

OVERVIEW

Plaintiffs' Joint Proposed Findings of Fact, and the evidence on which they are based, demonstrate that Microsoft has engaged in a broad pattern of unlawful conduct with the purpose and effect of thwarting emerging threats to its powerful and well-entrenched operating system monopoly. Most prominent among these was the threat posed by competing Internet browsers, particularly Netscape's Navigator. Non-Microsoft browsers, if widely used, promised to form the center of an emerging middleware platform that could have helped to erode the high applications barrier to entry that protects Microsoft's monopoly.

Microsoft acted quickly to squelch this evolving middleware threat to what it sometimes called its "desktop paradise," first by proposing an illegal division of markets, and then by embarking on a predatory campaign to restrict the distribution and usage of Netscape's browser and, in Microsoft's words, to "cut off Netscape's air supply." But Microsoft's broad anticompetitive campaign has not been limited to preempting the browser threat; Microsoft sought to curtail other actual or potential middleware threats to its operating system monopoly, including Sun's Java, Intel's Native Signal Processing, and Apple's QuickTime. Microsoft's actions demonstrate that it believed it could not win simply by competing on the merits. As one of Microsoft's top executives candidly acknowledged: "we were very concerned that if the user saw Netscape Navigator side by side with Internet Explorer . . . we would lose."

Microsoft's predatory campaign worked. It succeeded in preserving Microsoft's monopoly power by preventing the successful development of alternative platforms that could have eroded its Windows monopoly and given consumers greater choice. In other words, Microsoft prevented consumers from getting what they wanted so that Microsoft could keep what it had -- a monopoly in operating systems.

For a long time now -- and, if Microsoft's actions to maintain its monopoly are not halted, for well into the future -- personal computer consumers are locked into a Microsoft world, one in which a single company essentially controls the configuration of desktop computing. The evidence detailed in these Proposed Findings establishes both the anticompetitive tactics Microsoft employed and the harm to competition and consumers those tactics caused. What can never be fully known, of course, are (i) the innovative products that would have come to market had developers not been deterred by Microsoft's illegal assault on potential competitors; and (ii) the benefits that consumers would have realized if Microsoft's operating systems monopoly had been eroded. Such products and consumer benefits are inevitable wherever market competition flourishes.

Monopoly Power

Microsoft has monopoly power in the market for operating systems for Intel-compatible personal computers ("PCs"). Microsoft's operating systems account for an overwhelming share -- well over 90% -- of that market and, indeed, of all operating systems for PCs. Microsoft's customers -- computer manufacturers ("OEMs") and the vast majority of PC users -- have no commercially viable alternative to the Windows operating systems. Microsoft is able to, and does, exercise its monopoly power over OEMs and PC consumers in a variety of ways.

Microsoft's monopoly power is protected, and has been protected for years, by high barriers to entry into the operating systems market, the most important of which is the applications barrier. The applications barrier to entry exists because applications written to

Windows will not run on other operating systems and other operating systems cannot effectively compete against Microsoft unless they can offer PC users a wide array of applications similar, in depth and breadth, to the vast set of applications that exists for Windows.

The Middleware Threat

In the mid-1990's, Microsoft identified a potential threat to its monopoly: platform level middleware such as Netscape's Navigator browser. Internet browsers run "on top" of operating systems and contain interfaces ("APIs") to which other application programs can be written. Because Internet browsers and other middleware can run on multiple operating systems, they can enable application developers, by writing programs to the APIs on the middleware, to develop programs that are platform neutral -- that is, that can run across a variety of operating systems. By potentially "commoditizing" the underlying operating system, browsers thus offer the potential to erode the applications barrier to entry and, ultimately, Microsoft's operating system monopoly. Netscape's browser posed a particularly serious threat to Microsoft: it was widely adopted by PC users to browse the rapidly emerging World Wide Web, it was cross platform, and it therefore had the potential to become a ubiquitous platform to which other application programs could be written.

Another serious threat to Microsoft was the development of Java by Sun Microsystems. Java too can serve as an alternative platform to which developers can write applications that run across different operating systems. The Java and Netscape threats were mutually reinforcing because the Netscape browser was a primary distribution mechanism for Java and because Java applications are especially well-suited to the Internet and to other network-based computing needs and, therefore, complement the browser.

