft's platform dominance or remain viable. For example:

(i) In June 1996, Microsoft's Paul Maritz stated:

"Without browser share, everything is very hard. So job #1 is browser share." He described Microsoft's battle with Netscape: "The need here is to fundamentally blunt Java/AWT³ momentum and to re-establish ActiveX and non-Java approaches as a viable strategy for structuring software, in doing protect our core asset Windows — the thing we get paid \$'s for. While Java per se is not the problem, if everything & everybody moves to Java as a language, then it will be so much more easy for AWT to become the API, and Windows is damaged." (6/20/96 re "windows & internet issues," Paul Maritz to Brad Silverberg et al.: Pl. Ex. 42, pp. MS6 6010346-47.)

(ii) Later, in April 1997, Mr. Chase noted:

"IE share is critical. Without it, we lose the desktop, which translates to Windows and Office revenue over time." (4/21/97 Brad Chase to Jeff Raikes et al.: Pl. Ex. 59, p. MS7 004365.)

(iii) Christian Wildfeuer of Microsoft wrote:

³ An Abstract Windowing Toolkit (AWT) is part of the set of Java classes and is used to build graphical user interfaces.

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“It seems clear that it will be very hard to increase browser market share on the merits of IE 4 alone. It will be more important to leverage the OS asset to make people use IE instead of Navigator.” (2/24/97 Christian Wildfeuer to Adam Taylor et al.: Pl. Ex. 202, p. MS7 004346.)

93. If Microsoft were to exclude competition in browsers, it would not be compelled by competitive pressure to ensure that its Internet Explorer browser could run on operating systems other than Windows. Nor would it be compelled by competitive pressure to support standards and technologies that are not tied to the Windows operating system.

- (i) Brad Silverberg, who at the time he went on leave from Microsoft was Senior Vice President of the Applications and Internet Client Group, explained how competitive pressure was responsible for Microsoft’s development of a cross-platform version of Internet Explorer:

“...the reason we built the Macintosh version was because we found resistance from corporate accounts as well as content providers who would say ‘I love what you’re doing with IE’...But, ‘Hey, I’ve got — you know I have some Macintoshes installed or I have some Unix boxes installed. And if you don’t have a version for Macintosh...I’d be forced to go with the competition.’ ... So we did it.” (Brad Silverberg 4/14/98 Dep. Tr. 96-97.)

- (ii) Paul Maritz wrote a memorandum to Brad Silverberg addressing the cross-platform issue:

“We have no desire to sell anything on Unix. However, owing to customer demand, we are going to have to provide an IE solution on Unix.” (6/20/96 Paul Maritz to Brad Silverberg: Pl. Ex. 42, p. MS6 6010349.)

94. Even though Microsoft faced browser competition from Netscape, the desirability of cross-platform activities was questioned at the highest Microsoft executive levels. In February 1997, James Allchin asked:

“Why are we doing so many things cross-platform? Are there more Macs, OS/2 or Unix clients today as a % or less than a year ago?”

“I assume the argument is that we have to do things cross-platform because Netscape is (or says they will). So, we move our innovations cross-platform and dilute Windows. The alternative is to say ‘NO’ and push even harder on Windows. ... We should be asking for specific innovations restricted to Windows. ... We should move as little cross-platform as possible.” (2/18/97 Jim Allchin to Bill Gates: Pl. Ex. 354, pp. MS7 007462-63.)

95. Moreover, if IE were the dominant browser and Microsoft decided to support only Windows-based technology, developers would have little incentive to create applications that were not Windows-based. In May 1995, Bill Gates noted:

“Another place for integration is to eliminate today’s Help and replace it with the format our browser accepts including exploiting our unique extensions so there is another reason to use our browser...

Without unification we will lose to Netscape/Hot Java....” (5/26/95 Bill Gates to Executive Staff and direct reports re “The Internet Tidal Wave”: Pl. Ex. 20, p. MS98 0112876.3.)

96. Microsoft took a number of anti-competitive actions to exclude competition in Internet browsers. Taken together, it is clear that these actions are anti-competitive and that Microsoft would not have undertaken them except to exclude and foreclose competition.

C. Microsoft’s Attempts to Allocate Markets

1. Microsoft’s June 1995 Attempt to Divide Markets with Netscape

97. Microsoft’s activities to prevent the emergence of the browser as a platform threat are part of a consistent course of conduct to prevent other firms from developing any platform software that threatens the Windows operating system monopoly.

98. One of the first actions Microsoft took to stem the incipient threat to its monopoly posed by browsers was to solicit its emerging competitor, Netscape, to engage in a market allocation scheme. According to Netscape CEO James Barksdale, in June 1995 Microsoft proposed that the two competitors draw a line by “dividing the market between Windows 95-based browsers and all the others” with Netscape agreeing not to compete in supplying browsers for Windows 95. (James Barksdale 7/16/98 Dep. Tr. 236.)

99. Microsoft’s attempt to enter into a horizontal agreement with Netscape to eliminate Netscape as a competitor supplying browsers for Windows 95 is worth some elaboration. The attempt is significant, first, because if Netscape had agreed, Microsoft would have succeeded in eliminating its only serious browser competitor and in monopolizing the market for browsers.

100. This attempt is also significant because it helps reveal the purpose and effect of actions taken by Microsoft when Netscape refused to agree to divide markets.

101. I have read Mr. Gates’s deposition testimony in which he denied any participation in preparing for the June 1995 meetings with Netscape and in which he testified that he first heard of a June 1995 attempt to divide markets when a story appeared in the *Wall Street Journal*. (Bill Gates 8/27/98 Dep. Tr. 265-66.) (Mr. Gates also testified he did not know until the *Wall Street Journal* story that a claim of attempted market division was included in the Complaints of the United States and the state Attorneys General.) (Gates 8/27/98 Tr. 271-72.)

102. However, the testimony of participants in the June 1995 meetings and contemporaneous documents make quite clear that an attempt to divide markets between Microsoft and Netscape was made in June 1995.

103. For example, Mr. Barksdale (who participated in the June 21, 1995, meeting with Microsoft) and Netscape Chief Technology Officer Marc Andreessen (who also participated in the June 21 meeting) both testified that Microsoft tried to convince Netscape to divide the browser market by drawing a line between browsers for Windows 95 and all other platforms, including Windows 3.1, with Netscape and Microsoft agreeing that Netscape would stop marketing browsers for Windows 95.

104. As noted above, Microsoft proposed that the two competitors draw a line “dividing the market between Windows 95-based browsers and all the others.” (Barksdale Tr. 236.) Mr. Barksdale also testified, “...we would be advised or allowed to sort of go to the market that wasn’t Windows 95.” If Netscape didn’t do that, it would be “crushed.” (Barksdale Tr. 236.) Mr. Barksdale’s testimony is confirmed by Mr. Andreessen. (Marc Andreessen 7/15/98 Dep. Tr. 463-72.)

105. The testimony of Netscape’s participants in the June 21, 1995, meeting concerning what happened at the meeting is also confirmed in important respects by the testimony of Microsoft participants. For example, Microsoft’s Christopher Jones testified:

- (i) “Q: Was there any discussion about trying to influence Netscape in any way to either move toward or stay on one side of the line or the center of the gray area, if you will, as opposed to simply finding out where it was that they intended to do business?”

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A: It was both.” (Christopher Jones 4/8/98 Dep. Tr. 208.)

- (ii) “Q: Do you recall any discussion about a desire of anybody on the part of Microsoft who was participating to be able to persuade or influence Netscape to not compete with Microsoft?

A: Absolutely.” (Jones Tr. 208-09.)

106. Contemporaneous documents confirm that the June 21, 1995, meeting included an effort by Microsoft to induce Netscape to agree to draw a line between Windows 95 browsers and other browser-related products and to induce Netscape to agree not to compete in supplying browsers for Windows 95. For example:

- (i) Netscape’s contemporaneous notes describe Microsoft’s position at the meeting as:

“Will MS & NS be able to cooperate & agree on the line, where it’s drawn, etc. If not, companies will compete. If so, then arrangement can be highly beneficial, with ‘aligned interests’.” (6/21/95 Marc Andreessen to jimb et al.: Pl. Ex. 547, p. NET 000914; Pl. Ex. 33, p. NSC017098.)

- (ii) Netscape’s notes go on to describe Microsoft’s position as:

“Would you be interested in having a partnership where NS gets all the non-Win95 stuff and MS gets all the Win95 stuff? If NS doesn’t want to, then that’s one thing. If NS does want to, then we can have our special relationship. THREAT THAT MS WILL OWN THE WIN95 CLIENT MARKET AND THAT NETSCAPE SHOULD STAY AWAY.” (6/21/95 Marc Andreessen to jimb et al.: Pl. Ex. 547, p. NET 000918; Pl. Ex. 33, p. NSC017100.)

107. Microsoft’s contemporaneous notes also confirm Microsoft’s attempt to get Netscape to agree not to compete. For example:

- (i) On June 1, 1995, Microsoft’s Paul Maritz forwarded to Bill Gates and other Microsoft executives an email from Thomas Reardon saying that the goals of meetings planned between Microsoft and Netscape were to “Move Netscape out of the Win32 Internet client arena,” “Avoid cold

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or hot war with Netscape,” and “Move Netscape out of Win32/Win95, avoid battling them in the next year.” (6/1/95 re “working with Netscape,” Thomas Reardon to Ben Slivka, Paul Maritz, et al.: Pl. Ex. 24, p. MS98 0009597.)

- (ii) Similarly, following the June 21, 1995, meeting, Microsoft executive Dan Rosen wrote to Bill Gates:

“Our goals going into the meeting were (in priority order):

1. Establish Microsoft ownership of the Internet client platform for Win95.”

He goes on to note that:

“ChrisJo [Christopher Jones] summed up the purpose nicely: ‘We need to understand if you will adopt our platform and build on top of it or if you are going to compete with us on the platform level.’ ” (6/22/95 Dan Rosen to Bill Gates et al.: Pl. Ex. 35, p. MS98 0009589.)

108. The contemporaneous notes of Microsoft and Netscape are also confirmed by contemporaneous memoranda of persons not affiliated with either company who received reports concerning this extraordinary meeting from participants. For example, on June 22, 1995 (the day after the June 21 meeting), AOL’s David Kaiser passed on to his superior at AOL Marc Andreessen’s report of Microsoft’s attempt to use a combination of threats and inducements to get Netscape to agree not to engage in platform competition with Microsoft. Mr. Kaiser wrote:

“Microsoft was at Netscape yesterday.... They wanted:

- equity
- a board seat
- Netscape to renounce the network as a platform
- Netscape to disclose all plans to microsoft
- Netscape to limit access to API’s

And in return, Netscape would be Microsoft's special partner, get inside information, etc... and if Netscape didn't do the deal, Microsoft would crush them." (6/22/95 David Kaiser email re "netscape info": Pl. Ex. 34.)

2. Similar Conduct by Microsoft — Apple and Intel

109. Microsoft has engaged in similar conduct with Intel and with Apple. It appears that when Intel proposed offering certain platform-level software, Microsoft objected on the grounds that this platform conflicted with Microsoft's platform plans. Microsoft threatened, among other things, to withhold support for Intel's new generations of processors if Intel proceeded with its plans. In the words of Intel chairman Andy Grove, Intel ultimately "caved" and withdrew the effort, at least under its own brand, explaining, "Introducing a Windows-based software initiative that Microsoft doesn't support . . . well, life is too short for that." (7/8/96 Brent Schlender, "A Conversation with the Lords of Wintel," *Fortune*: Pl. Ex. 559, p. 8.)

110. Another Intel employee, Steven McGeady, Vice President of the Content Group and Director of Intel's Health Technology Initiative, explained that Microsoft also discouraged Intel from supporting Netscape or Java as an alternative platform. (Steven McGeady 8/10/98 Dep. Tr. 11-12, 18-20, 34-37, 57-60, 64-67.) In August 1995 Mr. McGeady wrote:

"On August 2, 1995, in a meeting of Intel and Microsoft executives, Bill Gates told Intel CEO Andy Grove to shut down the Intel Architecture Labs. Gates didn't want IAL's 750 engineers interfering with his plans for domination of the PC industry. Gates made vague threats about support for other platforms, and on the same day he announced a major program to support Digital Equipment's Alpha microprocessor, an Intel competitor. Gates was livid about IAL's investments in the Internet, and wanted them stopped. All of this was said in the presence of executives from both companies." (8/28/95 Pl. Ex. 280, p. INT 0386.)

