

Where are the bodies?—and related mysteries in the government's case and court's findings

All the Facts That Fit: Square Pegs and Round Holes in *U.S. v. Microsoft*

BY DAVID S. EVANS

IN LATE SEPTEMBER 1999, ALMOST A YEAR AFTER THE start of the trial in *United States of America v. Microsoft Corporation*, lawyers ended their arguments about the facts in the landmark case. And in early November, the federal district court judge hearing the case delivered his “findings of fact,” a long document laced with strong opinions. But those searching for a comprehensive economic and legal analysis of the merits of the government's charges and the judge's findings are likely to look in vain.

Although dozens of journalists spent long days in the courtroom and thousands of stories about the trial appeared in print, the case is extremely difficult to report because of its multidisciplinary nature. Antitrust always straddles law and microeconomics, and in *U.S. v. Microsoft* the legal and economic analysis makes sense only in the context of rapid technological change. Thus, the case stretches the knowledge of most commentators to the breaking point.

This article is intended to fill the gap. Admittedly, as a consultant to Microsoft, I am not a neutral observer. But I have striven to state my arguments objectively—for, in my view, objectivity is all that is needed to understand why

David S. Evans is a senior vice president at National Economic Research Associates, Inc., in Cambridge, Massachusetts. He has worked with Microsoft on the antitrust case that is the subject of this article. For other papers and trial-related material about the Microsoft case, go to <http://nera/microsoft>. *Regulation* invites readers to submit opposing points of view for publication in future issues of *Regulation*.

U.S. v. Microsoft should never have been tried.

THE GOVERNMENT'S THEORY

THE U.S. DEPARTMENT OF JUSTICE (DOJ) INITIALLY CHARGED that Microsoft illegally had tied two products (Windows and Internet Explorer [IE])—and foreclosed a competitor (Netscape) from distributing its product (Navigator browser software). But as the evidence unfolded, DOJ ditched its tying and foreclosure claims, replacing them with several novel legal theories of what constitutes anticompetitive behavior.

Essential Components of the Original Case DOJ filed charges against Microsoft on May 18, 1998, after an 18-month investigation. Just a few months earlier it had persuaded a federal district court to order Microsoft to offer a version of Windows without IE, Microsoft's Web browsing software. DOJ alleged that making computer manufacturers take IE to get Windows violated a consent decree that Microsoft had

signed to end an earlier antitrust investigation. Microsoft's appeal was awaiting decision by the D.C. Circuit Court of Appeals when DOJ filed its new antitrust complaint.

The new complaint said that Microsoft had violated the antitrust laws in two major ways. First, by making people buy IE as part of Windows, Microsoft allegedly violated the law against "tying"—that is, requiring customers to buy product B if they buy product A. Second, Microsoft's agreements with computer manufacturers, online service providers such as AOL, Internet service providers, and companies that provide Internet content allegedly "foreclosed" Netscape from distributing its competing browsing software. The purpose of that allegedly illegal behavior, the government explained, was to maintain monopoly power in the "market for operating systems for Intel-compatible personal computers" and to attain monopoly power in the market for "Internet browsers."

Eighteen months after DOJ filed its complaint, the tying and foreclosure claims made only token appearances in the government's proposed findings of fact—the 800-plus-page document summarizing its case. DOJ did not argue that Microsoft actually had tied two distinct products. Rather, it said that Microsoft *could* have had two distinct products that it *should* have sold separately. And the government did not argue that Netscape was foreclosed from distributing its browsing software. Rather, it claimed that Microsoft made it more expensive for Netscape to distribute its browsing software.

Tying About a month after the government filed its antitrust complaint, a panel of judges from the D.C. Circuit Court of Appeals sent a strong message that DOJ's tying claims were dead on arrival. Government lawyers had argued that IE and Windows had to be sold as separate products in order for Microsoft to comply with a 1995 consent decree. Indeed, DOJ had convinced the district court to bar Microsoft from requiring computer manufacturers that licensed Windows 95 to "accept and preinstall the [IE 3.0] software code." The government thought that IE was a separate computer program. Thus, making computer manufacturers take IE to get Windows 95 was like a publisher requiring a bookstore to stock *The Federalist Papers* if it wanted to sell Tom Clancy's next techno-thriller.

