

**Maintenance of Monopoly:
*U.S. v. Microsoft (2001)***

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INTRODUCTION

In May 1998, the U.S. Department of Justice (DOJ), twenty individual states, and the District of Columbia filed suit against the Microsoft Corporation claiming that Microsoft had monopolized the market for personal computer (PC) operating systems and had used its monopoly to engage in a wide range of antitrust violations.¹ The case was tried in federal district court from October 19, 1998, through June 24, 1999. The court reached its findings regarding the facts of the case on November 5, 1999, and its legal conclusions on April 3, 2000.

Microsoft's appeal to the Circuit Court of Appeals for the District of Columbia was decided on June 28, 2001, followed by extensive settlement discussions among the various parties—the Department of Justice, the states, and Microsoft. The appellate court affirmed the monopolization claim, reversed other findings by the district court, and remanded the case back to the district court to find an appropriate remedy. Following further settlement discussions among the various parties—DOJ, the states, and Microsoft—DOJ and Microsoft reached a settlement agreement. Nine states opted not to join the settlement, proposing a different remedy. A thirty-two-day remedy trial was held, and, on November 1, 2002, the district court

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¹*U.S. v. Microsoft*, Civil Action No. 98-1232. One state settled with Microsoft before the case went to trial.

issued a remedy ruling. Eventually, all of the remaining states settled with Microsoft.

While its ultimate impact on antitrust jurisprudence remains unclear, there is no doubt that from the public's perspective *U.S. v. Microsoft* was the antitrust case of the 1990s, and arguably from a policy perspective one of the most significant antitrust cases of the twentieth century. The investigation, the trial, and its aftermath received wide press coverage throughout. A number of the major actors in the drama became household names, as much the result of the public relations battle among the parties as of the litigation itself.

Microsoft's problems did not end with the resolution of the U.S. Government's case. Microsoft was sued in class actions brought by attorneys on behalf of customers who were alleged to have paid too much money for their Windows operating systems. Most of these lawsuits have now been settled for very substantial sums of money, running into the hundreds of millions of dollars.

To make matters worse from Microsoft's perspective, the turn of the century coincided roughly with increased enforcement activity by the Directorate General for Competition of the European Union. Rather than focusing on browsers and on PC operating systems, the EU directed its attention to the "player," which allows users to stream audio and video content from the Web and to servers. Real Networks, which dominated the market with its Real Player, was being threatened by Microsoft's decision to integrate the Microsoft Player into its operating system.

After an extensive investigation, the European Commission concluded in March 2004 that Microsoft's bundling of its operating system with its player constituted a violation of the EC law that characterized certain anti-competitive monopolizing practices. The EC ordered Microsoft to pay a substantial fine and to put onto the market a second version of its operating system Windows XP without a player. Microsoft's appeal of the EC's ruling (to the Court of First Instance, an intermediate appellate court) led to a September 2007 ruling that strongly supported the EC. As of the early autumn of 2007, the EC continues to monitor and to question Microsoft's responsiveness to its required remedies.

In sum, there is much in the Microsoft case that is of import to the twenty-first-century competition in high technology. Not only does Microsoft's behavior continue to be scrutinized, but also courts are now beginning to look at the implications of the Court's ruling in *U.S. v. Microsoft* on other high-technology companies such as Intel and Google.

At the heart of the *Microsoft* case was the Government's claim that Microsoft had engaged in a range of anticompetitive acts that was designed to maintain its operating system (OS) monopoly. The Government did not question the source of Microsoft's historical success. The Government did, however, claim that consumers were harmed by Microsoft's conduct, in part because consumers were paying higher prices for their operating

system software and in part because Microsoft's actions had reduced innovation in the software industry. In response, Microsoft argued that it was not a monopoly since it faced significant competitive threats in a highly dynamic industry. It further argued that its success should be seen as pro-competitive, since consumers had benefited as the result of the distribution of its high-quality, innovative software. If the court were to impose substantial antitrust remedies, Microsoft believed, competitive incentives would be reduced, which would lead to less, rather than more, innovation.

BACKGROUND

The Microsoft Corporation is a relatively young corporation, having begun its existence in the mid-1970s. Since that time, Microsoft has enjoyed exceptional and unparalleled growth and in the process has made millionaires of thousands of its employees. Many attribute this success to Microsoft's skill and foresight, while others cite an element of luck; all would most likely agree, however, that Microsoft has shown an uncanny ability to adapt its business plans and to market innovative technology successfully. With success, however, has come antitrust scrutiny, with various governmental agencies and private plaintiffs questioning whether Microsoft has used a range of practices to restrain competition, to exclude competitors, and to expand its market power beyond the operating system market.

The first governmental investigation of Microsoft began with the Federal Trade Commission (FTC).² In 1990 the FTC undertook an investigation of Microsoft's software licensing practices with personal computer original equipment manufacturers (OEMs). After nearly three years of investigation, the five-member Commission failed to support the legal staff's desire to bring a suit against Microsoft (the vote was 2-2; one commissioner had not participated).

This victory for Microsoft was short-lived; the Department of Justice undertook its own investigation almost immediately. A year later, on July 15, 1994, DOJ filed a complaint, claiming that Microsoft's contracts with OEMs were exclusionary and anticompetitive and that their purpose was to allow Microsoft to maintain its monopoly in the market for personal computer (PC) operating systems (OSs). The case did not go to trial. Microsoft and the Government settled, with Microsoft signing a consent decree in which it agreed to restrict its licensing agreements along a number of dimensions. (The agreement was finally approved on June 16, 1995.)³ An important aspect of the consent decree was the agreement that Microsoft could not condition or "tie" its operating system license to the license of

²See, for example, Gilbert (1999).

³*U.S. v. Microsoft Corporation*, 1995-2 Trade Cas. p. 71,096 (D.D.C. 1995).

other operating system products. However, the agreement did explicitly allow Microsoft to continue to develop “integrated” products.

The distinction between an anticompetitive tie and pro-competitive product integration was to become a central issue in the Microsoft litigation that followed. But there was an additional skirmish to be fought before the larger battle began. With the rapid development of the Internet came the need for software that would allow PC users to have easy Internet access. The first highly successful web browsing product came from Netscape. In a very short period of time Netscape’s Navigator became the market leader, accounting for approximately 70 percent of browser usage in 1996.

While initially slow to realize the potential significance of the Internet, Microsoft was quick to redirect its efforts aggressively toward Internet browser software in 1996. A new antitrust issue arose when Microsoft required OEMs to license and to install Microsoft’s browser, Internet Explorer (IE), into new PCs as a condition for obtaining a license to install the Windows 95 operating system. The Government sued, claiming that Microsoft’s tie between IE and the OS violated the 1996 consent decree. Microsoft defended by claiming that IE and the OS were integrated products and that consequently its licensing arrangement should be seen as an exception to the 1995 consent decree. The Government was initially successful: On December 11, 1997, Judge Thomas Penfield Jackson ordered that Microsoft separate its Windows 95 OS and IE. However, on appeal the U.S. Court of Appeals for the District of Columbia sided with Microsoft, claiming that Microsoft had offered evidence that the combination of IE and the OS offered functionality that was not available without product “integration.”⁴ In a move that would later be seen as prescient, the appellate court made it clear that its decision was based solely on its reading of the consent decree and not on broader antitrust principles.