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111. Microsoft's internal documents, including particularly confidential messages from Bill Gates personally, confirm Microsoft's attempt to convince Intel to agree not to engage in platform competition with Microsoft. For example:

- (i) On May 25, 1995, Bill Gates wrote to Intel CEO Andy Grove complaining: "I don't understand why Intel funds a group that is against Windows95." (5/25/95 Gates to Grove: Pl. Ex. 277, p. MS98 1069352.)
- (ii) In early July 1995 Mr. Gates and Mr. Grove had a private dinner. Following that dinner, Mr. Gates reported to his executives that based on that dinner: "The main problem between us right now is NSP. We are trying to convince them to basically not ship NSP." (7/7/95 re: "Our Dinner" Gates to Silverberg et al.: Pl. Ex. 278, p. MS98 0169009.)
- (iii) Microsoft appears to have used its control over OEMs to put pressure on Intel to abandon NSP. On October 18, 1995 Mr. Gates reported:

"Intel feels we have all the OEMs on hold with our NSP chill. For example they feel HP is unwilling to do anything relative to MMX exploitation or the new audio software Intel is doing using Windows 95 unless we say its ok." (10/18/95 Gates to Silverberg et al.: Pl. Ex. 281.)
- (iv) Mr. Gates also reported:

"Andy believes Intel is living up to its part of the NSP bargain and that we should let OEMs know that some of the new software work Intel is doing is Ok." (Pl. Ex. 281.)

112. Microsoft documents also confirm that Microsoft used its relationship with Intel to discourage Intel from supporting Java or Netscape's browser. For example:

- (i) In June 1996, following a meeting with Andy Grove, Mr. Gates reported, "I told Andy that its inappropriate for their group to take anything resembling a Windows API and wrap it as a JAVA API." (6/9/96 Gates to Maritz et al.: Pl. Ex. 289, p. MS98 0169187.)
- (ii) Mr. Gates also reported:

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“I said it was important to us that they NOT ever publicly say they are standardizing on Netscape browsers.” (Pl. Ex. 289, p. MS98 0169187.)

- (iii) In 1997 Intel wanted Microsoft not to support a new and “very fast” set of instructions in a product of AMD (an Intel competitor). (2/20/97 Allchin to Maritz and Gates: Pl. Ex. 290, p. MS98 0168290.) Mr. Gates’s response was to offer to withhold support for AMD if Intel would “back off from their work on JAVA”. (2/20/97 Gates to Allchin and Maritz: Pl. Ex. 290, p. MS98 0168290.)

113. Microsoft’s internal documents also confirm that Microsoft engaged in extensive efforts to convince Intel not to support competing technologies, even when those competing technologies would enhance the performance of Windows PCs. For example, Microsoft’s General Manager for Internet Multimedia, Eric Engstrom, wrote to his superiors that he was working “aggressively” to convince “Intel to stop helping Sun create Java Multimedia APIs, especially ones that run well (ie native implementations) on Windows.” (5/26/97 Eric Engstrom to John Ludwig and David Cole, et al.: Pl. Ex. 235, p. MS7 027416.)

114. Microsoft engaged in similar conduct with Apple. Timothy Schaaff, Senior Director of the Interactive Media Group at Apple, described how Apple promoted QuickTime, its multimedia streaming technology, as an audio/visual content creation/authoring and playback mechanism on the Windows operating systems. (Timothy Schaaff 8/28/98 Dep. Tr. 37-38.) Microsoft, however, considered audio/visual streaming technologies to be part of a “growing collection of technologies” that “were a threat to the Windows platform.” (Benjamin Slivka 9/3/98 Dep. Tr. 244-245.)

115. Beginning in 1997, Microsoft representatives informed Apple that “Microsoft wanted to have control over the user interface ... and that Microsoft was determined that the essential APIs that were the foundation of the operating system should all come from Microsoft and not come from a third party.” (Schaaff 8/28/98 Tr. 42.) Microsoft offered to forego competing in the multimedia authoring tools market if Apple would scale back its efforts to establish QuickTime as a multimedia platform on the Windows operating system. (Schaaff 8/28/98 Tr. 38-41.) In addition to this inducement, Microsoft also set forth a threat: in the absence of an accommodation, Microsoft could devote 100 to 150 engineers to competing against Apple in the authoring tools market. (Schaaff Tr. 60.)

116. Microsoft representative Eric Engstrom told Mr. Schaaff that, although “Bill Gates was not interested in creating multimedia authoring software if controlling the authoring was a necessary element of ultimately owning the playback story, that that would make it an acceptable strategic move, even if it didn’t make sense from a business standpoint.” (Schaaff Tr. 58, 60-61.)

117. As these incidents indicate, Microsoft will respond immediately to prevent any other firm from writing platform-level software. This is true even though this software could increase the functionality and performance of, and thus the demand for, Windows-based PCs.

118. Microsoft’s conduct with respect to Intel and Apple is useful in analyzing the purpose and effect of Microsoft’s efforts to prevent browsers from surviving as a

source of APIs that could be used to develop cross-platform applications software. For example:

- a. In each case, Microsoft was confronted with platform-level software to which applications programs could be written.
- b. In each case, platform-level APIs threatened to erode the applications programming barrier to entry into PC operating systems by supporting applications programs that could be used with multiple operating systems.
- c. In each case, Microsoft responded by attempting to get the supplier of the potential alternative platform-level software to agree to withdraw from offering it and to concentrate instead on products that did not offer platform potential.
- d. In each case, Microsoft was prepared to act to preclude the supplier of a potential platform-level software from succeeding in offering the platform, even if such actions did not “make sense from a business standpoint.”

3. Microsoft’s Predatory Campaign to Exclude Browser Competition

119. As discussed above, taking action that does not “make sense from a business standpoint” in order to restrict competition (and thereby profit from the reduced competition) is the essence of predatory anti-competitive conduct.

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120. Microsoft's response to the prospect of a successful Netscape browser with cross-platform APIs that could erode the applications programming barrier to entry is a textbook example of predatory conduct.

121. Microsoft recognized the potential threat posed by Netscape's browser. As discussed above, in May 1995, Microsoft CEO Bill Gates warned his top executives that the browser could "commoditize" the operating system, and in June 1995, Microsoft attempted to agree with Netscape that Netscape would not offer a browser for Windows 95.

122. At the same time, Microsoft began devoting at least \$100 million per year to developing its own browser. (Microsoft's Answers to Interrogatories, Civil Investigative Demand No. 18140, Interrogatory 4.) An early step in that process was Microsoft's licensing of the right to use the code of the Mosaic browser. Microsoft then undertook a massive development effort to expand and improve the Mosaic code. Microsoft also spent tens of millions of dollars a year marketing and promoting Internet Explorer.

123. Despite the huge browser-related costs it was incurring, Microsoft distributed its browser at a negative price. The IE browser was not only given away free; companies were also paid money and given valuable concessions to accept, use, distribute, and promote IE. Examples include:

- a. Mr. Gates personally pursued a deal with Scott Cook of Intuit, a distributor of the popular personal finance program "Quicken." Mr. Gates wrote:

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“I was quite frank with him that if he had a favor we could do for him that would cost us something like \$1M to do that in return for switching browsers in the next few months I would be open to doing that.” (7/24/96 re “Intuit call with Scott Cook,” Bill Gates to Lewis Levin et al.: Pl. Ex. 94, p. MS6 6007642.)

- b. Microsoft’s OLS, ISP, and ICP agreements furnish these providers with space on the desktop in return for distributing and promoting IE.
- c. Microsoft gave discounts from ISP referral fees for “competitive upgrades” switching users to IE from competing browsers. For example, the Internet-Sign Up Wizard Referral agreements with AT&T, Earthlink, Mindspring, Netcom, and Spry contain this provision. (See Pl. Ex. 1115.)
- d. Cameron Myhrvold, who was in charge of Microsoft’s efforts to get ISPs and OLSs to distribute IE, testified in his deposition that Microsoft’s ISP referral service “doesn’t even pay for itself, much less generate any profits....So no, we don’t make any money from IE.” (Cameron Myhrvold 4/24/98 Dep. Tr. 136-37.)

124. Microsoft’s internal documents make clear that Microsoft undertook its browser development not to make money from browsers, not because doing so would “make sense from a business standpoint” on its own, but to prevent Netscape’s browser from facilitating competition with Microsoft’s monopoly operating system. This is the essence of predatory monopoly maintenance. For example:

- (i) Brad Chase pointed out in April 1996, in a memo to Microsoft personnel who were responsible for preparing marketing plans:

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“This is a no revenue product, but you should worry about your browser share, as much as BillG because...if you let your customers deploy Netscape Navigator, you loose the leadership on the desktop.”

(ii) Mr. Chase went on to instruct:

“You should go out to all the significant ISPs and on-line services in your country in May and close licensing agreements. You should also be able to break most of Netscape licensing deals and return them to our advantage because our browsers are free.”

(iii) Under the heading “Own Corporate browser licensing,” Mr. Chase noted:

“This is one of the biggest potential revenue opportunities for Netscape....we should have absolute dominant browser share in the corporate space.... make it very clear it does not make any sense for them to buy Netscape Navigator.” (4/4/96 re “FY97 Planning Memo: ‘Winning the Internet platform battle’,” Brad Chase to FY97 WWSMM Attendees: Pl. Ex. 39, p. MS6 5005720.)

(iv) In May 1995, Microsoft’s Ben Slivka wrote:

“If we don’t quickly become the supplier of choice for Internet technology, the Internet will grow and change under someone else’s influence, and we risk losing the standard setting role (with the attendant profit margins) we have come to enjoy with MS-DOS and Windows (and Office).” (5/27/95 “The Web is the Next Platform (version 5),” Pl. Ex. 21, p. MS98 0102396.)

125. Microsoft, at Bill Gates’s personal direction, undertook detailed studies of Netscape’s sources of revenue and what Netscape required to survive as an effective competitor. Microsoft estimated that at the time Microsoft made its decision to supply IE without charge, from 20 percent to 50 percent of Netscape’s revenues came from licensing its browser. (Bill Gates 8/27/98 Dep. Tr. 236.) Microsoft’s decision to price its browser below cost (indeed, at a zero or even negative price) was thus made when it knew that Netscape was charging for its browser and that Netscape depended on those revenues to continue to compete effectively. For example:

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- (i) As Mr. Gates told *The Financial Times* in June 1996:
- “Our business model works even if all Internet software is free.... We are still selling operating systems. What does Netscape’s business model look like...? Not very good.” (6/10/96 “Fightback at the seat of power,” Hugo Dixon and Louise Kehoe, *The Financial Times*: Pl. Ex. 71, p. 4.)
- (ii) On July 3, 1996, *The Financial Times* again reported:
- “‘Our business model works even if all Internet software is free,’ says Mr. Gates. ‘We are still selling operating systems.’ Netscape, in contrast, is dependent upon its Internet software for profits, he points out.” (7/3/96 “A rush for market dominance,” Louise Kehoe, *The Financial Times*: Pl. Ex. 83, p. 2.)
- (iii) The July 15, 1996, issue of *Business Week* reported:
- “One thing to remember about Microsoft,’ says Chairman William H. Gates III. ‘We don’t need to make any revenue from Internet software.’ Who could forget?” (“Netscape: Sitting Pretty – or Sitting Duck?,” Robert D. Hof: Pl. Ex. 84, p. 2.)
- (iv) On January 27, 1997 Microsoft President Steve Ballmer discussed Netscape’s “supposed threat to Microsoft:”
- “We’re giving away a pretty good browser as part of the operating system. How long can they survive selling it? ... And by the way, in that server business, their products work best when running on [Windows] NT. So we win when they make a sale, anyway.” (1/27/97 “The George S. Patton of software,” *Forbes*: Pl. Ex. 103 p. 2.)
- (v) Microsoft candidly described its pricing of its browser to Intel in an effort to convince Intel not to do business with Netscape, saying that Microsoft was “going to be distributing the browser for free” and that “this strategy would cut off Netscape’s air supply, keep them from gaining any revenue to reinvest in their business.” (Steven McGeady 8/10/98 Dep. Tr. 16-17.)

126. It is important to note that this is not merely colorful language that could be interpreted either as aggressive competition or as evidencing a predatory intent (for example, language like: “Our goal is to get 100% of the business” or even like “Let’s kill the competition”). This is language that accurately describes the purpose

and effect of Microsoft's conduct — distribute its browser at a zero or negative price in order to eliminate competition.

127. Without the gain to Microsoft that will result from preserving its highly profitable operating system monopoly and from monopolizing the browser market, Microsoft's conduct does not "make sense from a business standpoint." It is giving away, indeed paying people to take and distribute, something that it has spent a lot of money to develop and distribute and something for which the leading competitor was charging. Netscape's revenues from browsers for clients fell sharply in 1997 to zero in the first quarter of 1998, as shown in Pl. Ex. 9 and Pl. Ex. 10.

128. It is only when Microsoft's gains from preserving and extending its monopoly are included that Microsoft's conduct is profitable.