Microsoft Quickly Acted to Thwart Potential Middleware Threats to Its Monopoly

Microsoft has engaged in a broad pattern of conduct to exclude or eliminate products that Microsoft believed could help erode the applications barrier to entry and thereby threaten its Windows monopoly. Microsoft began its attack on the middleware threat by proposing to Netscape that it agree not to compete and to divide the browser market. Microsoft wanted Netscape to agree not to offer its browser and APIs for use on Windows 95; in return Microsoft would agree not to compete with Netscape on browsers developed for other, niche operating systems. Netscape rejected Microsoft's proposal. Over time, Microsoft made similar efforts to enter into illegal market-division agreements, or took other anticompetitive action, with Intel, Apple, and IBM.

Unable to protect its monopoly through illegal agreements not to compete with its rivals, Microsoft engaged in a predatory and anticompetitive campaign effectively to exclude those rivals from the market or, at the least, to impede and weaken them so that they would no longer present serious threats. As part of its campaign, firms such as Compaq that assisted Microsoft in excluding its rivals were rewarded with lower prices and better technical and marketing support for Windows. In contrast, companies such as IBM, Gateway, and Apple that refused to exclude Microsoft's rivals or that distributed competing products were threatened or actually penalized with higher prices and inferior support for Windows or the loss of other, critical Microsoft products.

Microsoft Targeted Netscape and Java

The most direct and extensive part of Microsoft's illegal campaign was aimed at rival browsers, particularly Netscape's Navigator. Among other things, Microsoft tied its own, separate browser product, Internet Explorer, to its Windows operating systems and required both OEMs and PC users

to take Internet Explorer as a condition of obtaining the operating system. Microsoft, like the rest of the industry, recognized that users demand for browsers was separate from demand for operating systems -- that is, users wanted the option of obtaining Windows with no browser or only with a browser other than Internet Explorer. Nevertheless, Microsoft tied the two together, refusing to sell Windows 95 or Windows 98 without Microsoft's browser or to permit OEMs to remove the browser before selling their PCs loaded with Windows. With Windows 98, Microsoft also unnecessarily "welded" the browser to the operating system, so that using another browser would be a "jarring experience," further excluding rival browser suppliers.

Microsoft also entered into a variety of other restrictive agreements with OEMs, Internet access providers, and Internet content providers, all of which made it substantially more difficult for Netscape to distribute its browser and raised its costs. None of these agreements served any legitimate business purpose. In addition, Microsoft gave its browser away for free, without any expectation or basis for believing that it could defray the huge development, promotion, and distribution costs associated with Internet Explorer other than by entrenching its operating system monopoly.

Similarly, Microsoft engaged in predatory and anticompetitive conduct to impede other platform threats, particularly Java. Among other actions, Microsoft "polluted" Java by developing and distributing its own, non-cross-platform version, induced third parties not to support cross-platform Java and to help fragment the Java platform, and engaged in anticompetitive conduct to impede the distribution of cross-platform Java.

Consumers and Competition Have Been Injured

Microsoft's predatory campaign has caused significant anticompetitive effects, has injured consumers, and threatens to cause even greater harm in the future. Microsoft's conduct has succeeded in blunting cross-platform middleware threats and thereby maintaining the applications barrier to entry. Microsoft substantially impeded the most effective channels of distribution for both Netscape and Java, raised its rivals' costs, and, ultimately, effectively eliminated Netscape as a platform threat, further entrenching and maintaining Microsoft's operating system monopoly. By hampering and weakening Netscape, Microsoft's predatory conduct has also dangerously threatened monopolization of the market for Internet browsers.

Microsoft's entire course of conduct aimed at blunting potential middleware threats has further reinforced the applications barrier to entry by maintaining and expanding Microsoft's ability to influence and control standards in the increasingly important area of network-based computing, and thereby to extend its monopoly power into servers, Internet protocols, and other industry segments. Microsoft's efforts to preempt threats to this control will, in part, inhibit the emergence of other potential paradigm shifts.

Microsoft's illegal maintenance of its monopoly has already deprived consumers of the potential benefits of greater choice, more innovation, and lower prices for Windows, and greater innovation in markets related to Windows, that might have resulted from uninhibited operating system competition.

The Proposed Findings

The Proposed Findings of Fact which follow are substantial, as is the evidence in the record which supports Plaintiffs' claims. The full Table of Contents provides a top-level summary of the

proposed findings and the supporting evidence. Background findings and evidence are set forth in Part I. In the body of the Findings, individual proposed findings are preceded by Arabic numerals while the detailed evidence that supports each finding follows it and is designated by small Roman numerals.