The battle began on May 18, 1998, when the U.S. Government, twenty of the states, and the District of Columbia brought suit against Microsoft. In its filing, the DOJ alleged that Microsoft had engaged in a range of practices involving operating system licenses with OEMs, contracts with Internet service providers (ISPs), and ties between the OS and its IE browser, all of which restrained trade in violation of Section 1 of the Sherman Act. The DOJ also alleged that Microsoft had attempted to monopolize the market for Internet browsers in violation of Section 2 of the Sherman Act. The heart of the Government’s case was its allegation that Microsoft had engaged in a range of practices that aimed primarily, if not solely, to protect and maintain the Microsoft operating system monopoly.⁵

Some background will be useful at this point. In the years prior to the filing of the Government’s case, it became apparent to Microsoft that the

⁴*U.S. v. Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998).

⁵Unless otherwise stated, “Government” applies to the U.S. Department of Justice, the states, and the District of Columbia.

Netscape Navigator browser could serve as the foundation for a software "platform" that had the potential to compete with Microsoft's Windows 95 (and later Windows 98) operating system. Operating systems provide application programming interfaces (APIs) through which applications interact with the OS and through the OS with the computer hardware. Applications developers must write their programs to interact with a particular operating system's API. The time and expense of then "porting" the application to a different OS can be substantial. The term *platform* describes a set of APIs to which applications may be written.

Because of the huge volume of Windows operating system sales and the size of the network of OS users, a vast number of applications, including the highly successful Office suite, have been written for Windows. If a firm were successfully to offer a competing OS, it would, of necessity, need to offer a substantial number of applications, which would most likely include word processing and business productivity software. As Apple realized during the 1980s, failure to offer a range of applications that appeal to businesses is likely to hinder one's ability to grow market share.⁶ Because much of the software development and marketing effort is sunk (i.e., cannot easily be of value elsewhere), the result is the presence of a significant "applications barrier to entry" to OS markets. The ability to reduce the significance of this barrier to entry is what made the Java programming language of particular interest to Microsoft and its competitors.

Netscape Navigator (and other browsers) relied on Java. Developed and marketed by Sun Microsystems, Java was a "cross-platform" language that offered to applications programmers the opportunity to write a program once but to have that program run on all operating systems. Cross-platform Java effectively served as a form of "middleware," software that sits on top of an OS while at the same time serving as the foundation for other applications. According to the Government, Netscape threatened Microsoft because its browser had the potential to distribute cross-platform Java to independent software developers. If those developers chose to write to other OSs such as IBM's OS/2 or Linux (or if they wrote directly to browser APIs associated with Internet applications), the Windows monopoly would be at risk.

With respect to the maintenance-of-monopoly claim, the Government alleged that Microsoft had engaged in a range of practices whose purpose was to limit severely the commercial viability of the Netscape browser. These included an attempted market division with Netscape and attempts to discourage Apple and Intel from participating in closely related, and potentially threatening, software markets. They also included a combination of exclusionary devices (including those mentioned previously) and

⁶In response to this concern, Apple licensed Windows 1.0 to Microsoft in exchange for a Macintosh version of the spreadsheet program Excel (and a one-year delay before the Windows version of Excel was offered).

other predatory acts aimed in part at Java and in part at the Netscape browser, an important means by which Java can be distributed to computer users. Exclusionary behavior is behavior that makes it more difficult for competitors to compete; predatory behavior arises when a firm forgoes short-run profits to drive a competitor from the market in the hope of recouping future profits in the same market or in some other market.

In its April 5, 2000, opinion, the district court found in favor of the Government with respect to its Section 2 claims, including both its core maintenance-of-monopoly arguments and a separate attempted-browser-monopolization claim. While determining that the browser-operating system tie and certain contractual practices violated Section 1 of the Sherman Act, the court found that the Government had not shown sufficient evidence that the exclusionary practices had foreclosed competition.

Judge Jackson then accepted the Government's proposed remedies, which included conduct remedies that would limit Microsoft's use of exclusive contracts and its control over the PC "desktop." He also supported the Government's proposal that Microsoft be divided into two smaller companies—an operating system company and an applications company. The latter would maintain control over the browser business, although the OS company would retain property rights with respect to the current version of the browser.

Judge Jackson agreed to stay his remedies until after the appeals court heard the case. In a highly unusual move consistent with the importance of the case, the entire eligible membership of the Appeals Court for the District of Columbia (rather than the usual three-judge panel) heard Microsoft's appeal of the case. The unanimous appellate decision was seen as a victory by the Government, but it did contain positive elements for both sides. From Microsoft's perspective, the opinion was successful because the appeals court (1) reversed Judge Jackson's decision that Microsoft had attempted to monopolize the browser market, and (2) remanded (sent back) the case to the lower court for a rehearing on the remedy issue. From the Government's perspective, the decision was highly successful because (1) the court upheld both the maintenance of monopoly claim, and (2) along with it, the court condemned the wide range of exclusionary and predatory practices alleged by the Government.

AN OVERVIEW OF THE ECONOMIC ISSUES

Two significant economic questions raised by *U.S. v. Microsoft* were:

1. Did the Microsoft Corporation possess monopoly power in the market for personal computer operating systems?
2. Did Microsoft maintain its monopoly power by a series of anticompetitive actions that unreasonably restrained trade?

In answer to the first question, the Government stated that Microsoft did possess monopoly power in the market for operating systems for Intel-compatible desktop personal computers. Microsoft responded that the relevant market for antitrust purposes is substantially broader than Intel-based PC OSs; it includes hand-held computer operated systems and servers. Moreover, Microsoft faces substantial competition from other computer OSs, threats from other non-OS platforms that can support applications, and threats from yet unknown innovations. Indeed, the very fact that Microsoft found it necessary to take action against Netscape and Java shows that those companies and their products are in the market. Consequently, Microsoft does not have monopoly power.

With respect to the second question, the Government argued that Microsoft foresaw the possibility that the dominant position of its Windows OS would be eroded by Internet browsers and by cross-platform Java. Microsoft engaged in a series of anticompetitive practices in order to protect the monopoly power of its Windows OS. Microsoft responded that it did perceive a competitive threat from Java and responded in a number of ways to combat that competitive threat. However, those responses were the reasonable and appropriate responses of a competitor and cannot be appropriately characterized as an attempt by Microsoft to maintain its OS monopoly.

The Government raised an additional question that focused specifically on the market for browsers. That question raised a third issue:

3. In order to thwart the competitive advantage of the Netscape Navigator browser, did Microsoft use many of the same acts to hamper severely Netscape's browsing software?