129. Microsoft in this litigation argues that its conduct is profitable without considering gains from reducing competition because the wide distribution of its browser will cause more people to buy PCs to browse the Internet, with the result that Microsoft will sell more copies of its Windows operating system. There are many reasons why this argument is wrong. They include:

- a. Microsoft's internal documents do not support the suggestion that either the purpose or effect of Microsoft's predatory pricing of browsers was to increase sales of Windows.
- b. As an analytical matter, if browsers are a complement to operating systems such that the sale of browsers that can be used with Windows will

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increase demand for Windows, it should not matter who makes the complement. But Microsoft cared greatly who made the browsers used with Windows.

- c. Microsoft even tried to discourage Netscape from offering Netscape's browser for use with Windows — an action inconsistent with browsers being a complement to Windows, whose distribution Microsoft wanted to maximize.
- d. Microsoft devoted substantial time, effort, and money to developing and distributing a version of IE for Apple computers. Microsoft gets no money from increasing sales of Apple's operating system; indeed, since Apple offers the main alternative to a PC using Windows, promoting complements to Apple that increase Apple's attractiveness to users *reduces* sales of Windows.
- e. Microsoft was preoccupied not with increasing total sales of browsers but with Microsoft's *share* of browser sales. Indeed, Microsoft studied, and tried to implement, ways to disable Netscape and reduce total browser sales. This conduct doesn't "make sense from a business standpoint" if browsers are viewed as a means of increasing sales of Windows. But this conduct makes good sense if browsers are viewed as a competitive threat to Microsoft's Windows monopoly.

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I am told that a judge once said that judges should be careful not to forget as judges what they know as men and women. The same is true of economists.

130. There are many difficult questions that can arise in analyzing whether a price is or is not predatory. It is not necessary to answer those questions in the present case. For example:

- a. The present case does not relate to a situation where a company reduces prices on an existing product – or where a company offers a low introductory price arguably intended to recoup its losses from the product’s subsequent revenues. In the present case, Microsoft spent many millions of dollars to develop a product that it intended at the time to distribute “free forever on both the Windows and Macintosh platforms.” (4/10/96 Bill Gates, “The Internet PC”: Pl. Ex. 336, p. MS7 007443.)
- b. The present case does not relate to a situation where a product is sold at a price that arguably covers some definition of cost; in the present case, Microsoft distributes its browser at a zero (indeed, a negative)⁴ price, as explained above.
- c. The present case is not a situation where there is doubt as to the purpose of a company’s pricing; in the present case, Microsoft made clear that the purpose of its decision to distribute its browser for free was to “cut off Netscape’s air supply.” (Steven McGeady 8/10/98 Dep. Tr. 17.)

⁴ The price is negative because Microsoft gives up valuable concessions such as space on the desktop (and the opportunity to earn money therefrom) in exchange for commitments to distribute its browser.

- d. The present case is not a situation where a company charges a price above average total cost (or even reasonably anticipated incremental costs), but not a profit-maximizing price; in the present case, Microsoft's price is zero or negative.

- e. The present case is not a situation where there is doubt as to a company's ability to recoup foregone profits through the preservation or obtaining of monopoly power; in the present case, preservation of Microsoft's operating system monopoly alone would easily permit recoupment — in addition, acquisition of monopoly power in the market for Internet browsers would permit Microsoft to earn substantial additional monopoly profit.

- f. The present case is not a case where a company sets a price below cost with the reasonable expectation that such pricing will result in competitive revenues from other products or services; in the present case, Microsoft's contemporaneous documents make clear that the company's zero (or negative) price for its browser was not considered a way to earn competitive ancillary revenues but a way to prevent potential competition from alternative platforms.

131. The potentially difficult questions that arise when analyzing whether a price is or is not predatory arise because of a desire to provide companies with an objective "safe harbor" in situations where pricing could reasonably be argued to be above average variable cost and profit-maximizing. In the usual case, the analysis is also complicated by the issue of whether the company whose pricing is challenged is

a monopolist or merely a competitor competing aggressively on the merits. In the present case:

- a. Microsoft possesses monopoly power in PC operating systems.
- b. Microsoft's pricing of its browser creates and/or preserves barriers to entry in operating systems. (It should be noted that the barriers to entry are not merely that the price level discourages entry; the barriers to entry in the present case would effectively prevent entry even if prices were to be increased after competition is excluded.)
- c. Microsoft's zero (or negative) price is below any relevant measure of cost (whether or not foregone browser revenues are included as an element of "cost").
- d. Microsoft spent hundreds of millions of dollars to develop and distribute Internet Explorer after it had decided to distribute it at a zero or negative price.
- e. Microsoft's pricing was undertaken for the explicit purpose of depriving rivals of revenues needed to be viable.

132. Given such facts, classifying Microsoft's pricing as predatory and anti-competitive does not require reaching the difficult questions that are usually faced in predatory pricing cases. (It is worth noting that the desire for an "objective" test that is sometimes used to argue against a profit-maximizing test (as opposed simply to

comparing a product's revenues with its costs of production) does not apply either where the absence of profit-maximizing pricing is explicit (as it is here) or where proof of revenues from projected ancillary products or services is necessary in any event (as will always be the case where price is zero or negative).)

133. Microsoft's predatory pricing was part of, and should be evaluated in connection with, a broader campaign to eliminate Netscape's browser and Java as sources of potential competition to Microsoft's operating system monopoly — a campaign characterized by actions by which Microsoft lost money in order to raise rivals' costs and exclude them from the market;⁵ by actions that Microsoft recognized internally did not "make sense from a business standpoint," except for their anti-competitive effects; and by Microsoft's agreements with customers and competitors that require them to refuse to deal with Netscape and other browser competitors — or to do so only on unfavorable terms.

134. For example, Microsoft sought to further deprive Netscape of revenue by inducing ICPs to agree not to pay Netscape for carrying or promoting the ICPs' content or logos. Moreover, Microsoft was prepared to give away valuable concessions to ICPs to secure such agreements.

135. Microsoft also entered into agreements with companies such as Intuit, a leading software applications supplier that competes with Microsoft in the supply of applications software, in which the companies agreed to "Bundle IE3 (Quicken) and IE4 (other products) will all new 97 and 98 releases of Intuit products," and to "Not

enter into marketing/promo agreements with Other Browser manufacturers for distribution or promotion of Intuit content.” (4/17/97 “Intuit Terms Agreed,” Will Poole to Brad Chase: Pl. Ex. 206.)

136. Microsoft’s dealings with Apple are evidence of how far Microsoft was willing to go to limit Netscape’s opportunities and to stifle Java. One of Bill Gates’s explicit “key goals” was to get Apple “to embrace Internet explorer in some way.” (6/23/96 “Apple meeting,” Bill Gates to Paul Maritz et al.: Pl. Ex. 260, p. MS98 0113116.) In June 1996, Mr. Gates proposed a “deal” to “top Apple executives” in which the first element of what “Microsoft gets” was “Apple endorses Microsoft Internet explorer technology.” (6/23/96 “Apple meeting,” Bill Gates to Paul Maritz et al.: Pl. Ex. 260.) Microsoft’s determination to get Apple to agree to work “against Sun and Netscape” and its willingness to engage in conduct that didn’t “make sense from a business standpoint” to accomplish that purpose are illustrated by numerous Microsoft documents. For example:

- (i) Microsoft threatened to cancel development of Office 97 for the Macintosh, which Microsoft was developing for use with Apple computers. As Microsoft’s Ben Waldman wrote to Bill Gates on June 27, 1997:

“The threat to cancel Mac Office 97 is certainly the strongest bargaining point we have, as doing so will do a great deal of harm to Apple immediately.” (6/27/97 “Moving forward with Mac Office 97,” B. Waldman to Bill Gates: Pl. Ex. 263, p. MS98 0113394.)
- (ii) On August 8, 1997, Avadis Tevanian of Apple wrote to Bill Gates that “IE4 on Windows disables Quicktime” and that “there is a perception that Microsoft is trying to lock-out QuickTime from Windows,” and

⁵ Steven C. Salop and David T. Scheffman, *Cost-Raising Strategies*, 36 J. of Indus Econ 19-34 (1987).

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asked Mr. Gates to try to do something about it. (8/8/97 re “post-agreement,” A. Tevanian to Bill Gates: Pl. Ex. 265.)

- (iii) In response, Mr. Gates wrote to Paul Maritz and other Microsoft executives responsible for dealing with Apple, enclosing Avadis Tevanian’s memo and stating:

“I want to get as much mileage as possible out of our browser and JAVA relationship here. In other words, a real advantage against SUN and Netscape. Who should Avie be working with? Do we have a clear plan on what we want Apple to do to undermine SUN?” (8/8/97 re “post-agreement,” Bill Gates to Paul Maritz et al.: Pl. Ex. 265.)

- (iv) On August 21, 1997, following the August 20 meeting of Microsoft’s Executive Staff, John Ludwig of Microsoft, on the subject of “conversations with billg last nite,” wrote:

“bill’s top priority is for us to get the browser in the october os release from apple. we should do whatever it takes to make this happen.... bill was clear that his whole goal here is to keep apple and sun split. he doesn’t care that much about being aligned with apple, he just wants them split from other potential allies.” (8/21/97 re “conversations with billg last nite,” John Ludwig to Don Bradford: Pl. Ex. 255.)

- (v) On January 22, 1998, Mr. Gates wrote:

“There is a big question of what we should do with JAVA on Mac - whether doing more work and working closely with Apple could help us in this ‘battle’ I think it can and would hate for Apple to have to go back to the SUN camp. I think we can gain a lot of share with IE on Mac if we do some modest things.” (1/22/98 re “Steve Jobs Call,” Bill Gates to Paul Maritz et al.: Pl. Ex. 267, p. MS98 0104472.)

- (vi) On February 13, 1998, Mr. Gates and others at Microsoft were reminded that “Apple wants to keep both Netscape and MS,” that “Getting Apple to do anything that significantly/materially disadvantages Netscape will be tough,” but that “MacOffice is the perfect club to use on them.” (2/13/98 re “Java on Macintosh/IE Control,” Don Bradford to Ben Waldman, Bill Gates, et al.: Pl. Ex. 268, p. MS98 0110952.)

137. Microsoft’s determination to restrict the support and distribution of Netscape’s browser by Apple is particularly significant when one considers that Apple represents the main potential alternative to desktop PCs running Microsoft’s Windows.

(Although that alternative is not sufficient to keep Microsoft from having monopoly power.) Whatever the relevance of Microsoft's arguments about why it wanted to make Internet Explorer available to sell more copies of Windows, those arguments cannot apply to Microsoft's efforts to force Apple to distribute Internet Explorer. As Mr. Gates candidly told his Executive Staff on August 20, 1997, he "doesn't care that much about being aligned with apple, he just wants them split from other potential allies." (8/21/97 re "conversations with billg last nite," John Ludwig to Don Bradford: Pl. Ex. 255.) In addition, there is no legitimate justification for Microsoft and Apple (two competitors) entering into an agreement "to undermine SUN." (8/8/97 re "post-agreement," Bill Gates to Paul Maritz et al.: Pl. Ex. 265.)

138. Actions taken by Mr. Gates where he "doesn't care that much about being aligned with apple, he just wants them split from other potential allies" are yet another example of actions that did not "make sense from a business standpoint" on their own merits but which were undertaken with the purpose and effect of excluding competition.

139. Although it is obvious, it is worth emphasizing that the Microsoft documents that reveal Microsoft's predation are not documents from low-level employees or employees likely to be misinformed about the purpose and effect of the company's conduct. Many of the most significant documents are documents to or from CEO Bill Gates, personally.

D. Microsoft's Bundling of Its Browser with Its Monopoly Operating System and Its Restrictions on OEMs

1. Microsoft's Decision to Bundle IE with Windows

140. Microsoft made a deliberate decision to "tie" or "bundle" its IE browser with its Windows operating system.

141. Moreover, Microsoft's bundling was not restricted to OEM licensing. Although IE was not originally bundled with the retail version of Windows 95 when it was first released in the summer of 1995, Microsoft soon bundled IE with Windows 95 in distributing Windows 95 to OEMs, and IE is now bundled with all Windows 95 and Windows 98 operating systems that Microsoft distributes through retail or OEM channels.

142. In an effort to weaken Microsoft's browser competition in order to protect Microsoft's monopoly in operating systems, Microsoft made the decision to bundle IE and Windows even though there is demand for browsers separate from the demand for operating systems.

143. Microsoft made its decision to combine its browser and operating system not to achieve efficiencies but to foreclose competition. For example:

(i) As Microsoft's Jim Allchin wrote to Paul Maritz on January 2, 1997:

"You see browser share as job 1. The real issue deals with not losing control of the APIs on the client and not losing control of the end-user experience...."