Microsoft argued that IE 3.0 was Microsoft's brand name for features provided by code woven into Windows 95, namely, Web-browsing capabilities, services for other parts of Windows and services for software developers writing programs for use on Windows. Microsoft argued that it had not violated the consent decree, which expressly stated that the anti-tying provision should not prevent Microsoft from developing integrated products.

The D.C. Circuit agreed with Microsoft, deciding that the integration of browsing capabilities into Windows was analogous to combining a graphical user interface (the

now-familiar point-and-click system for maneuvering around a computer) with a personal computer operating system. If Windows 95, which integrated features of MS-DOS and Windows 3.11 (and then added more features), was a good thing, as the consent decree itself had recognized, how could the addition of Internet-related capabilities, including browsing, to Windows 95 be a bad thing? The D.C. Circuit concluded that the courts have no business second-guessing design decisions made by companies—even companies with monopoly power.

The D.C. Circuit paraphrased the late, great antitrust scholar Philip Areeda in saying "new products integrating functionalities in a useful way should be considered single products regardless of market structure." The judges offered only one exception to that rule: the integration could not be

DOJ no longer claimed that Microsoft had separate browser software. Instead, it claimed that Microsoft could have created separate browser software.

a ruse, where truly separate products were bolted together with no real benefit to end users. But even then, the court noted, Microsoft had to show only that the integration brought "plausible" benefits and did not need to convince the court that the integrated product was better than two stand-alone products.

In its proposed findings, DOJ no longer claimed that Microsoft had browser software that was separate from its operating system software. Instead, it claimed that Microsoft could have created separate browser software, but instead "welded" the browser code to the Windows code with the goal of driving Netscape out of business. Indeed, a close reading shows that DOJ replaced the tying claim from its original complaint with an adventurous—and dangerous—"predatory" design claim. As Professor Franklin Fisher, DOJ's economic expert witness, put it in his testimony:

And there is, you know, evidence that they could have perfectly well designed Windows 98 and IE to also work seamlessly without having the what I have referred to the other day as the welded feature, the difficulty of taking it apart feature. If that is so, then I think yes, it probably was anticompetitive...because they could have done it in a way that is less restrictive.

The government thus picked up on the D.C. Circuit's point that merely bolting two products together cannot be called integration. DOJ recognized that Microsoft did not bolt two products together; there is no separate IE bolted to Windows. But the government tried to convince the federal district court that Microsoft "welded" two products together—deliberately combining functions in a way that makes

it impossible to separate them. DOJ argues that such welding can be just as bad as “bolting” if there is any practical way to offer the functions separately.

But the test imposed by the circuit court effectively put the burden on the government to show that integration served no competitive end. And given that independent reviewers of IE 4.0 pointed to the benefits of Microsoft’s integration with Windows 98, it is hard to see how DOJ could credibly claim there are no “plausible benefits” to Microsoft’s design decisions. As Dean Richard Schmalensee said in testimony that is not refuted in the government’s proposed findings or in the trial record:

Yet one only has to read the many industry publications such as *PC Magazine* or popular periodicals like *Business Week* or *The Wall Street Journal* to find reviewers, who are not parties to this litigation, who find the technological benefits of integration quite significant....

Dean Schmalensee then quoted from several reviews of IE:

The incorporation of browsing and other Internet function into Windows is a powerful innovation. It may be very inconvenient for Microsoft’s competitors, but it’s a big gain for consumers, who should be allowed to enjoy the benefits. (*Business Week*, February 23, 1998)

Once you experience the improvements [IE 4] makes to your Windows desktop, you’ll find it hard to go back.... The next browser upgrade from Netscape should match many of the innovations in IE 4, but tight integration with Windows may continue to give Microsoft an edge. (*PC Computing*, January 1998)

Instead of “launching” a browser and “going out” to the Internet once in a while, Internet information is always right there in front of you. This capability is likely to create more Internet users and make current Net enthusiasts even more active online. (*Windows Magazine*, October 1996)

This integration has big implications even when you are not looking at Internet pages. Because IE is now effectively the user interface, everything works the way it does in a browser. (*PC Magazine*, September 9, 1997)

Convincing the court that there were no plausible benefits from integration would appear to have been an impossible task given these and other facts. Given the impossibility of the task, Professor Fisher rejected the D.C. Circuit’s test in his testimony.