I. Background

1. On May 18, 1998, plaintiffs the United States and twenty States and the District of Columbia filed actions against defendant Microsoft Corporation, alleging violations of the Sherman Act, 15 U.S.C. §§ 1 & 2, and the antitrust and consumer protection laws of the respective plaintiff States. The actions were consolidated, and expedited discovery ensued. Trial began on October 18, 1998, and concluded on June 26, 1999.

2. Defendant Microsoft Corporation (“Microsoft”) is a corporation organized under the laws of the State of Washington with its headquarters in Redmond, Washington.

i. Answer ¶ 41.

3. Microsoft’s principal business is the licensing of computer software, which it conducts on a world-wide basis. Microsoft licenses computer software throughout the United States and elsewhere and delivers operating systems to computer manufacturers and others across states lines and international borders, and its business has had a substantial effect on interstate commerce.

i. Answer ¶ 5.

4. Microsoft, among other things, licenses operating system and application software for personal computers. The personal computer industry, which has seen tremendous growth over the last decade, is an important, robust sector of the United States economy. Microsoft software dominates critical sectors of that industry.

i. See infra Part II (Microsoft possess monopoly power in operating systems).

ii. Tevanian Dir. ¶¶ 6, 14, 22, 35 (Microsoft is also dominant in a number of applications, including office productivity suites).

5. A Personal Computer (“PC”) is a computer designed for use by one person at a time.

i. Microsoft Press Computer Dictionary, at 361 (3d ed. 1997) (GX 1050).

5.1. PCs (which include both desktop and laptop models), can be distinguished from more powerful, more expensive computers known as Servers, which are designed to provide services and functionality to multiple users, either in local area network or over the Internet.

i. Warren-Boulton Dir. ¶ 20.

ii. Microsoft Press Computer Dictionary, at 430 (3d ed. 1997) (GX 1050).

5.2. A typical PC system consists of a number of components, including a microprocessor, dynamic memory, a hard disk, a keyboard, a monitor, and an operating system.

i. Warren-Boulton Dir. ¶ 20.

6. PCs are built primarily by firms known as Original Equipment Manufacturers (“OEMs”). OEMs typically purchase from different third-party vendors and preinstall various hardware and software components for their systems, including the operating system and application software.

i. Warren-Boulton Dir. ¶ 23.

7. OEMs develop and sell their PCs to consumers in a competitive market and design their PCs and their hardware and software features to respond to consumer demand.

i. See infra Part II.A.; ¶ 15.1.1.

ii. Warren-Boulton Dir. ¶ 24.

8. An Operating System is the “central nervous system” of the PC.

i. Barksdale Dir. ¶ 69.

8.1. An operating system performs two basic functions. First, the operating system allows the various components of the PC to communicate and function with each other; it provides “the software that controls the allocation and usage of hardware resources such as memory, central processing unit time, disk space, and peripheral devices.”

- i. Microsoft Press Computer Dictionary, at 341 (3d ed. 1997).
- ii. Farber Dir. ¶ 11 (the operating system “controls the execution of programs on computer systems and may provide low-level services such as resource allocation, scheduling and input-output control in a form which is sufficiently simple and general so that these services are broadly useful to software developers”).

8.2. Second, an operating system provides a “platform” by exposing Applications Programming Interfaces (“APIs”) that applications use to “call upon” the operating system’s underlying software routines in order to perform various functions, such as displaying a character on a monitor.

- i. Schmalensee Dir. ¶¶ 93-94.

9. An Application is a software program “used to perform specific user-oriented tasks”.

- i. Farber Dir. ¶ 11.

9.1. Applications typically “run on top” of the operating system and draw upon the services that the operating system’s “platform” provides.

- i. Warren-Boulton Dir. ¶ 22

9.2. The term Platform is used in the software industry to describe software that “provides features or services that can be used by software applications.”

- i. Schmalensee Dir. ¶ 93.

10. Microsoft produces a number of PC operating systems, including MS-DOS and

successive versions of its Windows operating system, the most recent version of which is Windows 98. Since at least the mid-1990s, Microsoft has dominated the market for PC operating systems. As will be explained, Microsoft's market share has remained well in excess of 90% during that period.

i. See infra Part II.B.2.; ¶ 21.