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I do not feel we are going to win on our current path. We are not leveraging Windows from a marketing perspective and we are trying to copy Netscape and make IE into a platform. We do not use our strength -- which is that we have an installed base of Windows and we have a strong OEM shipment channel for Windows.... I am convinced we have to use Windows -- this is the one thing they don't have....

If you agree that Windows is a huge asset, then it follows quickly that we are not investing sufficiently in finding ways to tie IE and Windows together.... The more we have a compelling Windows story...then the more Netscape will be cut off....it must be killer on OEM shipments so that Netscape never gets a chance on these systems." (1/2/97 "IE and Windows," J. Allchin to Paul Maritz: Pl. Ex. 48.)

(ii) As Microsoft's Christian Wildfeuer wrote on February 24, 1997:

"It seems clear that it will be very hard to increase browser market share on the merits of IE 4 alone. It will be more important to leverage the OS asset to make people use IE instead of Navigator." (2/24/97 C. Wildfeuer to Adam Taylor et al.: Pl. Ex. 202, p. MS7 004346.)

(iii) As Microsoft's Megan Bliss wrote on March 25, 1997, the company's "#1 strategic imperative" was "to get IE share," but that "they've been stalled and their best hope is tying tight to Windows, esp. on OEM machines." (3/25/97 re "Closure on Memphis action items from 3YO and Billg Memphis review," M. Bliss to Moshe Dunie et al.: Pl. Ex. 56, p. TXAG 0009634.)

(iv) As Kumar Mehta recognized on March 27, 1997, "...if we take away IE from the o/s, most nav users will never switch to us." (3/27/97 re "ie data," Kumar Mehta to Bob Foulon: Pl. Ex. 204.)

144. Microsoft also recognized that OEMs wanted the ability to develop their own screens and substitute Netscape's browser for IE. As Bill Gates wrote to his staff in January 1996:

"Winning Internet browser share is a very very important goal for us.

Apparently a lot of OEMs are bundling non-Microsoft browsers and coming up with offerings together with Internet Service providers that get displayed on their machines in a FAR more prominent way than MSN or our Internet browser" (1/5/96 re "OEMs and the Internet," Bill Gates to Joachim Kempin et al.: Pl. Ex. 295.)

145. As a result of Mr. Gates's initiative, Microsoft later that year imposed screen and start-up restrictions to prevent OEMs from developing their own first screen or positioning competing browsers more favorably than IE.

2. Microsoft's Agreements with PC Manufacturers

146. In connection with its tying of IE and Windows, Microsoft has required the distribution of IE and restricted the distribution of other browsers by entering into restrictive agreements with PC original equipment manufacturers. The agreements have required PC manufacturers who wanted to preinstall Windows 95 or Windows 98 on their machines also to preinstall Microsoft's Internet Explorer. The agreements also limited the ability of OEMs to promote other browsers, or to substitute other browsers for IE.

147. Until changes were prompted by an early 1998 stipulation between Microsoft and the Department of Justice, the agreements typically required that licensees not modify or delete any of the product software. This prevented OEMs from removing any part of IE, including the visible means of user access to the IE software, such as the IE icon on the Windows desktop or the IE entry in the "Start" menu. This was true despite the fact that many OEM executives expressed an interest in removing the IE icon from the desktop. For example:

- (i) Richard Brownrigg of Gateway testified:

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“Q: Does Gateway have the option of removing Internet Explorer 3.02c from Windows 95 OSR2.1?”

A: No.

Q: Would Gateway like to have the option of removing IE 3.02 from Windows 95 OSR2.1?”

A: From the standpoint of giving the user the choice of browsers, yes.” (Richard Brownrigg 3/5/98 Dep. Tr. 26.)

(ii) Stephen Decker of Compaq testified:

“Q: Well, at some time did Compaq remove the Internet Explorer from the machines that it was shipping?”

A: Yes.... They removed the icons.

....

Q: Why did Compaq want to remove the Internet Explorer icon at that time?”

A: At the time, we had a relationship with Netscape and we had been shipping their product for awhile. And therefore Netscape was actually the browser partner and we wanted to give that position on the Compaq Presario desktop.

Q: How did Microsoft respond to Compaq removing the Internet Explorer icon from the desktop?”

A: Well, when they found out about it, they sent a letter to us telling us that, you know, they would terminate our agreement for doing so.

Q: Did you have any understanding as to the basis for them threatening to or suggesting they would terminate the license agreement?”

A: ...I believe that the reason for Microsoft wanting that was because the icon represents the ease of use for the customer, and so therefore with the icon of the Internet Explorer visible and available to the consumer, they would naturally migrate to that particular product versus any other product that would be in a file folder.

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....

Q: After Compaq received the letter from Microsoft threatening to terminate the license agreement, what did Compaq do?

A: We went back and reworked the code so that we put the icon back on.” (Stephen Decker 10/17/97 Dep. Tr. 17-21.)

(iii) Eric Browning of Micron Electronics said:

“Having determined that removing the Internet Explorer icon and code from Windows 95 would be desirable in order to enhance its customers’ satisfaction with Micron’s computers and reap the maximum benefit from Micron’s relationship with SpryNet, I contacted a Microsoft sales representative to inquire whether Microsoft would permit Micron to remove Internet Explorer from Windows 95. Through telephone conversations, Microsoft denied this request.” (Eric Browning Decl. 10/14/97, ¶8.)

(iv) These statements regarding OEMs’ desire to remove the IE icon have been confirmed by Microsoft employees. For example, Gayle McClain, an Account Manager in Microsoft’s OEM division, testified that in 1997 and early 1998 Gateway requested permission to remove the Internet Explorer icon from the Windows 98 desktop. (Gayle McClain 8/7/98 Dep. Tr. 43-44.)

(v) Jon Kies of Packard Bell NEC testified that subsequent to the stipulation under which Microsoft was to grant more flexibility to OEMs, his company did in fact choose to delete the Internet Explorer icon from the desktop and the listing of the program from the Start menu.

“Q. Okay. Has Packard Bell NEC taken advantage of that January, 1998, option?

A. Yes, we have.... We provide the opportunity for the customer to choose either between Netscape Communicator 4.0 or IE 4.0. We provide a separate CD-ROM that we call ‘Applications and Drivers’ CD and we put the program code on that CD-ROM and provide the customer with a way to install it from that CD.” (Jon Kies 9/11/98 Dep. Tr. 24.)

148. Typically, Microsoft’s agreements with OEMs stipulated that licensees may not modify or obscure the appearance of the start-up or desktop screens as they appear during the initial boot. While licensees may add icons or folders on the

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desktop, the icons (folders) must be the same size as icons (folders) already on the desktop and of similar shape. The effect is to limit the ability of OEMs to promote other browsers by, for example, highlighting the existence of another browser with a large desktop icon or modifying the start-up sequence to give users an opportunity to make a non-IE browser their default browser or replace IE with a competing browser. This, again, was in spite of the fact that OEM executives had expressed an interest in modifying the startup sequence to give users a choice of browsers or achieve other benefits for users. For example:

(i) During his deposition in April 1998, John Romano of Hewlett-Packard spoke about Encompass, “ a small start up company that is in the business of providing...Internet connection solutions.” Encompass in conjunction with GTE would have helped HP modify the start-up process by offering “a one button Internet connection that customers could have free access to the Internet without a credit card for a certain amount of time.” Microsoft would not allow this modification and warned: “if we didn’t comply with them, that we would not be able to ship the operating system.” (John Romano 4/13/98 Dep. Tr. 37-41.)

(ii) Frank Santos of Hewlett-Packard also spoke about the agreement with Encompass during his deposition:

“Q: In addition to the technical issue that you’ve been talking about of combining Encompass with the registration process, were there any other reasons that HP did not put Encompass...before the Windows95 screens?”

A: Right, there is always the OPK, the OPK restrictions, yes. [Microsoft’s OEM Preinstallation Kit (OPK) contains technical instructions and restrictions concerning the installation of the operating system.]

Q: And did HP actually consider those at the time as a reason for not putting Encompass before the Windows95 screen?

A: Yes.” (Frank Santos 4/13/98 Dep. Tr. 34-35.)

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(iii) Similarly, Richard Brownrigg of Gateway testified about its plans for an ISP:

“Q: How do you inform customers about the availability of the Gateway ISP?”

A: We have placed a large button that sits behind the Windows welcome screen such that when the user clicks the close button for the Windows welcome screen that they’re presented with a large button which says click here to set up your computer. This walks the user through setup of the ISP, their browser, and their online services that they might choose to want to set up. And in the case of the Destination, our convergence line, it sets up the convergence piece of the machine.

Q: And why does this large button sit behind the Windows welcome screen?

A: Until the user has interacted with the operating environment, we have to leave the Windows 95 operating system in a pristine or a clean boot. And the Windows welcome screen when you initially start up the -- when the user initially starts the machine up is the first thing that comes up. And we hide our button behind this screen in order to maintain the requirements by Microsoft.”
(Richard Brownrigg 11/18/97 Dep. Tr. 15-16.)

(iv) James Von Holle, also of Gateway, in his deposition further verified this point, “...we would like to have the flexibility to offer customers a series of choices during that ISP registration process. And, at this point, it is our intention to offer a choice of browser as they sign up for their Internet.” His testimony continued:

“Q: Now, you referred to wanting to have that flexibility to do all this. Do you, in fact, have that flexibility as you understand the plan for Windows 98 right now?”

A: I don’t believe we have that flexibility, as I understand it today, the ISP Referral Service that Microsoft has included in the product to be considered to be part of the boot-up sequence. And we are not able to make changes to the system for the customer until that sequence has completed.

....

Q: ...have you or others at Gateway asked Microsoft for the ability to have the kind of flexibility that you described?

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A: Yes.

Q: What has Microsoft's response been or what is it as of now?

A: Their response as of now is that we will not be allowed to remove their referral service and replace it with ours." (James Von Holle 4/30/98 Dep. Tr. 14-15.)

(v) Gayle McClain of Microsoft confirmed Mr. Von Holle's statement:

"Q: At the time this document was written, was Gateway allowed to do that which you described earlier, which is provide browser choice in the startup sequence?

A: They weren't allowed to make any changes to the initial boot process." (Gayle McClain 8/7/98 Dep. Tr. 83.)

(vi) Richard Brownrigg of Gateway likewise testified:

"Q: ... Does Gateway have any sort of system greeter or orientation program that it runs for new computer users to orient them to the Gateway computer?

A: No, we do not.

Q: Is that something that Gateway has considered?

A: Yes.

Q: Why does Gateway not have such a program?

A: Due to licensing arrangements with Microsoft and the requirement of the first boot be clean, the pristine booting to a pristine Windows environment, we have been unable to automatically launch or facilitate the launch of a system greeter or an initial welcoming document or interactive media, multimedia presentation." (Richard Brownrigg 11/18/97 Dep. Tr. 14-15.)

In a later deposition, Mr. Brownrigg said:

"...If I didn't have to put the Welcome to Windows screen up and put the icons up in the screen the way they want it, I mean, it would save me a significant amount of time. I'd just do straight usability studies on what I design and put it up there and let the user have it." (Richard Brownrigg 3/5/98 Dep. Tr. 50-51.)

149. James Barksdale of Netscape testified about the effects of the OEM restrictions on his company:

“Q: What about PC OEMs or PC manufacturers? Did Microsoft do anything that inhibited the distribution of Netscape’s browsers through that method or channel of distribution?”

A:When they were able to or did in fact cancel their contract for Windows 95 distribution by Compaq computers, which is like saying I’m – that’s the death knell for an OEM, and the answer was that somehow or another by Netscape participating on the desktop was violating the Windows experience, I’ve later heard it referred to, and Compaq therefore cancelled with us, and we lost that distribution deal.” (James Barksdale 7/16/98 Dep. Tr. 226-227.)

150. Licensees were not contractually restricted from loading other browsers on the desktop. However, some OEMs preferred to load only one browser to avoid user confusion and the resulting consumer support costs, and to avoid increased testing costs. For example:

(i) When asked why Gateway would want to delete either Netscape or IE when a user chooses to use the other as its browser, Richard Brownrigg said:

“Customers will try things that are sitting there....it would cause customer confusion and possibly generate a technical support call. And our goal is to provide a very good end-user experience that’s easy for them to understand and not be confusing and not call us for tech support when they get confused.” (Richard T. Brownrigg 3/5/98 Dep. Tr. 34.)

(ii) Mal Ransom, Senior Vice President of Marketing for Packard Bell NEC, confirmed that two browsers have “...the potentiality for confusing the users, especially the new user who really doesn’t understand what a browser is...” (Mal Ransom 3/19/98 Dep. Tr. 28.)