Foreclosure The D.C. Circuit’s decision in June 1998 gave the government some time to refashion its tying case before the trial began in October 1998. By contrast, the government’s foreclosure case seemed to die a slow death during the trial, as evidence accrued that Netscape’s browsing software was widely distributed. Netscape’s own documents showed that it had distributed hundreds of millions

of copies of its browsing software during the period DOJ claimed the company was foreclosed from doing so. Then, too, surveys of how people actually got their browsers showed that they had obtained Netscape browsers from the very channels that the government said were closed off. And other documents confirmed those surveys.

The final blow to the government’s original claims came from information Netscape provided to Goldman Sachs, the investment bank that AOL hired to advise it on the acquisition of Netscape and to conduct the “due diligence” inquiry into Netscape’s value. In January 1999, Professor Fisher insisted that less than 1 percent of new computers were shipped with Netscape’s browsing software. Six months later, a summary of “key findings” by AOL and Goldman Sachs, prepared in the fall of 1998 and based on representations by Netscape, made it indisputable that the correct number was at least 22 percent.

Essential Components of DOJ’s Case With its tying and foreclosure claims destroyed, DOJ shifted ground. Professor Fisher—whom the government cited almost 900 times in its proposed findings—based his conclusions on radically new tests for whether business behavior is procompetitive or anticompetitive.

Raising Rivals’ Costs Professor Fisher claimed that (a) Microsoft made it more expensive for Netscape to distribute its browsing software, (b) such behavior is an example of the business tactic of “raising rivals’ costs,” and (c) raising rivals’ costs is an anticompetitive practice. Although the idea of raising rivals’ costs has certainly been grist for technical articles in economics, its application to antitrust cases is not widely accepted. (See, for example, the articles by William E. Cohen and Edward A. Snyder and Thomas E. Kauper listed under “Readings” at the end of this article.)

Here is the problem. Anticompetitive actions can increase rivals’ costs in certain cases—but so can procompetitive ones. Suppose workers in both Company A and Company B belong to a union. Company A conspires with the union to make Company B sign a more onerous contract than Company A’s contract. That raises Company B’s cost relative to Company A’s cost, which enables Company A to charge higher prices and reap higher profits. Consumers are worse off because they are paying more for the same product.

Now suppose Company A invests in an innovation that makes its product better than Company B’s product. Company B may have to increase advertising to persuade consumers to buy its now-inferior product—and it will certainly have to spend more on R&D to match or surpass Company A’s innovation. Company A earns more profits than it would have if it had not come up with the innovation. Still, consumers are better off because they are getting better products from Company A and, eventually, will get them from Company B as well.

But such nuances cannot be found in Professor Fisher’s testimony. Indeed, stripped to essentials, his analysis amounts to this false syllogism:

- Anticompetitive practices can raise rivals' costs.
- Microsoft raised rivals' costs.
- Therefore Microsoft engaged in anticompetitive practices.

To see why the syllogism is false, just replace "anticompetitive" with "procompetitive." Or consider DOJ's specific complaint, as outlined in the government's proposed findings.

DOJ argued that computer manufacturers were less likely to pay Netscape to distribute its browser once Microsoft had replaced its IE 2.0 code with IE 3.0 and then with IE 4.0. For although IE 2.0 was widely viewed as inferior to Netscape Navigator 2.0, IE 3.0 was at least equal to Navigator 3.0, and IE 4.0 was plainly better than Navigator 4.0. Thus, once Microsoft was distributing better Web-browsing software, Netscape could not readily charge computer manufacturers for distributing its browsing software. That raised Netscape's cost of distribution. But it is hard to see how Microsoft's actions, which delivered superior browsers to consumers at lower prices, were anticompetitive.

Predatory Product Design DOJ argued that integrating new features would be anticompetitive if the company doing the integrating "could have done it in a way that is less restrictive." That assertion differs from the D.C. Circuit's test in two important ways. First, it requires courts to weigh supposedly anticompetitive effects against technological benefits of product improvement—precisely the exercise the D.C. Circuit recognized that courts are ill-equipped to perform. Second, it implies that, in making design decisions, companies have an obligation to design their products in ways that have the least adverse effect on their competitors.

Such a test has dreadful implications. It probably would have prohibited the software integration that resulted in Windows 95, or at least subjected it to a detailed antitrust inquiry into its technological benefits. After all, Microsoft's MS-DOS operating system was the leading software platform in the late 1980s. And although Windows started out as a graphical user interface, it had become a full-fledged platform by the time Windows 3.0 was released in 1990. Microsoft's integration of the capabilities of MS-DOS and Windows into Windows 95 would have run afoul of the government's anticompetitiveness test because that integration adversely affected competitors of both MS-DOS and Windows 3.x.