Because questions 2 and 3 raised similar concerns about the alleged anticompetitive acts by Microsoft, it is not surprising that the economic analysis associated with question 3 is closely related to the analysis of 2. While question 3 was supported by the district court, it was rejected by the circuit court of appeals, which argued that the Government had not proved that there was a separate and distinct browser market or that there were substantial barriers to entry in the browser market. To keep the discussion focused, this case study will analyze only claims 1 and 2.

As mentioned, the core of the Government's case lay in its second claim—that Microsoft had used illegal anticompetitive practices to maintain its OS monopoly. According to the Government, Microsoft's conduct, which preserved and increased barriers to entry into the PC operating system market (and which distorted competition in the market for Internet browsers), included:

1. tying IE to the operating system (in effect requiring manufacturers to acquire Microsoft's Internet browser as a condition of acquiring Microsoft's Windows OS), thereby severely hampering Netscape's

browser and blunting the threat that software developers, in writing for a browser platform, would create software for a non-Microsoft OS;

2. excluding browser competitors from the most efficient channels of distribution (OEMs and ISPs), thereby requiring competitors to use more costly and less efficient channels;
3. imposing agreements requiring OEMs not to remove Microsoft's browser or to substitute an alternative browser;
4. imposing exclusionary agreements on ISPs, requiring them to boycott or disfavor Netscape and other browsers; these included agreements not to promote, distribute, use, or pay for Netscape's browser (or to do so only on less favored terms); and
5. giving its browser away for free ("committing" itself to do so "forever") and paying others to take its browser.

The following section elaborates on the two central economic questions raised by the case, in the process describing first the positions maintained by each of the two sides and then by the courts.

DEBATING THE ECONOMIC ISSUES

Did Microsoft Have Monopoly Power?

The Government's Perspective

The Government alleged that Microsoft possessed monopoly power in the market for operating systems for Intel-compatible desktop PCs. To support that claim, the Government provided market share data that showed that Microsoft's share of PC operating systems was very high and had remained stable over time; indeed, its worldwide share of shipments of Intel-based operating systems had been approximately 90 percent or more during the 1990s. Furthermore, numerous OEMs—the most important direct customers for PC operating systems—believed that they did not have any alternative to the acquisition and installation of Microsoft's Windows operating system.

The Government chose to exclude Apple's OS from the relevant market, based on evidence that there was very little substitutability between Apple and Windows. However, Apple's exclusion did not play a significant role in the Government's analysis of the case, primarily because of its relatively small market share.

Of greater potential significance were non-desktop devices such as the Palm Pilot, which could arguably substitute at least in part for the PC. To the extent that they could, Microsoft's monopoly power in PC operating systems would become less important. From the Government's perspective,

it was not credible that a 5 or 10 percent increase in the price of Windows above a competitive level would make a large number of users choose Palm Pilots rather than PCs.⁷ Moreover, even if non-desktop devices did at some point become serious substitutes for the PC, the Government argued that Microsoft's monopoly power would only become less important; it would not disappear.⁸

Note that in both the case of Apple and the case of hand-held devices, the crucial question (according to the Government) was not whether the hardware products involved competed with Intel-based PCs. That would matter if one were considering an alleged monopoly of PCs themselves. Rather, Microsoft's alleged monopoly was over *the market for operating systems* for PCs; hence, an appropriate test was whether a 5 or 10 percent increase in the price of *Windows* above a competitive level would induce customers to change OSs or choose other hardware. This seems implausible, given that the price of Windows was only a small portion of the price of a PC at current prices and would be even smaller had the price of Windows been reduced.

While high market shares are an important indicia of monopoly power, the Government's case had a broader foundation. In particular, there was direct deposition testimony from PC manufacturers—the most important direct customers for Windows—that a 5 or 10 percent price increase by Microsoft would not make them shift away from Windows. Further, Microsoft's internal documents made clear that the company did not take into account the prices of other operating systems in setting its own prices.

Both parties agreed that OSs are characterized by *network effects*. Users want an OS that will permit them to run all the applications programs they want to use. As a result, developers tend to write applications for the most popular OS; and applications software written for a specific OS typically cannot run on a different OS without extensive and costly modifications or add-ons.

There are other network effects as well. For example, operating systems are complex; they exhibit network effects in part because firms are reluctant to reinvest in retraining workers and in part because using multiple OSs vastly increases technical support costs. This gives a firm an incentive to have the same OSs for all its own computers and the same OS that is widely used by other firms. Other network effects include the ease of exchanging files and the opportunity to learn from others.

As the result of economies of scale and network effects, the parties agreed that Microsoft's operating system success has led to many more applications (more than seventy thousand) being written for its operating

⁷Although a hypothetical "small but significant non-transitory increase in price" is a central part of the DOJ-FTC *Merger Guidelines* paradigm for market definition, its use for monopoly determination is controversial. See, for example, White (2000).

⁸A similar argument applied to servers.

system than for any other. This reinforced and increased Microsoft's market share, leading to still more applications being written for Windows than for other OSs, and so on. According to the Government, this positive feedback effect created an "applications barrier to entry" that made it difficult or impossible for rival OSs to gain more than a niche in the OS market. Indeed, the Government believed that Microsoft's share and power were not likely to be eroded by new entry as long as the applications barrier to entry remained strong.

The Government also considered Microsoft's argument that it faced significant competition from its own installed base of users. If so, Microsoft could not raise the price of new operating systems without fear that the installed base of users would choose not to upgrade their software. Indeed, Microsoft argued that it needed to continue to innovate for the same reason. While this installed-base argument relates to its pricing of upgrades, it does not apply to new computers, which are bought largely to take advantage of developments in hardware or software.

Microsoft's Response

Microsoft denied that it has monopoly power; indeed, Microsoft claimed that the Government's market definition was invalid. Stressing the network effects story, Microsoft argued that the appropriate focus should be on platforms, not on operating systems. Platform software offers standardized routines that allow software developers to avoid re-creating code to perform standard operations. While the Windows OS was a platform (as were other OSs), Microsoft argued that other non-operating system software, "middleware," could also serve as a platform. For example, Lotus Notes is a popular form of middleware that is popular among network users because of its e-mail and other functionality. Another significant platform is the World Wide Web, which consists of servers that make information, including applications software, available to the public communications network.

Microsoft argued that it competed vigorously to maintain its position as provider of the leading software platform. Indeed, Microsoft maintained that had it not continually improved its software, it would have been displaced by competing platforms. Whether threatened by known or unknown, actual or potential competition, Microsoft argued that any market power that it enjoyed was temporary and therefore not fairly characterized as monopoly power.

Microsoft also disputed the Government's view as to the significance of the applications barrier to entry. According to Microsoft, if this was a significant barrier, then neither Netscape nor Java could ever successfully attract the allegiance of independent software developers. But, according to Microsoft, that was inconsistent with the reality that Netscape and Java were serious threats, despite their initial lack of applications. (The Government

responded, in turn, that it never claimed that the barrier was insurmountable; had it been, Microsoft would not have engaged in its anticompetitive behavior.)