(iii) Webb McKinney, General Manager of the Home Products Division at Hewlett-Packard, cited the consumer support load, training and testing as reasons to avoid loading more than one of similar titles on the desktop. (Webb McKinney 3/13/98 Dep. Tr. 29-30.)

151. In addition, some OEMs viewed the desktop and/or disk space as scarce real estate and were generally reluctant to preinstall more than one software title in each functional category. For example, Stephen Decker, Director of Software Procurement at Compaq, was averse to loading a second browser because it would “take up additional real estate on our hard drive.” (Stephen Decker 10/17/97 Dep. Tr. 22.)

152. Microsoft’s restrictions on the startup screen have been somewhat modified so that OEMs had somewhat more flexibility than when the restrictions were imposed. OEMs are also able to select ISPs to be in the Microsoft referral service (8/7/98 Cameron Myhrvold Decl. ¶18.) However, IE must still be installed on every PC and the IE icon cannot be removed. Thus, since Microsoft’s tying arrangement ensures that IE is on every Windows PC, the result is a significant exclusionary effect that ensures that IE is the *only* browser on most PCs shipped by OEMs.

3. Microsoft’s Agreement with Apple

153. Microsoft also entered into a restrictive agreement with Apple that requires Apple to make IE its default browser on all of its Macintosh operating systems. This agreement forced Apple to place all competing browsers in a folder (i.e., banishes other browsers from the Macintosh desktop) and limited Apple’s ability to promote other browsers. (8/5/97 “Technology Agreement between Apple Computer, Inc., and Microsoft Corporation”: Pl. Ex. 1167, pp. MAC 0044-45.) In order to induce Apple to enter this contract, Microsoft, among other things, threatened to stop development of its Office application suite for the Macintosh. As Microsoft knew,

withdrawal of support for this crucial application would have had a devastating effect on the viability of the Macintosh operating system. (Avadis Tevanian 7/17/98 Dep. Tr. 135-42.)

154. As Avadis Tevanian, Senior Vice President of Software Engineering at Apple, has indicated, whatever the merits of IE as a browser there were “certainly no dependencies or it wasn’t necessary to have IE be the default.” (Tevanian Tr. 142-43, 149.) This suggests strongly that Microsoft’s actions are not merely technology- or efficiency-driven.

4. Microsoft’s Attempted Justifications for Its Bundling and Restriction of OEMs

155. Microsoft has proffered a number of justifications for its conduct, but none suggests that Microsoft’s primary motive was anything other than to restrict competition in browsers.

156. Microsoft has designed interdependencies between IE and Windows, and claims that this is a rationale for its bundling practices. (Microsoft Corporation’s Response to Plaintiffs’ First Joint Set of Written Interrogatories to Microsoft Corporation, 6/27/98, pp. 27-28; Richard Schmalensee 9/4/98 Expert Report pp. 29-30; Defendant Microsoft Corporation’s Memorandum in Support of its Motion for Summary Judgment, pp. 6-9.) But even if two products as designed cannot readily be separated, the bundling or tying of the two can raise the same anti-competitive concerns that contractual bundling or tying would raise. Moreover, such concerns are not automatically overcome merely because the bundle brings some amount of

consumer benefit to certain consumers. (For my purposes it does not matter whether one calls Microsoft's actions "bundling" or "tying" or both. Here, Microsoft does not merely offer IE at no separate charge but effectively forces customers (OEMs) to take it. Of course, the anti-competitive effects of Microsoft's actions are independent of the nomenclature.)

157. Virtually every product design, particularly in the area of computer software, can make a plausible claim for some efficiency or benefit. Many software products can be combined in such a way that they share certain code; if code is shared there is some plausible efficiency (although perhaps very slight), and separating the two products once they have been combined may be very difficult.

158. If combining two products in a way that produces plausible efficiencies (however slight), or that makes it difficult to separate the products, were an absolute defense to a claim that the combination was anti-competitive, software commerce would be essentially immune from tying scrutiny. In the present case, the anti-competitive effects are large; the technological benefits appear to be small or non-existent.

159. Microsoft has argued that it must force OEMs to take IE because the absence of IE may undermine the quality of the operating system, to the detriment of users. However, several facts contradict this suggestion. For example, Microsoft provided ways to remove IE in Windows 95 — a function that would most likely not have been provided if it led to a decrease in the quality of the operating system.

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160. Also, as I understand it, it is possible within Windows 98 to remove the ability to browse the Web with IE and to replace IE with another browser with no appreciable decline in the quality of the Windows 98 operating system. As Edward W. Felten, Assistant Professor of Computer Science at Princeton University, explained, "It is possible to construct a mechanism for removing Web browsing from Windows 98....This demonstrates that Microsoft could have produced a version of Windows 98 without Web browsing in a way that did not endanger the functionality of the operating system." (Edward W. Felten 9/1/98 Expert Report pp. 13-14.)

161. Professor Felten further stated that:

"I have run the prototype removal program on a computer, and then installed Navigator. A computer that has undergone these procedures suffers no apparent loss of stability or functionality and provides the user the full Web browsing experience offered by Navigator." (Edward W. Felten 9/1/98 Expert Report p. 15.)

162. In fact, Microsoft has permitted Dell to remove IE from the desktop for Windows 95 at the request of the OEM's large customers. Joseph Kanicki, Strategic Commodity Manager at Dell testified:

"Dell negotiated for and obtained an exception to this requirement for instances in which a customer requested a Windows 95 or Windows NT computer without Internet Explorer." (Joseph Kanicki, Jr. 4/29/98 Decl. ¶ 2)

163. Presumably, Microsoft would not allow this kind of exception if it undermined the quality of the operating system. Likewise, OEMs would not negotiate to remove IE if the operating system would be adversely affected, since a poorly operating computer would reflect poorly on the OEM and would be likely to increase

the number of customer support calls; also, large customers would not request an operating system with IE removed if they felt this system would be adversely affected.

164. As noted above, Microsoft is allowing OEMs slightly more flexibility on the first screen and the ISP registration process. It seems unlikely that either Microsoft or the OEMs believe these changes will lead to significant deterioration in the quality of the operating system.

165. Microsoft has also argued that its bundling of IE is necessary to provide a uniform platform for software developers. But, as noted above, Professor Felten demonstrated that Windows 98 could have been produced without IE while still allowing independent software vendors (ISVs) to write applications. In any event, in light of the different versions of Windows and IE that Microsoft has put in the marketplace, developers that rely on system services or code found in IE must redistribute the necessary IE code anyway to ensure that the proper version of the necessary DLL (dynamic link library) or file is present to support their applications. For example:

- (i) Carl Bass, Chief Technical Officer and Vice President of Engineering at Autodesk, Inc. (the fifth largest vendor of software for personal computers in the world), testified that Autodesk's principal product, AutoCAD, uses the WININET service included in IE 3.0 and 4.0:

"The version of WININET currently used in AutoCAD release 14 is included with AutoCAD. When the user installs AutoCAD on the PC, the install program detects whether the user's computer already has the necessary version of WININET. If the necessary version is not present, or if the version of WININET on the user's PC is older than the version included with AutoCAD, the program will install the version of WININET that is bundled with AutoCAD.

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“In the case of the WININET service, the user may not have the version used by AutoCAD release 14 because Microsoft, like other developers that supply dynamic link libraries (.DLL’s), has changed WININET a number of times since Microsoft first released Windows 95 to the public. Users of earlier versions of Windows 95 may not have upgraded each time Microsoft altered WININET. Moreover, even if the user may have a version of Windows 95 that originally had the version of WININET used by AutoCAD release 14, the user may have installed other applications on the PC which replaced that version of WININET with a different version used by the developer of that application. Autodesk therefore considers it necessary to bundle the particular version of WININET which Autodesk tested with the AutoCAD program so that a user of any version of Windows 95 will be able to reliably locate and download a design from the AutoCAD program.

“There are other .DLL’s provided by Microsoft and other software developers that, like WININET, have been modified frequently by the developer. Autodesk programs often use such .DLL’s, and Autodesk will most likely bundle the necessary .DLL’s with its applications to ensure that the user has the correct version of the .DLL to enable the Autodesk program to run properly.” (Carl Bass 11/21/97 Decl. ¶4-6.)

- (ii) John Gailey, Director of Engineering for Novell, Inc., described a similar situation with respect to Novell’s “GroupWise” software:

“The version of GroupWise that runs on Windows 95 calls upon a number of services provided by Windows 95. Because Microsoft is constantly changing and updating the system services provided by Windows 95, Novell bundles some of those operating system services with GroupWise in order to ensure that all users have available to them the latest version of the system service GroupWise is calling upon.” (John Gailey 11/17/97 Decl. ¶4.)

166. Microsoft has argued that it is justified in restricting OEMs from altering the start-up process to preserve the quality and speed of the start-up process and to give each user a consistent experience. However, the fact that Microsoft has granted exceptions to these restrictions to certain OEMs suggests that the concern for quality, speed, and consistency is not Microsoft’s primary motive for enforcing these restrictions. (See, e.g., Microsoft Windows Initial Boot Process, letters from Karen Hurlbut, Microsoft’s General Manager OEM Operations: 5/26/98 to Marina Morrilla,

Hewlett-Packard: PI. Ex. 773, p. MS98 0113871; 5/26/98 to Senior Business Manager, Software Supply Management, Gateway: PI. Ex. 774; and 6/22/98 to Joe Kanicki, Strategic Commodity Manager at Dell Computer Corporation: PI. Ex. 1196.)

167. This conclusion is supported by internal Microsoft documents establishing the restrictions that admit that third parties can “be part of the original feature set if they work closely with us to promote our platforms and thus help us strategically.” (9/17/96 Kempin to Gates, Maritz and Ballmer: PI. Ex. 304, p. MSV 0009376 A.)

168. If Microsoft were a small company with a small share of operating systems, its bundling provisions would be harmless. Given Microsoft’s dominance, these types of provisions are anti-competitive. They inhibit PC manufacturers from preinstalling and promoting competing browsers. Their purpose and effect are to weaken Microsoft’s browser competition in order to protect Microsoft’s business in operating systems. The benefit gained by creating interdependencies between IE and Windows would have to be great to counterbalance the anti-competitive effects of bundling.

E. Exclusionary Agreements with Internet Service Providers

169. Microsoft has also required the promotion and distribution of IE and restricted the promotion and distribution of other browsers by striking deals with ISPs in order to protect Microsoft’s business in operating systems. ISPs and the OLSs are, after OEMs, the largest distributors of browsers. In December 1996, Sam Jadallah

and Cameron Myhrvold of Microsoft wrote that "ISPs Drive Browser Market share. 35% of end-user Internet access customers get their browser from an ISP." (12/18/96 Memorandum Re: Plan of Record: Working with ISPs in North America (DRAFT): Pl. Ex. 200, p. MS6 6011450; Cameron Myhrvold 4/24/98 Dep. Tr. 43.)

170. Microsoft's approach to ISPs was to license IE for free:

"If an ISP is willing to make IE the preferred browser and agree to a few other requirements in our license agreement we offer to license IE and its add-on components for free. We allow them to distribute another browser if they wish but it is very important that IE is the preferred browser. We will not sign deals were that is not the case." (9/9/96 re "ISP marketing update," Bjorn Hovstadius to Cameron Myhrvold et al.: Pl. Ex. 93, pp. MS6 5003741-42.)

171. Because of the monopoly position of its Windows operating system, Microsoft understood that ISPs would be very interested in having favorable placement on the Windows desktop. As part of its effort to exploit its Windows advantage, Microsoft designed a special access method called the Internet Connection Wizard to assist users in signing up for ISPs. Only a few ISPs could be accessed through the Internet Connection Wizard. Initially there were twelve, including some of the largest ISPs.

172. By mid-August of 1996, Microsoft had signed "IE Preferred" distribution agreements with about 2,500 ISPs. Among these were most of the largest ISPs in the United States. These agreements usually specified that IE would be the preferred and default browser. While the ISPs could distribute other browsers, Microsoft expected a large fraction of them to distribute only IE. "Of the 2,500 signed, I'll bet 2,000 only

distribute our browser.” (8/13/96 re “IE 3.0 Sales Status,” Cameron Myhrvold to Steve Ballmer: Pl. Ex. 193.)

173. Some ISPs had agreements that allowed them to distribute IE and Netscape without preferences; Microsoft’s documents use the term “IE Parity” to identify these companies.

174. Microsoft also created another desktop folder for ISPs which were on-line services providers (OLSs) and entered into agreements with America Online, CompuServe, Prodigy, and AT&T to appear in it.