11. Applications are produced by numerous firms, including firms like Microsoft that also produce operating systems and others, known as Independent Software Vendors ("ISVs"). Microsoft's application software is dominant in several key categories, most notably in office productivity suites.

i. See infra Part V.F.1.b.(1); ¶ 287.2.1.

12. All the components of a PC system -- the microprocessor and other hardware, operating system, and applications software -- must be compatible with each other. For instance, software, including the operating system and applications, must be designed to be compatible with the PC's microprocessor, and application software must be compatible with the operating system.

12.1. There are different types of PC systems.

12.1.1. An Intel-compatible PC is one designed to function with Intel's x86/Pentium families of microprocessors or compatible microprocessors manufactured by Intel or other firms. Microsoft's Windows operating system, and different types of UNIX operating systems, are examples of operating systems that run on Intel-compatible PCs.

i. Fisher Dir. ¶ 62.

12.1.2. There are other types of PCs that use microprocessors that are not Intel-compatible, such as the Apple Macintosh computer system. Operating systems designed to run

on Intel-compatible PCs, known as Intel-compatible PC operating systems, will not function on an incompatible PC like the Macintosh; and operating systems designed for an incompatible PC like the Macintosh will not function on an Intel-compatible PC.

- i. Gosling Dir. ¶ 7.

12.2. Applications programs are typically written to run on a particular operating system and cannot run on other operating systems unless the developer goes to the time and expense to “port” the program to the other operating system. For example, the version of Microsoft’s popular Office productivity suite designed to run on Microsoft’s Windows operating system cannot run on the Apple Macintosh or even on other Intel-compatible operating systems.

- i. See infra II.B.3.b.(1); ¶ 26.1.2.

13. One of the most important applications today is an Internet Web browser (“browser”).

13.1. A browser is a “client application that enables a user to view HTML documents on the World Wide Web, another network, or the users’s computer; follow the hyperlinks among them; and transfer files.” A browser enables “the user to examine, display, scan, and navigate via the Internet” information located on the “Web.”

- i. Microsoft Press Computer Dictionary, at 505 (3d ed. 1997) (GX 1050).
- ii. Farber Dir. ¶ 11.

13.1.1. The Internet is a global network that links many millions of PCs and a smaller number of servers together. Begun in the early 1960s, the Internet exploded in popularity with the emergence of the World Wide Web (“Web”) in the mid-1990s.

- i. Maritz Dir. ¶ 50.

13.1.2. “The Internet is a global network of computers constructed by patching together many local area networks that use widely varying communication media such as telephone lines, dedicated data cables, and wireless links.” The Internet links PCs by means of servers, which run specialized operating systems and applications designed for servicing a network environment.

- i. Felten Dir. ¶ 11.

13.1.3. In simplest terms, servers host and provide access to the Internet’s content. In the case of the Web, this content consists principally of Web Pages, which are created by Internet Content Providers (“ICPs”). There are millions of web pages located on the thousands of servers that comprise the Internet.

- i. See infra Part V.E.1.a.; ¶¶ 259, 262.

13.1.4. Web pages can be accessed over those thousands of servers from millions of PCs because the Internet uses a number of widely-accepted standards. For instance, web pages are typically written in Hypertext Markup Language (HTML) and are transferred between servers and PCs using a common protocol known as Hypertext Transfer Protocol (HTTP).

- i. Felten Dir. ¶ 13. (The Web is “characterized by a set of standard data formats, including HyperText Markup Language (‘HTML’), and a set of standard communication protocols, such as HyperText Transfer Protocol (‘HTTP’), that together allow computers to share multimedia documents that may contain links to other such documents.”).

13.1.5. Consumers typically access the Internet through the services of an Internet Access Provider, which can be an Internet Service Provider (“ISP”), such as Earthlink or AT&T Worldnet, or an On-Line Service (“OLS”), such as America Online or Prodigy. Internet access providers are commercial firms that connect users to the network of servers that comprise the Internet.

i. See infra V.D.1.; ¶ 213.1.

13.2. Although graphical web browsers have existed since 1993, the first widely-popular commercial graphical browser was developed and brought to market by Netscape Communications in late 1994. Microsoft introduced its browser, Internet Explorer, in 1995.

i. See infra Part III.B.1.; ¶ 53.1.1; Part V.B.2.c.; ¶ 126.