In another defense against the claim that it had monopoly power, Microsoft relied on a standard static model for short-run monopoly pricing to argue that its Windows OS price was far below the price that a monopolist would charge. Assuming that there was monopoly power, Microsoft's economist calculated an elasticity of demand for Windows from information relating to the elasticity of demand for PCs, its OS market share, and the marginal cost of Windows (which was very low). Applying a "rule of thumb for pricing," Microsoft calculated that the short-run monopoly price for Windows was approximately \$1800,⁹ well in excess of the actual price (around \$60). Hence, the Government was wrong to characterize Microsoft as having monopoly power.

The debate surrounding the short-run profit-maximizing price of Windows was an extremely active one during the trial, perhaps because it had implications for the private lawsuits that were to follow on the Government's case and perhaps because it focused analytical attention on crucial short-run versus long-run and static versus dynamic distinctions. The Government objected strongly to Microsoft's claims, pointing out that since the marginal cost of Windows software is very low, the *short-run* profit-maximizing action for Microsoft is to price where the elasticity of demand that it faces is unity (when costs are zero, this maximizes revenue and profit). According to the Government, this is true whether or not Microsoft has monopoly power. According to the Government, the correct conclusion must be that something other than short-run profit maximization is happening, and in particular, Microsoft must be taking its OS monopoly profits in other ways (e.g., through higher priced applications). Moreover, according to the Government, Microsoft's pricing of its operating system (in particular its contractual prices to OEMs) is consistent with long-run profit maximization by a firm with monopoly power in a network market.

The issue of how a profit-maximizing firm should price in a dynamic network market remains a complex one. In a network industry it is in any dominant firm's interest to account in its pricing strategy for a host of factors that could lead, other things equal, to a lower price than one would expect from a simplistic short-run theory. These include: (1) the value of keeping and growing one's installed base, the source of the significant network effects; (2) the possibility of creating increased demand for complementary applications, which in turn provides an additional revenue source; (3) the need to discourage software pirating; and (4) the imposition of

⁹See, for example, Pindyck and Rubinfeld (2001), pp. 333–334. According to the rule of thumb, the profit-maximizing price of a product is given by $P = MC/[1 + 1/E_d]$, where P is the price, MC is the marginal cost, and E_d is the elasticity of demand facing the firm.

binding restrictions on its OEM customers as part of its anticompetitive campaign to preserve long-run monopoly profits.

The Court's Perspective

While Judge Jackson's opinion did not focus on the pricing issue, his Findings of Fact (in November 1999) supported the Government's position on all significant market definition and monopoly power issues. The court understood that, when defining a market in a monopoly case, it is appropriate to emphasize the constraints on an alleged monopolist's power with respect to buyers of operating systems, not the constraints relating to producers of complementary products. Seen in this light, Navigator and Java were *complements* to the OS that could facilitate the writing of applications that were also complements. They were not substitutes and therefore should not have been defined as part of the same market.

The court also agreed that there was a significant "applications barrier to entry." While Apple had 12,000 applications and OS/2 had 2500, neither could compete with Microsoft, which had more than 70,000 applications, one of which was its dominant business suite, Microsoft Office.

The appellate court chose not to overturn Judge Jackson's findings of fact on these issues, in effect affirming the district court's finding that Microsoft had monopoly power in the operating systems market. The academic and policy debate about the nature of dynamic competition, the measurement of market power, and the appropriate framework in which to evaluate the pricing of firms with market power will, however, continue beyond the scope of the *Microsoft* case.

Did Microsoft Maintain Its Operating System Monopoly by Thwarting the Threat Posed by Netscape's Browser?

The Government's Case

The Government argued that Microsoft engaged in a range of acts whose primary purpose was to protect its operating system monopoly. The Government pointed out that in May 1995 Microsoft's CEO Bill Gates had warned his top executives that the browser could "commoditize" the OS. His fear was that if Netscape's browser was successful, programmers would be easily induced to write software for competing operating systems, to the detriment of Microsoft. The key to maintaining its monopoly was to thwart the success of the Netscape Navigator browser.

The Government emphasized that before Microsoft began giving away its browser for free, ISPs and retailers had distributed browsers separately from OSs; as a result, there was clear evidence that there had been demand for OSs without browsers and for OSs with a choice of browsers. This supported the Government's view that a free browser was not simply a

competitive strategy to penetrate the browser market, and it also supported the Government's proposed remedy—that Microsoft allow OEMs to choose which browser to offer, or indeed, to offer no browser at all.

The Government argued that by bundling its browser with its OS and giving away its browser for “free,” Microsoft prevented companies from successfully entering the browser market unless they successfully entered the OS market. The necessity of this “two-level” entry effectively increased the barriers to entry into the OS market and thereby protected Microsoft's monopoly in operating systems. The Government believed that Microsoft recognized the threat from Netscape Navigator, because it was an Internet browser capable of supporting applications that were OS independent. By lessening reliance on the OS, the browser, while not performing all the traditional functions of an operating system, could have provided opportunities for competing OSs by reducing the applications barrier to entry. In sum, the Government placed great weight on the fact that Microsoft was concerned that browsers could ultimately develop into alternate platforms, thereby threatening its Windows OS.¹⁰

This threat was real, because the Navigator browser runs on many different operating systems, including Windows, the Apple Macintosh OS, and various versions of UNIX, including Linux. Netscape's browsers contain their own set of 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 OS. Similarly, browsers could have reduced the power of the OS monopoly by facilitating the expansion of network computing, in which users with “thin clients” use a network to access applications residing on a server, rather than hosting the application on the PC itself.

According to the Government, 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 gaining a share sufficient to threaten Microsoft's platform dominance or remain viable as a platform. Moreover, if Microsoft's Internet Explorer browser 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 furtherance of its argument concerning browser shares, the Government showed that Netscape's market share (70 percent in 1996) had declined significantly by 1997, to the benefit of Microsoft, and that this

¹⁰In April 1996, Bill Gates wrote that: “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” (April 10, 1996, “The Internet PC,” Plaintiff's Exhibit 336).

pattern was likely to continue into 1998 and 1999, as in fact it did. In the Government's eyes, the market for browser usage had "tipped" in favor of Microsoft. With hindsight, the tipping did occur; Microsoft's current browser usage share is more than 85 percent.¹¹

In sum, the Government believed that a range of anticompetitive acts was taken by Microsoft to exclude competition in Internet browsers. These were acts that Microsoft would not have undertaken except to foreclose competition and to protect the applications barrier to entry. The specific actions included:

Market Allocation: The Government claimed that Microsoft engaged in a series of market allocation efforts (involving Netscape, Apple, and Intel) whose ultimate purpose was to minimize the competitive threat to its OS monopoly.

In June 1995, Microsoft had a business meeting with Netscape, the alleged purpose being to solicit this emerging competitor to engage in a market allocation scheme in which Microsoft would agree to let Netscape offer its browser without competition in the server market, while Microsoft would be given control of the PC browser market. If Netscape had agreed (it did not), Microsoft would have succeeded in eliminating its only serious browser competitor.