175. Brad Silverberg, formerly Senior Vice President of Applications and Internet Client Group at Microsoft, described the advantages of Microsoft’s mechanisms for signing up Internet and online services subscribers, such as the Internet Connection Wizard and online services folder. In the context of questioning about Microsoft’s negotiations with AT&T, Mr. Silverberg testified that:

“We made it very easy for AT&T to acquire customers and sign up and have them configured. And you wouldn’t have to have a CD mailed to you.” (Brad Silverberg 4/14/98 Dep. Tr. 176.)

176. Microsoft used the strong demand by OLSs for access to Microsoft’s Windows operating system to extract promises from the services not to deal with Netscape or to do so only on very unfavorable terms. Mr. Silverberg testified that he told AT&T:

“You want to be part of the Windows box, you’re going to have to do something special for us. There are very, very few people we allow to be in the Windows box. If you want that preferential treatment from us,

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which is extraordinary treatment, we're going to want something very extraordinary from you." (Brad Silverberg 4/14/98 Dep. Tr. 159.)

177. Silverberg explained that this meant giving IE "exclusive or very, very preferential treatment (ala what we have with AOL). Parity is completely unacceptable for them to be in the box." (3/15/96 re "AT&T Meeting (3/13) Trip Report," Brad Silverberg to Steve Wells et al.: Pl. Ex. 183, p. MS6 6010581.)

178. While Bill Gates initially was "very, very uncomfortable about shipping AOL" on Windows because of its own online service, MSN (Brad Silverberg 4/14/98 Dep. Tr. 187), Microsoft's agreement with AOL turned out to be an important deal for increasing IE's share. At the time the agreement was signed, in early 1996, AOL was being installed on PCs by many of the OEMs. AOL also had by far the largest subscriber base of all the OLSs. Up to that point it had used its own proprietary browser, based on Booklink. (David Colburn 3/6/98 Dep. Tr. 20-24.)

179. David Colburn, Senior Vice President of Business Affairs at AOL, testified that the "AOL client would be on the Microsoft desktop in the online services folder for a specified period of time and that we essentially had to make Microsoft the default browser as what we included in the AOL client." (Colburn Tr. 24.) AOL was also subject to percentage restrictions on shipments of other browsers as well as other restrictions on the promotion or distribution of other browsers. Mr. Colburn also testified that "we had...some requirements about distributing updated Internet explorers on an accelerated basis to our clients." (Colburn Tr. 48.)

180. AOL's performance under the restrictive agreement with Microsoft had strong positive effects on Microsoft's browser share. As of November 1997, a Microsoft document reported that "straight" IE users gave IE 24 percent share, while AOL IE users provided an additional 17.9 percent share. (1/12/98 re "AOL now at 92% share according to SVP at AOL," Bill Koszewski to Cameron Myhrvold et al.: Pl. Ex. 220, p. MS98 0120897.) In January 1998 Microsoft stated that "IE is at 92% share at AOL.... That is up from 85% in November." (1/12/98 re "AOL now at 92% share according to SVP at AOL," Mauricio Gonzalez de la Fuente to Laura Torina, Cameron Myhrvold, et al.: Pl. Ex. 220, p. MS98 0120897.) As noted below, restrictions on AOL and the other OLSs were not waived by Microsoft earlier this year when restrictions were modified for the ISPs.

181. Microsoft explicitly recognized that the decision to grant OLSs favorable access to Windows (particularly AOL, which was the leading competitor to Microsoft's MSN on-line service) was an expensive one. Bill Gates decided that the lost opportunity was less important than its over-riding goal of winning "the browser battle" and protecting its core monopoly. For example:

- (i) In a conversation about MSN in the spring of 1996 (just after Microsoft's March 12, 1996, agreement granting AOL favorable access to Windows), Bill Gates is quoted as saying:

"We have had three options for how to use the 'Windows Box': First, we can use it for the browser battle, recognizing that our core assets are at risk. Second, we could monetize the box, and sell the real estate to the highest bidder. Or third, we could use the box to sell and promote internally content assets. I recognize that, by choosing to do the first, we have leveled the playing field and reduced our opportunities for competitive advantage with MSN." (Michael A. Cusumano and David B. Yoffie, *Competing on Internet Time: Lessons*

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from Netscape and Its Battle with Microsoft [Simon & Schuster: New York], 1998, p. 112.)

- (ii) Mr. Gates made this decision even though he recognized that doing so would be equivalent to “putting a bullet through MSN’s head.” (Brad Silverberg 4/14/98 Dep. Tr. 187.)

182. While Microsoft charged a referral fee for customers the ISPs acquired through the Windows 95 desktop, browser share, not revenue, was the object of the agreements. Microsoft also made valuable concessions, directly or indirectly, to the ISPs. These varied across ISPs but included joint marketing programs, pricing deals, and discounts from referral fees for users switched from competitive browsers. As Mr. Myhrvold testified at his deposition, the ISP referral server did not pay for itself. (Cameron Myhrvold 4/24/98 Dep. Tr. 137.)

183. A Microsoft document describes how Mr. Silverberg dealt with AT&T’s \$17 million minimum commitment for purchases of Netscape’s browser:

“...they’d really like to be browser neutral and are strongly motivated to preserve their partnership with Netscape. But bradsi [Brad Silverberg] has told them that to get in the box they need to give us preferred status; bradsi also told them he’d let them use our bounties to pay down the Netscape min commits if we got preferred status.” (3/14/96 Dan Steele to Brad Chase et al.: Pl. Ex. 179.)

184. While there was some variation in the restrictions imposed on the OLSs and other ISPs, these agreements with Microsoft limited the ISPs’ ability to promote and distribute third-party browsers. In general these agreements stated that Microsoft would provide users with access to ISP services from the desktop, and in return, ISPs were not only required to promote IE, but they were also required not to promote other

browsers. (For examples, see Pl. Ex. 1115.) Typically, such restrictive provisions included:

- a. Requirements that 75% or more of the ISP software shipments include IE as the only browser and that the ISP not ship a competing browser unless a customer specifically requests it;
- b. Limitations on ISP links to use or download third-party browsers on the ISP home Web page or any other Internet access service Web page offered by the ISP;
- c. Prohibitions on expressing or implying that an alternative browser is available, including limitations on displaying any logo for a non-IE Web browser on the ISP home Web page or any other Internet access service Web page offered by the ISP.

185. For example, according to Stephen Von Rump, Vice President of Enterprise Services at MCI, MCI's Internet-Sign Up Wizard agreement with Microsoft signed in July 1996, required that MCI not display the logo of or maintain a link to a browser other than IE. MCI was restricted in its ability to advertise or otherwise promote Netscape Navigator, and could not ship Navigator unless specifically requested to do so. Moreover, MCI could not tell customers that other browsers were available to them. In addition, 75 percent of the browsers it shipped had to be IE; if not, Microsoft could delete MCI from the ISP Phone Book, in which Microsoft kept MCI's name, telephone number, and other information. (Pl. Ex. 1138, p. MS6

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5000870) To Mr. Von Rump's knowledge, MCI complied with the terms of its agreement and Microsoft expected MCI to comply. (Stephen Von Rump 4/28/98 Dep. Tr. 9-13, and 9/3/98 Dep. Tr. 25-26, 29-31.)

186. In April of 1998, Microsoft issued a statement to certain ISPs with which it had restrictive agreements, waiving some of the restrictions in their agreements. For example, in a letter to Earthlink, Microsoft committed not to enforce provisions concerning distribution volumes or percentages, discussion, promotion, or advertising of IE and the use of IE as a standard or default browser. In addition, restrictions, performance obligations, and qualifications for referral fees were removed. (Cameron Myhrvold 8/7/98 Decl. ¶4; 4/21/98 Cameron Myhrvold of Microsoft to Leland C. Thoburn: Pl. Ex. 374, pp. MS98 0106631-32.)

187. However, ISPs in the Internet Connection Wizard were (and are) still prohibited from distributing and promoting Navigator with "preference." IE must be discussed, promoted, or advertised so that in its entirety, its treatment is no less prominent and favorable than that accorded to Navigator.

188. Moreover, restrictions were not waived for ISPs who were OLSs. For example, the contractual restrictions in Microsoft's agreement with AOL, the largest provider of Internet access, were not waived. Based on his talks with executives of AOL, James Barksdale, Netscape's CEO, was convinced in July of this year that AOL was prohibited from distributing Navigator because of its contract with Microsoft. (James Barksdale 7/16/98 Dep. Tr. 34-37.) Brad Chase of Microsoft confirmed that the

restrictions in the OLSs agreements were not removed. (Brad Chase 3/25/98 Dep. Tr. 169-170, 173-176.)

189. At least one ISP was not aware of Microsoft's asserted waivers of ISP restrictions. Mr. Von Rump of MCI testified at his deposition that he had discussed an agreement with Microsoft that would remove some of the restrictions, but that neither party had yet signed it. He was unaware of Microsoft's waiver announcement and had not been notified of it. He also testified that he believed the unsigned agreement would not allow MCI to make Navigator its default browser because that would give it preferential treatment compared to IE. (Stephen Von Rump 9/3/98 Dep. Tr. 33-34, 40.)

190. According to Microsoft, its 1998 agreements with ISPs will not contain restrictions. However, Microsoft remains free to reimpose even the waived restrictions, and whatever the extent of Microsoft's waiver, it did not undo the harm to competition that had already occurred.

191. As I explain below, relegating Microsoft's competitors to distribution through decidedly inferior channels has serious consequences in foreclosing its competitors and raising their costs.

192. In these agreements, Microsoft offered ISPs valuable space on its desktop. But rather than trading desktop space for financial remuneration, Microsoft placed requirements on ISPs that hindered their ability to promote or distribute Netscape Navigator. Again, given Microsoft's position in operating systems, these provisions are anti-competitive. Their purpose and effect are to reduce the ability of

competing browser manufacturers to distribute and promote their browsers through leading ISPs. Regardless of whether such provisions would be anti-competitive in themselves if put in place by a company with a small share of operating systems, they are certainly anti-competitive when Microsoft uses them to protect its dominant position in operating systems.

F. Exclusionary Agreements with Internet Content Providers

193. ICPs create program content for the World Wide Web. Microsoft has also promoted the use of IE and restricted the promotion and distribution of other browsers in its agreements with ICPs for its Channel Bar. (Examples appear in Pl. Ex. 1114.)

194. ICPs valued the opportunity to have a channel on the Microsoft desktop, because it encouraged users to visit the ICPs' Web sites, which in turn increased the ICPs' ability to promote their own products and to sell advertising space on their Web pages. For example:

- (i) David Shnaider of Ziff-Davis expressed the opinion that, "...a preferred position on the active desktop — which means being bundled into the operating system — is of almost incalculable value." (1/5/97 "ZD/MSN Meetings in Seattle," D. Shnaider to J. Ballowe: Pl. Ex. 201.)
- (ii) Steve Wadsworth, Vice President of Business Development and Strategic Planning for Disney Online, stated "...Disney believed that entering into a promotional deal with Microsoft was highly valuable because of Microsoft's ability to create icons or 'channels' that would be located on the Windows 'desktop.'" (Steve Wadsworth Decl. 4/23/98 ¶4.)

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195. Typically, the general nature of the agreements was that, in return for a prominent position on Microsoft's Channel Bar, ICPs agreed not only that they would promote IE, but also that they would not promote or distribute competing browsers. Some of the more restrictive provisions typically included in the agreements are as follows:

- a. An ICP must agree to promote IE and no other browser as the browser software of choice for specified Web sites ("Other browsers" are defined in the contracts as the top two most widely used browsers, exclusive of IE.) (For example, see Section 1.20 in the 6/26/97 Active Desktop Marketing, Distribution & Promotion Agreement between Microsoft and Hollywood Online, Inc.: PI. Ex. 1159, TM 000056.);
- b. An ICP must not distribute any other browser besides IE as an integral part of any channel client for use on Windows and Macintosh platforms;
- c. ICPs and their affiliates may not compensate a company that produces other browsers for carrying or promoting the ICPs' content or logos.

196. Examples of these restrictions for particular ICPs include:

- (i) The agreement with CNET specifies that "Company and its Affiliates shall distribute Internet Explorer and no Other Browser..." (7/14/97 Active Desktop Marketing, Distribution & Promotion Agreement between Microsoft and CNET, Inc.: PI. Ex. 1163, p. CNET 000032, Section 2.3(a).)
- (ii) The agreement with CondéNet Inc., stipulates that CondéNet will not enter into "Content Promotion Agreements" to exchange money or other valuable consideration with a company that produces "Other

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Browsers,” in return for promotion of CondéNet content. (7/15/97 Active Desktop Marketing, Distribution & Promotion Agreement between Microsoft and CondéNet Inc., Pl. Ex. 1164, p. 000005, Section 2.4.)