The Government believed that Microsoft also engaged in similar conduct with Intel. When Intel proposed offering certain platform-level software that conflicted with Microsoft's platform plans, Microsoft threatened, among other things, to withhold support for Intel's new generation of processors.¹² According to Intel's chairman, 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."¹³

Finally, Microsoft had entered into an agreement with Apple that required Apple to make IE its default browser on all its Macintosh operating systems. According to the Government, that agreement forced Apple to place all competing browsers in a folder, thereby removing other browsers from the desktop. Microsoft also limited Apple's ability to promote other browsers and tried to discourage Apple from developing its QuickTime streaming software, a platform threat to windows.

The Government viewed Microsoft's conduct with respect to Netscape, Intel, and Apple as consistent with its efforts to prevent browsers from

¹¹As of June 2000, the IE browser usage share was 86 percent (Clark 2000).

¹²Specifically, Microsoft attempted to convince Intel to agree not to engage in platform competition with Microsoft by developing its Native Signal Processing technology, which would have endowed microprocessors with enhanced video and audio capabilities. Because the NSP technology would have been available for non-Windows platforms, it could have presented a threat to Microsoft's monopoly power.

¹³July 8, 1996, Brent Schlender, "A Conversation with the Lords of Wintel," *Fortune*: Plaintiff's Trial Exhibit 559, p. 8.

becoming a threat to the applications barrier to entry. In each case (1) Microsoft was confronted with platform-level software to which applications programs could be written; (2) platform-level APIs threatened to erode the applications barrier to entry into PC operating systems by supporting applications programs that could be used with multiple operating systems; (3) 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; and (4) Microsoft was prepared to act to preclude the supplier of a potential platform-level software from succeeding in offering the platform, even if Microsoft's actions were not otherwise sensible from a business perspective.

Predatory Pricing: According to the Government, once Microsoft recognized the potential threat posed by Netscape's browser, Microsoft began devoting at least \$100 million per year to develop IE and tens of millions of dollars a year on marketing and promotion. Despite the significant browser-related costs it was incurring, Microsoft distributed its browser at a negative price. The IE browser was not only given away free, but also companies were paid and given valuable concessions to accept, use, distribute, and promote IE. While a free browser might be a profitable "penetration pricing" strategy to grow its market, the Government cited Microsoft's internal documents to show that Microsoft undertook its browser development not to make money from browsers but to prevent Netscape's browser from facilitating competition with Microsoft's monopoly OS. Indeed, Microsoft had referred to IE as a "no-revenue product," at the same time that Microsoft emphasized the importance of the browser to Microsoft's competitive position.¹⁴

When it made its decision to supply IE without charge, Microsoft estimated that from 20 percent to 50 percent of Netscape's revenues came from licensing its browser (such revenues amounted to nearly \$200 million per year). Microsoft's decision to price its own browser below cost 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. Indeed, 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."¹⁵

A predatory pricing strategy is one in which the predator forgoes current profits in order to eliminate or cripple a competitor, with the expectation of recouping those forgone profits at some point in the future. In the

¹⁴Government Trial Exhibit 39.

¹⁵Steven McGeady August 10, 1998, Dep. Tr. 16-17.

Government's view, Microsoft's pricing strategy did not make sense as an ordinary business practice. It was giving away something (a "no-revenue product") that it had spent a lot of money to develop and distribute (forgone profits) and something for which the leading competitor was charging. It was only when Microsoft's gains from preserving and extending its monopoly (recoupment) were included that Microsoft's conduct appeared to be profitable. From the Government's perspective, the preservation of Microsoft's OS monopoly alone would permit recoupment. Indeed, the Government introduced contemporaneous Microsoft documents showing that the company's zero (or negative) price for its browser was not considered a way to earn competitive ancillary revenues.

Bundling and OEM Restrictions: Although IE was not "tied" or "bundled" with the retail version of Windows 95 when it was first released in the summer of 1995, Microsoft did bundle IE with Windows 95 in distributing Windows 95 to OEMs, and IE was bundled with all Windows 98 OSs that Microsoft distributed through retail or OEM channels.¹⁶ (In Windows 98, the browser was "integrated," having been designed to share extensive code with the operating system.) According to the Government, Microsoft made the decision to bundle IE and Windows in one form or another even though there was demand for browsers separate from the demand for operating systems.

The Government also argued that Microsoft made its bundling decision not to achieve efficiencies, but to foreclose competition. The Government was not arguing that bundling per se was anticompetitive. Instead, because Microsoft did not give OEMs the option of taking Windows without the browser, it thus compelled those OEMs and users who wished otherwise to take IE nonetheless in order to get Windows. This foreclosure of competition arguably had an immediate harmful effect on consumers, whose choice of browsers was restricted. The harm was not simply to consumers who faced limited browser choice; other harms resulted from the unnecessarily cumbersome OS and from the limited options for those who preferred not to use a browser.

Microsoft also recognized that OEMs wanted the ability to develop their own desktops and to substitute Netscape's browser for IE. The Government suggested that Microsoft, fearing this threat in 1996, imposed screen and start-up restrictions to prevent OEMs from developing their own first screen or positioning competing browsers more favorably than IE. From the Government's perspective, had Microsoft simply viewed the browser

¹⁶In the traditional terminology of economics, *bundling* relates to situations in which firms sell packages of two or more products for which there may or may not be separate consumer demand. *Tying*, a more general term (although often used interchangeably with *bundling* by economists) applies to cases in which there are separate demands for two products, but the consumer must purchase one product in order to obtain another. With this terminology, it is appropriate to describe the browser as having been bundled with and tied to the OS.

as a complement to its OS, Microsoft would have had a clear incentive to support all browsers. A successful Netscape browser, for example, would increase the demand for the Windows OS. However, according to the Government, Microsoft saw the Netscape browser as a platform that would support substitute operating systems. Facing the threat of a potential substitute, Microsoft's OEM restrictions were rational, indeed profit-maximizing, but at the same time, they were also anticompetitive.

With respect to OEMs, Microsoft required the distribution of IE and restricted the distribution of other browsers. The agreements required OEMs that wanted to preinstall Windows 95 or Windows 98 on their machines to preinstall Microsoft's IE also. The agreements also limited the ability of OEMs to promote other browsers or to substitute other browsers for IE. Indeed, 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 from the OS, 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.

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

Microsoft's restrictions on the startup screen were modified just before trial so that OEMs had somewhat more flexibility than when the restrictions were imposed. However, IE was still required to be installed on every PC, and the IE icon could not be removed. The result, according to the Government, was a significant exclusionary effect that ensured that IE was the *only* browser on most PCs shipped by OEMs. By January 1999, Navigator was on the desktop of only a very small percentage of PCs.

Exclusionary Agreements with Internet Service Providers: According to the Government, Microsoft required the promotion and distribution of IE and restricted the promotion and distribution of other browsers by striking deals with Internet service providers in order to protect Microsoft's business in operating systems. After OEMs, ISPs are the largest distributors of browsers.

While Microsoft's agreements with ISPs allowed them to distribute other browsers, Microsoft's contracts typically required that the ISPs not distribute other browsers to more than a relatively small fraction of their customers. Some ISPs had agreements that allowed them to distribute IE and Netscape without preferences; Microsoft's documents used the term "IE Parity" to identify these companies.