- (iii) Steve Wadsworth of Disney Online said that the Disney agreement with Microsoft stated that Disney “could not provide any company which produces ‘Other Browsers’ compensation for distributing, marketing, or promoting any Disney content or Disney logo. Disney would have preferred to have not been subject to these restrictions, but agreed to them in order to conclude the deal to gain access to the Microsoft desktop.”

Wadsworth went on to state, “In negotiating the contract with Microsoft, it was very clear that the ‘Other Browser’ Microsoft was concerned about was Netscape Netcaster. Netscape was specifically discussed in the context of Disney’s desire not to have an exclusive arrangement with Microsoft.” (Steve Wadsworth 4/23/98 Decl. ¶7-8.)

197. Yusuf Mehdi of Microsoft stated that the ICP agreements have not been commercially successful, and therefore they will not be renewed after they expire on September 30, 1998 (Yusuf Mehdi 8/8/98 Decl. ¶14.) However, again, damage to the competitive process has already occurred.

198. Microsoft also has restrictive agreements with other software vendors. For example, its “Internet Explorer Marketing, Distribution & Promotion Agreement” (6/6/97) with Intuit and its “Marketing, License, Distribution & Promotion Agreement” (12/7/96) with PointCast generally prohibit Intuit and PointCast from distributing other browsers with their most popular software products. (Pl. Ex. 1157, p. MS98 0100570; Pl. Ex. 1153, p. MS98 0100811.)

199. Again, given Microsoft’s position in operating systems, these provisions are anti-competitive, because they preserve Microsoft’s large share of business in operating systems by hindering competition from other browsers. In particular, the

provision that prevents ICPs from compensating a company that produces other browsers for carrying or promoting the ICPs' content or logos can have no purpose other than that of damaging those browser suppliers. It is not a profitable act by Microsoft independent of its effect of weakening the competition. Regardless of whether such provisions would be anti-competitive in themselves if put in place by a company with a small share of operating systems, they are certainly anti-competitive when Microsoft uses them to protect its dominant position in operating systems.

G. Microsoft's Conduct Limits the Availability of Cross-Platform Java Technology

200. Microsoft's anti-competitive actions restrain the use and availability of Java technology in order to protect the current dominance of the Windows operating system.

201. A Java Runtime Environment (JRE), which consists of a Java Virtual Machine (JVM), the Java platform core classes, and supporting files, is a software layer with its own API set that resides on top of an operating system and is designed to allow applications written in Java to function on different operating systems.

202. Microsoft has created its own implementation of Java technology that includes its own JRE. Michael Homer, Netscape Executive Vice President and NetCenter General Manager, explained in his deposition that "...Microsoft's implementation of Java is nonstandard and inconsistent with the reference version that Sun has published." (Michael Homer 8/4/98 Dep. Tr. 261.)

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203. Browsers (i.e., non-Microsoft browsers) are an important distribution channel for JREs, as Curtis Sasaki, Group Marketing Manager of SUN Microsystems, testified:

“Q: Is the distribution of the Java virtual machine through browsers important to Sun Microsystems?”

A: Yes.

Q: Why is that?

A: Because it has a very high distribution, so the number of users who receive that is very important.” (Curtis Sasaki 7/14/98 Dep. Tr. 93.)

204. As discussed above, Microsoft recognized Sun Microsystems’ Java as a threat to its operating system monopoly because Java, like browsers, offered the potential for eroding the applications programming barrier to entry.

205. Indeed, following, and based on, a meeting with Bill Gates in early 1997, Microsoft’s Ben Slivka described Java as “...the biggest threat to Microsoft” and wrote to Mr. Gates that “...clearly the work the Java team is doing has hit a raw nerve with you.” (4/14/97 re “java review with you,” B. Slivka to Bill Gates: Pl. Ex. 58.)

206. Microsoft concluded that there exists a need “... to fundamentally blunt Java/AWT momentum” to “...protect our core asset Windows.” (6/20/96 re “windows & internet issues,” Paul Maritz to Brad Silverberg et al.: Pl. Ex. 42, p. MS6 6010347.)

To this end Microsoft sought:

- (i) “...to put obstacles in Sun’s path” (8/25/97 Tod Nielsen to Bill Gates: Pl. Ex. 256, p. MS7 015730.)
- (ii) to “...wrest control of Java away from Sun” (4/14/97 re “java review with you,” Ben Slivka to Bill Gates: Pl. Ex. 58.)

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- (iii) "...to undermine SUN" with Apple (8/8/97 re "post agreement," Bill Gates to Paul Maritz et al.: Pl. Ex. 265.)

207. Microsoft undertook two basic approaches to eliminating the potential competitive threat posed by Java. First, Microsoft, recognizing that Netscape's browser was the primary distribution method for Java, sought to eliminate Java by eliminating Netscape's browser as a viable alternative. For example:

- (i) In July 1997, Paul Maritz of Microsoft wrote: "If we look further at Java/JFC being our major threat, then Nscp is the major distribution vehicle." (7/14/97 re "(not so) random marketing thoughts," Paul Maritz to Moshe Dunie, Bill Gates, et al.: Pl. Ex. 113, p. MS7 027366.)
- (ii) In charts prepared for a January 1997 presentation by Bill Gates to a meeting of all top Microsoft executives, the first "response" to the "platform challenges" of Java was to "increase IE share." (1/5/97 re "overview slides for Billg/NC&Java session with 14+'s on Monday," Paul Maritz to Bill Gates, Jim Allchin, Ben Slivka, and Brad Silverberg: Pl. Ex. 51, p. MS7 005534, 36.)

208. Second, Microsoft took actions to impede the cross-platform potential of Java by developing an interface called J/Direct. Any application that uses "J/Direct will run only on the Microsoft virtual machine." The default way of writing applications and applets for Microsoft's virtual machine causes some of those applications and applets not to be able to run properly on non-Windows platforms or even on non-Microsoft virtual machines running on Windows (James Gosling 9/10/98 Decl. ¶16). Microsoft's intent is revealed by its documents. For example:

- (i) Microsoft determined that a "strategic objective" was to "kill cross-platform Java by grow the polluted Java market." ("VJ98 SKUs and Pricing-Proposal": Pl. Ex. 259, p. MS7 033448.)
- (ii) As discussed above, Microsoft threatened and induced Apple to "undermine" Sun. An element of the strategy was a proposal that

Apple support J/Direct. (2/12/98 re “Java on Macintosh/IE Control,” Don Bradford to Bill Gates et al.: Pl. Ex. 268, p. MS98 0110953.)

209. Microsoft did not seek to “kill cross-platform Java” merely by developing its own version of Java and marketing it on the merits in competition with cross-platform Java. Instead, Microsoft used its monopoly powers over PC operating systems to induce and require industry participants to accept J-Direct (and IE which included J-Direct) instead of Java (and Netscape’s browser which included Java).

H. Anti-Competitive Effects

210. Microsoft’s conduct has prevented browser competitors from effectively competing on the merits for new business, artificially raised barriers to entry into both the browser and the operating system markets, and preserved Microsoft’s operating system monopoly. Microsoft’s conduct also threatens to monopolize the browser market.

1. The Significance of New Installations

211. As Microsoft and others have recognized, the vast majority of browser users tend to stay with the browser they receive with their PC if there is one or, if not, the browser provided by their ISP. For example, as Kumar Mehta wrote to Brad Chase and Yusuf Mehdi on March 27, 1997, “80% of those who do not use IE say they have no plans to switch to it.” Mr. Mehta goes on to note that this “means that if we take away IE from the o/s, most nav users will never switch to us.” (3/27/97 re “ie data,” K. Mehta to Brad Chase et al.: Pl. Ex. 204.)

212. By ensuring that virtually all new users receive Microsoft's browser either with their PC or from their ISP or both, Microsoft effectively excludes Netscape and other browser competitors from the market, limiting them to a declining base of existing users.

2. Microsoft's Conduct Has Foreclosed Browser Competitors from Competing on the Merits

213. As discussed above, Microsoft recognized that it would not be able to compete successfully against Netscape on the merits of IE alone. (2/24/97 Christian Wildfeuer to Adam Taylor et al.: PI. Ex. 202, p. MS7 004346.) This was in part because while no company is perfect, and while Netscape (like Microsoft) made mistakes, Microsoft recognized the strengths of Netscape's product offerings. For example:

- (i) As Bill Gates wrote on May 19, 1996, to his top executives:
 "...Netscape is quite an impressive competitor." (5/19/96 re "Some Thoughts on Netscape," Bill Gates to Paul Maritz et al.: PI. Ex. 41, p. MS6 6012952.)
- (ii) And as Yusuf Mehdi of Microsoft wrote on July 10, 1997, "Netscape has shipped a good product far ahead of us" (7/10/97 re "(not so) random marketing thoughts.." Yusuf Mehdi to Joe Belfiore et al.: PI. Ex. 113, p. MS7 027367.)
- (iii) Even comparing IE3 to Netscape's Navigator supplied long before, the most that Mr. Gates could say at the time was: "Both products have pluses." (5/19/96 re "Some Thoughts on Netscape," Bill Gates to Paul Maritz et al.: PI. Ex. 41, p. MS6 6012953.)

214. Microsoft's response was to exclude Netscape and other browser competitors from what Microsoft considers to be the two most important channels of

distribution — OEMs and ISPs. OEMs and ISPs are critical to browser distribution because many users get their browser from one or the other — and because few users switch from one browser to another unless they buy a new computer or switch ISPs.

215. Microsoft has succeeded in effectively excluding Netscape almost completely from the personal computer OEM distribution channel — one of the most important channels of browser distribution. (Cameron Myhrvold 4/24/98 Dep. Tr. 43-44.) OEMs that license Windows are required to take (and not remove) IE and for most OEMs, including the largest, that means including only IE with the PCs they ship.

216. Another important browser distribution channel is through ISPs (including OLSs). (Cameron Myhrvold 4/24/98 Dep. Tr. 43.) Here, Microsoft's restrictive agreements with AOL and CompuServe alone have tied up ISPs/OLSs with 65 percent of the subscribers to ISPs/OLSs considered to be in the "Top 80" by Microsoft at year-end 1997 ("Netscape Competitive Analysis": Pl. Ex. 835, pp. MS98 0112834-36). More than 95 percent of subscribers to ISPs in the "Top 80" subscribe to ISPs that were contractually required to distribute IE preferentially. (See Pl. Ex. 12.) In this context, Microsoft's claim that there is little foreclosure because only eleven ISPs out of thousands are in the Internet Connection Wizard clearly mischaracterizes the extent of foreclosure. (Richard Schmalensee 9/4/98 Expert Report p. 23, fn. 79.)

217. Microsoft has asserted its anti-competitive practices do not result in foreclosure because users can download browsers for free from the Internet. The most important point to remember here, though, is that users prefer to get their

browsers installed on their computers because consumers pay in terms of time and trouble to download a browser from the Internet. Browsers have become so large that they can take up to two hours to download over a typical user's modem, and the attempt to download can often be unsuccessful.

218. For example, as Michael Homer, Netscape's Executive Vice President and NetCenter General Manager, explained in his deposition, a download may be interrupted, or, even if the download is successful, it still may not be feasible to install the software. (Michael Homer 8/4/98 Dep. Tr. 54–55.) Moreover, according to Homer, "...the installation process can be confusing and difficult unless the users are fairly skilled users." (Homer Tr. 51-52.)

219. Thus, users are likely to settle for the browser that is already on their operating system. In fact, Microsoft's own studies show that most Internet users have never downloaded a browser. For example, Kumar Mehta of Microsoft reported to Brad Chase and Yusuf Mehdi in March 1997 that "Almost 60% of all surfers have never downloaded any software from the web. my sense is that these people are not very likely to download anything, let alone a browser that takes 2 hours to download, from the web." (3/27/97 re "ie data," Kumar Mehta to Brad Chase et al.: PI. Ex. 204.) Carl Stork, Microsoft general manager of hardware evangelism and business development, summarized this tendency by saying, "Well, I prefer furniture that is already assembled over furniture I have to assemble myself." (Carl Stork 8/11/98 Dep. Tr. 125.)

220. What is important is not whether users can download a competitor's browser, but whether users *will* download a competitor's browser under prevailing market conditions.

221. Microsoft claims that competitors can distribute browsers effectively and that Netscape distributed or will have distributed by its partners 250 million to 270 million copies of its browser in 1997 and 1998. (Defendant Microsoft Corporation's Memorandum In Support of Its Motion For Summary Judgment, 8/10/98, 9-10.) However, Netscape does not itself intend to do any of this distribution, and according to Michael Homer, Netscape's distribution by CD-ROM has been "almost none." (Homer Tr. 70.) James Barksdale also testified that Netscape will not distribute any copies; its 10,000 "partners" will distribute 150-170 million copies. (James Barksdale 7/16/98 Dep. Tr. 91-93.)

222. Further, to the extent this distribution is to be by mail, it is a very inefficient distribution method. (James Barksdale 7/16/98 Dep. Tr. 227-228; see also Microsoft's Brad Silverberg's statement above quoted in paragraph 175.) Even though browsers on CD-ROMs distributed in the mail are free, customers must take time and trouble to install the software. Mr. Stork explained that using a CD-ROM is easier than downloading, but installing from a CD-ROM generates questions "...and has the potential for errors, especially if the customer has moved files....loaded software on and futzed with" it. (Carl Stork 8/11/98 Dep. Tr. 42-43.) As a result, customers are unlikely to switch to another browser if they already have a browser that is up and running. Moreover, even to the extent that distribution by mail is a means of getting

new browser users, it is a substantially more costly method. Relegating Netscape to such a method is an example of raising rival's costs.

223. Microsoft's foreclosure of Netscape and other browser competitors is shown by comparing Microsoft's share of browsers distributed by ISPs that have made IE their default browser with ISPs that have not made IE their default browser. (See Pl. Ex. 11.)

224. According to a Microsoft document, at year end 1997 Microsoft enjoyed a 94 percent weighted average share of browser shipments by ISPs who agreed to make IE their default browser, compared with a 14 percent weighted average share of browser shipments by ISPs who did not make IE their default browser. Microsoft's weighted average share of browser usage by subscribers to ISPs who made IE their default browser was over 60 percent; Microsoft's weighted average share of browser usage by subscribers to ISPs who did not make IE their default was less than 20 percent. If one is interested in the number of new browser users, then the fraction of existing subscribers accounted for by a given service is only a rough measure of the import of that service. However, as Microsoft's internal documents and analyses make clear, AOL and CompuServe are of great importance in acquiring new browser users.

225. The difference in IE usage across subscribers of different ISPs can also be analyzed by looking at IE's share of "hits" as reported by AdKnowledge, Inc., a company that develops and markets advertisement management products for the World Wide Web. AdKnowledge stores its clients' advertising on a server and delivers

an advertisement when a particular page is accessed by a user. AdKnowledge keeps a record of the number of times a complete advertisement is sent from its server to a browser as well as the number of times a user clicks on a banner ad (each download or click counts as a "hit"). With every hit, AdKnowledge collects information about the user who accessed the page, including information about the user's browser and the domain from which the browser is surfing. The domain name can frequently be used to identify the ISP that the user uses to access the Internet.

226. A sample of AdKnowledge data was obtained in order to analyze how Microsoft's share of the browser market varies across ISPs, some of whom have entered into agreements to distribute IE preferentially, and some of whom have not entered into any such agreements. One data set reports all hits by users of all ISPs; these data are broken out by browser type. A second data set reports hits by users of particular ISPs; these data are broken out by ISP and browser type. Because millions of hits are logged every day, data collected on one day of each month (the second Wednesday) constitute the sample. In order to obtain data from AdKnowledge about a particular ISP, the domain name of the ISP must be known. A domain name is essentially the Internet address of a server. Domain names were determined using a search engine on an ISPs.com Web site (www.isps.com). While the AdKnowledge data are not as complete as one might wish,⁶ they show trends that are unmistakable.

⁶ For example, not every ISP can be readily individually identified in the AdKnowledge data. The domain names, and thus the data for some of the ISPs could not be found. Further, hits by AOL subscribers are under-represented because of AOL's use of "caching," a device that makes repeated "hits" on a given page by the same or different AOL subscribers occur through AOL's own server rather than in a manner measured by AdKnowledge. In the way in which I have used the data, this phenomenon leads to an understatement of the effects of Microsoft's restrictive practices.

227. PI. Ex. 4 shows Microsoft's monthly share of browser usage by three categories of ISPs, from January 1997 through August 1998. The top line shows Microsoft's share of usage among subscribers to AOL and CompuServe rising sharply. PI. Ex. 3 shows the same data as a three-month moving average. These companies (now merged) were chosen because they represent the largest ISPs (with a total of more than 11.5 million subscribers and about 65 percent of all subscribers to the services in the "Top 80" as of year-end 1997), and because AOL and CompuServe, as on-line service providers, were contractually restricted in their promotion and distribution of non-IE browsers to a greater extent than were most other ISPs. ("Netscape Competitive Analysis," PI. Ex. 835, pp. MS98 0112834-36.) The middle line shows Microsoft's share for all ISPs. The bottom line shows Microsoft's share for the ISPs within the "Top 80" which Microsoft listed as having "IE Parity" (ISPs whose browser choice was not known to be contractually restricted), which had 10,000 or more subscribers, and for which data were available.

228. The effects are striking. Microsoft's share of "IE Parity" browser usage — the category that is contractually neutral — rises in twenty months from 20 percent to just under 30 percent. This rise includes the effects of technological improvement in IE. By contrast, the "All ISPs" line shows an increase in Microsoft's share from 20 percent to 49 percent. Finally, for AOL and CompuServe, Microsoft's share rose from just over 20 percent to over 87 percent. (It is worth noting that the dramatic jump in that share occurred *before* the introduction of IE4 in October 1997.)

229. The exclusion of Netscape and other browser competitors from the OEM channel has been even greater. Although several OEMs (including the largest, Compaq) have sought to replace IE with Netscape (see paragraph 147 above), none is now permitted to do so. And, as also discussed earlier (see paragraph 150), the fact that IE is required to be included means in most cases that only IE will be included.

3. Microsoft's Browser Market Share Is Now High and Increasing

230. Because of Netscape's innovations and success in creating and distributing the world's first widely used browser, Netscape initially had a very large share of the browser market (Pl. Ex. 5). Microsoft's browser share at the beginning of calendar year 1997 was approximately 20 percent (Pl. Ex. 5), and had been significantly lower earlier.

231. It is difficult to measure precisely what the changes in share have been in the last twenty months. This is true for three reasons. First, there is no universally accepted set of share statistics. Second, most of the statistics that do exist are browser usage shares that reflect the usage of all browsers whenever acquired; because of Netscape's large (and Microsoft's relatively small) share prior to 1997, present usage shares significantly understate Microsoft's share of current browser acquisitions. Third, usage shares are sometimes based on the number of browser users (in which case each browser used in the period measured is counted equally regardless of how often it is used in the period) and sometimes based on the number

of times browsers are used in the period (in which case a browser is counted each time it is used).

232. Regardless, however, of how share is measured, it is clear that Microsoft's browser share has increased dramatically, and Netscape's browser share has fallen sharply, over the past two years. For example:

- (i) On February 6, 1998, Microsoft estimated its share of the browser market had increased from 6 percent in June 1996, to 31 percent in June 1997, to 40% in December 1997, and to 45% in January 1998, and projected that Microsoft's share would increase to 57 percent in June 1999, to 61 percent in June 2000, and to 65 percent in June 2001. (2/6/98 Haas to Chase et al.: Pl. Ex. 310 and Pl. Ex. 14.)
- (ii) As discussed above, data from AdKnowledge (a company that develops and markets advertisement management products for the World Wide Web) show Microsoft's share of browser usage increasing from 20 percent in January 1997 to 49 percent in August 1998. (Pl. Ex. 5.)

233. Microsoft's incremental share is even higher.⁷ For example:

- (i) Microsoft estimates that its incremental share of users for the last six months of 1997 was 57 percent. (Pl. Ex. 8.)
- (ii) The AdKnowledge data show that Microsoft's incremental share of browser usage for the twenty months ending in August 1998 was 57 percent and that Netscape's incremental share of browser usage was 40 percent over the same period. (Pl. Ex. 6 and Pl. Ex. 7.) Since the incremental usage shares reflect increased usage of previously installed browsers, as well as the usage of browsers acquired during the period, even these incremental usage shares understate Microsoft's share (and overstate Netscape's share) of usage of new browsers.
- (iii) In May 1998 Microsoft estimated that, among subscribers to "Top Account" ISPs, its share of new browser users was 76 percent and

⁷ Incremental share of users is defined as the change in the number of IE users divided by the change in total users. Incremental share of browser usage is defined as the change in IE "hits" divided by the change in all "hits."

projected that its share would increase to 88 percent by December 1998. (Pl. Ex. 2.)

234. Microsoft relied on its increasing browser market share, and the expected continued increase due to its practices, in trying to convince ICPs to abandon Netscape and agree to Microsoft's exclusivity provisions. For example, Microsoft, using forecasts from the Giga Information Group, told ICPs that its browser share had increased from 20 percent to 45 percent from 1996 to 1997, and would increase to 65 percent in 1998 and 75% in 1999. (Pl. Ex. 208; see also, Pl. Ex. 15.)

235. Thus there is a substantial probability that Microsoft's anti-competitive actions will permit Microsoft to retain its power over price in operating systems and will inhibit development of Microsoft-independent innovations. Both would harm consumer welfare.

236. Internet browsers that are capable of supporting applications that are operating-system independent are a threat to the Windows monopoly. If Microsoft minimizes competition from other browsers and chooses to support only Windows-based technology, Microsoft can maintain its monopoly power in operating systems with little threat of entry.

237. Microsoft's anti-competitive actions are aimed at hindering the success of non-IE browsers, but they are likely to send a message to all software developers: Microsoft will impede any innovation that threatens Microsoft's monopoly in operating systems. This will lessen developers' incentives to develop products that provide alternatives to the Windows platform. As a result, the range of software products

consumers can choose from will be limited. Narrowed choice and slowed technological progress can never improve the welfare of consumers and are likely to decrease it. If Windows were truly a superior product, it would succeed on its merits. The actions Microsoft is taking will prevent that from being necessary.

I. Microsoft Is Attempting to Monopolize the Browser Market

238. Microsoft is using its monopoly power over PC operating systems to secure monopoly power over Internet browsers. While Microsoft has not yet succeeded in monopolizing browsers, Microsoft's browser market share grew significantly and Netscape's browser market share declined significantly from 1996 to the middle of 1998. As described in detail above, several sources indicate that Microsoft enjoys a browser market share of about 50 percent or more.

239. If Microsoft succeeds in acquiring a monopoly in Internet browsers, the monopoly will be protected by substantial barriers to entry. With ownership of the desktop, Microsoft can easily control the most common browser distribution channels, including distribution through OEMs and ISPs. Without an effective method of distribution, competitors' browsers pose little threat to IE. Moreover, natural barriers to entry would protect Microsoft's browser market share. Developers would tend to create Web sites that accommodate the dominant IE technology, which would increase users' demand for IE, generating a cycle that would reinforce IE's monopoly in the browser market.

240. As already discussed, Microsoft's monopoly in the market for Internet browsers would reinforce its monopoly over PC operating systems by preserving the barrier to entry created by network effects. Microsoft's dominance of the market for Internet browsers would also reinforce its monopoly over PC operating systems because a potential competitor in operating systems would need access to a compatible browser to be commercially viable. Thus, entry into the operating systems market would require either 1) entry into the browser market, where the entrant would face the network effects and other barriers to entry described above, or 2) the cooperation of Microsoft to make IE compatible with the competitor's operating system. If developers of competing operating systems did not have the open access to the IE technology that they would need to ensure compatibility, they would be at a constant disadvantage in providing a viable alternative to Windows in a timely fashion.

V. CONCLUDING COMMENTS

241. Microsoft has engaged in a number of anti-competitive actions. In particular, Microsoft's price for its browser, together with its other actions, is not profit-maximizing except for its effect of preserving Microsoft's operating system monopoly (and possibly gaining further monopoly profits by monopolizing the browser market and its ancillary revenues). Microsoft is providing its browser at zero price. Indeed, to the extent that Microsoft grants valuable concessions to firms to persuade them to promote IE, the price is effectively negative. Microsoft's browser pricing is thus another element of its anti-competitive behavior. Taken together with Microsoft's other actions, this pricing is anti-competitive to the extent that absent any deleterious effects

on competition the pricing would not be profit-maximizing. Any foregone profits associated with its anti-competitive conduct can be recouped through the protection of Microsoft's operating system monopoly. Further, Microsoft may also gain from the reduction in competition in other markets. No later browser competitor will be able to enter to bid away such profits because of barriers to entry, including network effects and the threat that Microsoft can always again price its browser at zero.

242. If Microsoft's IE browser and Windows operating system are superior products, then competition will lead OEMs, ISPs, ICPs, and customers to choose them, and Microsoft need not artificially influence those choices. But Microsoft has engaged in anti-competitive conduct that has no compelling economic justification but for its effect of restricting competition. These actions will allow Microsoft to protect its monopoly in the market for operating systems and to establish a monopoly in the market for browsers. This situation can never make consumers better off than they would be with unfettered competition, and it is likely to make consumers worse off.