Microsoft also created a separate desktop folder for certain favored ISPs and entered into agreements with AOL, CompuServe, Prodigy, and AT&T to appear in it. The Government offered evidence that in doing so, Microsoft extracted promises from the ISPs not to deal with Netscape or to do so only on very unfavorable terms. Of particular importance was the agreement that Microsoft reached with AOL, which by early 1996 was being installed on a large number of PCs, to ship IE.

Typically, the ISP restrictive provisions involved percentage restrictions on shipping for larger ISPs and restrictions on promotional efforts for smaller ISPs. These limitations included: (1) requirements that 75 percent 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 requested it; and (2) limitations that restricted the total shipments of non-Microsoft browsers by ISPs.

The Government stressed that, in its agreements, Microsoft offered ISPs valuable space on its desktop as well as direct payments in the form of rebates or bounties. In exchange, Microsoft placed requirements on ISPs that hindered their ability to promote or distribute Netscape Navigator. The Government viewed these provisions as anticompetitive. Their purpose and effect were to reduce the ability of competing browser manufacturers to distribute and promote their browsers through leading ISPs.

Microsoft's Response

Microsoft agreed that the Internet presented both an opportunity and a threat. The Internet expanded the market for platform software generally, and the demand for Windows in particular. However, the Internet was also a threat to Microsoft because it offered competitors an opportunity to gain control of the communications and language standards for the Internet, which would leave Microsoft at a severe competitive disadvantage.

Microsoft characterized its browser battle as part of a larger effort to maintain its position as the leading PC provider of the Microsoft Windows software "platform," the software code that can be accessed through APIs, and which therefore offers a wide variety of features and services to software developers. Microsoft argued that its responses to this threat were appropriate responses by a competitor. Microsoft did believe that Netscape's Navigator could become a competing software platform if it added sufficient APIs to become attractive to software developers. If successful as a platform, Navigator could influence Internet standards in ways that would be adverse to Microsoft. Microsoft argued that, as a result, it had every right to compete aggressively with its most serious platform competitor.

Microsoft further argued that its actions against Netscape were not predatory because they were directed toward improving its own browser and OS and were not conditioned on crippling or eliminating Netscape as a browser competitor. Microsoft claimed that it had decided as early as 1993

to incorporate Internet features into its Windows platform. It invested \$100 million annually to develop new and improved versions of IE. Indeed, because of the success of those investments, the IE browser eventually equaled if not surpassed the Netscape browser in quality. However, because its Internet development did not proceed sufficiently quickly, Microsoft chose not to include the browser in Windows 95. Microsoft suggested that it had always planned to "integrate" its browser in its OS and that there were significant efficiencies associated with doing so. Its reward from investing in the browser was similar to the reward that it expected from other features that were integrated into the operating system; it came from the increased value of a Windows OS that would continue to remain the leading software platform.

With respect to the Government's market allocation claims, Microsoft responded that it had legitimate business reasons for meeting with Netscape, Apple, and Intel. In each case, there were pro-competitive reasons to have joint discussions. Indeed, as a general matter, discussions concerning software interfaces and complementary products with other software firms can be valuable to both parties and to consumers. Microsoft emphasized the complementary relationship between the Netscape browser and its OS, and similar arguments were made concerning Intel's software tools for video streaming, Apple's QuickTime software, and Microsoft's OS. Finally, in each case, Microsoft argued that no agreements were reached, that it did not intimidate its competitors into altering their behavior, and that its competitors continued to be successful. Thus, according to Microsoft, Apple continued to develop its QuickTime for Windows product, and Intel's software development was delayed, but not stopped entirely.

With respect to pricing, Microsoft responded that firms frequently give away software for free or at a very low price in order to compete in what could be a "winner-take-all" market battle. Moreover, Microsoft argued that offering a free browser with Windows 95 was the natural step toward a goal of integrating valued features into its OS, as it did with its Internet browsing functionality in Windows 98. Microsoft additionally argued that Netscape had alternative sources of revenue, since it could sell advertising on its web portal, Netcenter. Finally, Microsoft argued that the Government had offered no compelling evidence that Microsoft's policy of integrating features into its OS was not profit-maximizing apart from any predatory motives.

With respect to bundling and OEM restrictions, Microsoft believed that it was 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, "seamless" experience. Microsoft also argued that it did not have substantial market power. Absent monopoly power (or, at least, significant market power), bundling is not a rational anticompetitive strategy. Rather, it is likely to be harmless and to serve a legitimate business purpose. Indeed, from Microsoft's perspective, the benefit gained by

creating interdependencies between IE and Windows was greater than any anticompetitive effects of bundling that might be imagined.

Microsoft further claimed that there were efficiencies associated with bundling that would be lost were Microsoft forced to separate the browser functionality from that of the OS. Microsoft further argued that the Government's claim that every product design, particularly in the area of computer software, can make a plausible claim for some efficiency or benefit, missed the point. In Microsoft's view, browser functionality was an essential component of the operating system, and separating the two products once they have been combined would be impossible.

Finally, Microsoft claimed that the absence of IE would undermine the quality of the OS, to the detriment of users. Microsoft distinguished Windows 98 from Windows 95 and thereby dismissed as irrelevant the Government's view that Microsoft had 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 OS. They also argued that the Government's showing that 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 OS was misleading, since the Government's expert removed only the visible means of accessing the browser and not the browser functionality itself.

With respect to its ISP agreements, Microsoft took the position that it was justified in competing aggressively for the distribution of its browser. Its success with AOL, for example, was due to its superior quality product and the desirable competitive terms that it offered. Microsoft stressed that its browser came in distinct "modules," which allowed AOL more easily to integrate the IE "technologies" into its own proprietary software. Finally, Microsoft argued that Netscape did not offer the same support as Microsoft, refusing, for example, to allow AOL to manage its popular web portal.

With regards to both OEM and ISP agreements, Microsoft argued "no harm, no foul." Microsoft offered evidence to support the view that Netscape had many channels through which it could distribute its browser. It could "carpet bomb" by mailing disks with CDs, or it could encourage individuals to download IE from the Web. Consequently, neither Netscape nor any other competitor was foreclosed from competing with Microsoft.

The Court's View

Judge Jackson strongly supported the Government's claims that Microsoft had used anticompetitive acts to maintain its OS monopoly. The court's condemnation of Microsoft's behavior with respect to maintenance of monopoly was widespread. In each of the four categories of activities listed above—market allocation; predatory pricing; bundling; and exclusionary agreements—the court sided with the Government.

Moreover, with respect to the bundling arguments, the court agreed that “tying” the browser to the OS was anticompetitive even apart from its contribution to Microsoft’s maintenance of monopoly goal. Microsoft’s only “victory” at the district court level was Judge Jackson’s finding that the Government had not provided sufficient evidence that the OEM and ISP restrictions had foreclosed competition.¹⁷

The circuit court of appeals supported Judge Jackson with respect to the maintenance-of-monopoly arguments, thus strongly backing the core of the Government’s case. Specifically, the court of appeals affirmed the district court’s finding that the OEM and ISP restrictions described previously were anticompetitive. The appellate court also agreed with the core of the lower court’s finding that the means by which Microsoft tied its browser to its OS was anticompetitive. Moreover, the appellate court made it clear that certain of Microsoft’s marketing allocation efforts with respect to Apple and Intel were anticompetitive. The appellate court did, however, raise questions about the bundling-tying issue itself, remanding this issue back to the district court for further analysis of the benefits and the costs associated with Microsoft’s bundling of IE and its OS.

Was Microsoft’s Alleged Anticompetitive Behavior Harmful to Competition?

The Government’s View

In the Government’s view, Microsoft succeeded in effectively excluding Netscape almost completely from the personal computer OEM distribution channel. OEMs that license Windows were required to take (and not remove) IE. For most OEMs, including the largest, that meant including only IE with the PCs they shipped.

In evaluating the effectiveness of Microsoft’s actions on browser competition, the Government argued that the relevant measure was Microsoft’s share of browser *usage*. The evidence of Microsoft’s foreclosure of Netscape and other browser competitors could be seen by comparing Microsoft’s share of browsers distributed by ISPs that made IE their default browser with ISPs that did not make IE their default browser. At the end of 1997 Microsoft enjoyed a 94 percent weighted average share of browser shipments by ISPs that agreed to make IE their default browser, compared with a 14 percent weighted average share of browser shipments by ISPs that did not make IE their default browser. Further, Microsoft’s weighted average share of browser usage by subscribers to ISPs who made IE their default browser was over 60 percent. In contrast, Microsoft’s

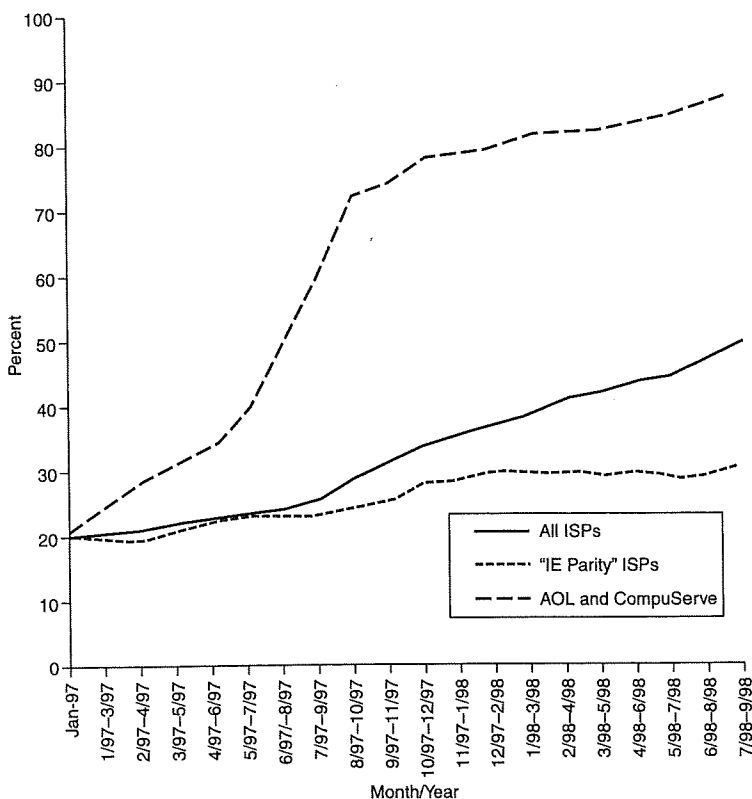
¹⁷Here, the judge arguably failed to note that the imposition of significant costs on competitors can harm consumers. Even if those rivals are not driven from the market, their ability to compete effectively can be reduced if their costs of browser distribution are raised significantly.

weighted average share of browser usage by subscribers to ISPs who did not make IE their default was less than 20 percent.

Figure 20-1 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. These companies (now merged) were chosen because they represented 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 online service providers, were contractually restricted in their promotion and distribution of non-IE browsers to a greater extent than were most other ISPs.

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

FIGURE 20-1 Microsoft's Share of the Browser Market
Three-Month Moving Average of Usage by ISP Category



Source: AdKnowledge, Inc.

listed as having "IE Parity" (ISPs whose browser choice was not known to be contractually restricted), which had ten thousand or more subscribers, and for which data were available.

From the Government's point of view, the effects were striking. Microsoft's share of "IE Parity" browser usage—the category that is contractually neutral—rose in twenty months from 20 percent to just under 30 percent. This increase included the effects of technological improvement in IE as well as the effects of Microsoft's bundling and tying. By contrast, the "All ISPs" line showed 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—the improved version of IE—in October 1997.) Thus, contract restriction—not browser quality or ISP choice—was largely responsible for the overall decline in Netscape share.

The exclusion of Netscape and other competing browsers from the OEM channel has been even greater. Although several OEMs sought to replace IE with Netscape, none was permitted to do so. And the fact that IE was required to be included meant in most cases that *only* IE would be included.

Recall that because of its 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. Microsoft's browser share at the beginning of calendar year 1997 was approximately 20 percent and had been significantly lower earlier. Regardless of how share is measured, it is clear that Microsoft's browser share increased dramatically, and Netscape's browser share fell sharply, over the years 1997 and 1998. Indeed, as mentioned previously, Microsoft's browser share continued to increase through 1999 as well, reaching over 85 percent by mid-2000. The Government's claim that Microsoft's goal wasn't necessarily to drive Netscape completely out of business, but only to prevent Netscape from becoming the browser of choice for most consumers, was borne out by history.

Microsoft's Response

Microsoft responded at trial that its conduct was profitable without considering any gains from reduced competition because the wide distribution of its browser caused more people to buy PCs to browse the Internet, with the result that Microsoft was able to sell more copies of its Windows OS. In other words, browsers can be complements to operating systems to the extent that the sale of browsers can be used to increase demand for Windows. Moreover, Microsoft argued that it expected to benefit by improving the quality of its browser through innovative product development.

Microsoft argued further that, while it did compete aggressively to defend its market position, none of the actions to which the Government

objected had harmed consumers, nor would they do so in the future. Moreover, Microsoft argued that it had not succeeded in eliminating the competitive threat posed by Netscape and Java. It argued further that AOL, which acquired Netscape during the trial, could choose to distribute the Netscape browser if it wished to do so. If AOL had decided to follow this avenue, the share of the browser market controlled by Microsoft would have diminished sharply.

Microsoft disputed the Government's measure of browser market share, offering numbers that suggested that the market for browsers had not yet tipped in Microsoft's favor. Microsoft further argued that the allegedly restrictive distribution agreements with ISPs did not foreclose Netscape, because Netscape had many opportunities to distribute its browser—through PCs and ISPs and through downloads. Microsoft further argued that Netscape could have marketed its browser more effectively but had failed to do so.

The real source of Netscape's decline, according to Microsoft, was that Microsoft had won the battle of Internet browsing technologies on the merits—it simply had a better product. Rather than being anticompetitive, its actions to (1) invest \$100 million annually in its browser; (2) invest heavily in the distribution of IE; (3) integrate its browser into Windows; and (4) reach a contract with AOL to have AOL use IE technologies for its own subscribers, were pro-competitive. From Microsoft's perspective the Government failed to distinguish these pro-competitive acts from a narrower set of acts that the Government viewed as anticompetitive.

The Court's Perspective

Judge Jackson's Findings of Fact supported the Government's view that Microsoft's anticompetitive acts caused immediate harm. According to the court:

To the detriment of consumers, . . . Microsoft also engaged in a concerted series of actions designed to protect the applications barrier to entry, and hence its monopoly power, from a variety of middleware threats, including Netscape's Web browser and Sun's implementation of Java. Many of these actions have harmed consumers in ways that are immediate and easily discernible. They have also caused less direct, but nevertheless serious and far-reaching, consumer harm by distorting competition. (paragraph 409)

By refusing to offer those OEMs who requested it a version of Windows without Web browsing software, and by preventing OEMs from removing IE—or even the most obvious means of invoking it—prior to shipment, Microsoft forced OEMs to ignore consumer demand for a browserless version of Windows. . . . Those Windows purchasers who did not want browsing software . . . had to . . . content themselves with a PC system that ran slower and provided less available memory than if the newest version of Windows came without browsing software. By taking the

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actions listed above . . . Microsoft forced those consumers who otherwise would have elected Navigator as their browser to either pay a substantial price (in the forms of downloading, installation, confusion, degraded system performance, and diminished memory capacity) or content themselves with IE. None of these actions had pro-competitive justifications. (paragraph 410)

Many of the tactics that Microsoft has employed have also harmed consumers indirectly by unjustifiably distorting competition. The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conduced to consumer choice and nurtured innovation. . . . It is clear . . . that Microsoft has retarded, and perhaps altogether extinguished, the process by which . . . middleware technologies could have facilitated the introduction of competition into an important market. (paragraph 411)

Most harmful of all is the message that Microsoft's actions have conveyed to every enterprise with the potential to innovate in the computer industry. . . . Microsoft's past success in hurting such companies and stifling innovation deters investment in technologies and businesses that exhibit the potential to threaten Microsoft. The ultimate result is that some innovations that would truly benefit consumers never occur for the sole reason that they do not coincide with Microsoft's self-interest. (paragraph 412)

RESOLUTION OF THE CASE?

The *U.S. v. Microsoft* case has now been resolved, and a remedy chosen. The path to a remedy has been circuitous. The appellate court made clear its distaste for a structural remedy that would break up Microsoft into two separate companies—an OS company and an applications company. The case was remanded to the district court, where Judge Colleen Kollar-Kotelly presided over settlement discussions. The U.S. Government and nine of the eighteen states that remained as plaintiffs reached a tentative settlement with Microsoft in which Microsoft would consent to a range of behavioral remedies. However, nine states and the District of Columbia opted not to join the settlement; they objected that the remedies were likely to be ineffective and pressed for stronger remedies. The court held a remedies hearing in which a broad range of issues was debated.

While emphasizing Microsoft's attempts to thwart competition from Netscape, the Government had argued at the original trial, and continued to argue in its settlement discussions, that there is a broader issue—that Microsoft engaged in anticompetitive acts with the goal of stemming

competition from middleware products that threatened its OS monopoly. Seen from this perspective, the issue of what is an appropriate remedy to restore competition and to achieve adequate deterrence remained an open issue at the remedy hearing.

In its original remedy argument posttrial, the Government took the position that behavioral remedies could serve a useful temporary role but that such remedies would likely be difficult and costly to enforce and could inadequately deter Microsoft's wrongful behavior. Structural remedies, on the other hand, are less regulatory and therefore less subject to extensive intervention by interested parties. The proposed breakup would have divided the company along lines that some would argue are inefficient and would not by itself guarantee increased operating system competition.

With the decision of the appellate court discouraging structural remedies, and its own skeptical concerns, the Department of Justice (now under the Bush administration) and the nine settling states chose to focus entirely on conduct remedies, and, contrary to the argument just outlined, took structural remedies off the table. Their proposed settlement contained three components. First, it attempted to prohibit Microsoft from foreclosing the OEM channel of distribution by eliminating restrictive licensing agreements and outlawing retaliatory measures against OEMs by Microsoft. Second, it attempted to keep the ISP distribution channel open by placing limits on Microsoft's ability to discourage others from developing, promoting, or distributing non-Microsoft middleware products. Third, the settlement offered a series of compliance measures whose goal is to enforce the terms of the settlement agreement.

Those states opposing the proposed settlement argued that the proposed behavioral remedy will be largely ineffective. Their primary concern was that the proposed settlement did not prohibit Microsoft from illegally bundling Microsoft middleware into the Windows OS. Absent such a remedy, there is nothing to limit Microsoft from technologically tying non-browser middleware software to the OS, when such software is seen as a potential platform that would compete with Windows. The opposing states also argued that the proposed consent decree will not effectively prohibit retaliatory conduct and restrictive licensing practices, and it will not effectively open the ISP channel of distribution. They also claimed that the proposed settlement would allow Microsoft to withhold vital technical information from developers of rival middleware. Finally, they argued that the proposed enforcement mechanism will be ineffective.

Judge Kollar Kotelly's ruling was generally supportive of the settlement agreement reached between the DOJ and Microsoft. While the court rejected many of the more aggressive remedies proposed by the nine litigating states, the court did offer more aggressive, and potentially more effective, compliance procedures that were sympathetic to issues raised by

the litigating states. In a summary of its full opinion, the court suggested that its remedy "is carefully tailored to fit the wrong creating the occasion for the remedy . . . and is forward-looking in the parameters of relief provided. . . . [and] is crafted to foster competition in the monopolized market."¹⁸ Only the future will provide an answer as to whether a settlement that includes a complex set of behavioral remedies will indeed restore competition and effectively deter wrongly anticompetitive conduct.

It has now been a decade since the Government filed its largely successful case against Microsoft. It is interesting to reflect briefly on what has come to pass in the interim. For most of this decade, the Government's predictions about browser competition turned out to be valid. IE's share of the browser market grew to well over 90 percent in the first five years after the conclusion of the case, and its operating system monopoly (again with over a 90 percent market share) has continued almost unabated. Arguments that Microsoft's monopoly was a fleeting one were clearly off the mark.

However, computer software and hardware markets are highly dynamic and subject to change. A number of significant events suggest that the next decade may bring new challenges to both Microsoft and the competition authorities. First, new browsers such as Mozilla Firefox and Opera have begun to make inroads into Microsoft's browser dominance. Second, the increasing popularity of the Web has begun to shift power toward Web-based companies such as Google and Yahoo! Third, although still problematic, Linux-based operating systems are finally beginning to gain some traction in the PC market. Whether the new Microsoft Vista operating system will have the success of its prior counterparts remains an open question at this time. What is clear is that there will continue to be a role for active government review of competitive practices in software and related high-technology markets.

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