More important, the new test arbitrarily brands Microsoft's behavior as anticompetitive while labeling equivalent Netscape behavior as procompetitive. Consider the terms of competitive engagement in software markets in early 1996. Netscape has the dominant browsing

software. The company thinks that it can compete with Microsoft by integrating into its browsing software platform certain features—"applications programming interfaces"—that software developers can use to write applications that work with the Internet. For its part, Microsoft has the dominant software platform for Intel-compatible computers. It thinks that it can compete with Netscape by integrating into its platform certain browsing capabilities that software developers can use to write applications that work with the Internet.

Both companies, according to DOJ, are converging on the same product design—a software platform with integrated browsing functionality. Yet DOJ claims that Netscape's inte-

DOJ's argument implies that companies have an obligation to design their products in ways that have the least adverse effect on their competitors.

gration of platform features into its browsing software is procompetitive, while Microsoft's integration of browsing features into its platform is anticompetitive.

Predatory Pricing The government's May 1998 complaint did not claim that Microsoft engaged in classic "predatory pricing," which case law has defined as selling a product at less than the cost of producing it for the sole purpose (and likely effect) of driving a rival out of business and allowing the surviving firm to raise prices to supra-competitive levels. During the trial, however, predation (as redefined by the government and its experts) became the focus of the case. Professor Fisher testified that, in determining whether a price is below cost, the profit that the firm gave up in competing with its rival should be included as a component of cost. Yet as Dean Schmalensee explained, Professor Fisher's rule means that it is anticompetitive for a firm to lower its price in response to fear of competition—even if the reduced price is greater than its cost of production and is therefore still profitable.

Suppose Firm A charges \$10 for a product it makes for \$7. Firm B comes along and plans to charge \$9 for a similar product that it could make for \$8.50. Professor Fisher would prohibit Firm A from lowering its price to \$8, even though the \$8 price would be well above its cost of production and perfectly acceptable under the tests for predation usually employed by the courts.

The government suggests that if Microsoft had not been competing with Netscape, Microsoft would have charged a higher price for IE. That argument could prove a very hard sell to a higher court. The Supreme Court narrowed the circumstances in which a plaintiff could make a predatory pricing case precisely because of its skepticism

that the courts could distinguish predatory pricing from competitive pricing. By contrast, Professor Fisher and DOJ would vastly expand the room for firms to complain that their competitors are charging too little.

Summary By the end of testimony in June 1999, DOJ's charges against Microsoft fit into three categories: raising rivals' costs, predatory product design, and the Fisher version of predatory pricing. These theories have several things in common. First, they have no grounding in existing antitrust law and have not been widely accepted by economists as describing anticompetitive conduct. Second, if these theories were adopted by the courts as standards for mea-

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asuring anticompetitive behavior, courts could second-guess firms on a wide range of business decisions related to distribution, product design, and pricing. Third, these theories condemn many business actions that benefit consumers.

EVALUATION OF THE GOVERNMENT'S CASE

THE OLD CASE—THE ONE DESCRIBED IN DOJ'S MAY 1998 complaint—argued that Microsoft violated the antitrust rules against tying and foreclosure. It did not claim that Microsoft engaged in predation or predatory pricing. Indeed, the words do not appear in the text. The new case—the one described in the government's September 1999 proposed findings of fact—is just a predation case. The words "predation" or "predatory" appear 229 times. The three elements of the case—raising rivals' costs, predatory product design, and Fisher's version of predatory pricing—are all different elements of Microsoft's alleged predatory strategy for driving Netscape out of business.

Where Are the Bodies? The biggest problem with DOJ's new predation story is that key plot elements are missing. Like murder mysteries, predation stories usually have corpses. According to DOJ, Microsoft began to implement its strategy to destroy Netscape after a meeting with Netscape executives in June 1995. Yet almost four years later, AOL bought Netscape for stock that was worth about \$10 billion by the time the deal was consummated. Today, Netscape's browsing software is used by about 40 percent of people who browse the Web. And if AOL were to switch its subscribers to Netscape browsing software (as many observers expect it will when AOL's current contact with Microsoft expires), Netscape's share of browser users would rise to over 60 percent.

No one died, but the government conjured its own peculiar version of a corpse. Its proposed findings say that Netscape is no longer a viable competitor to Microsoft because less than 50 percent of consumers browse with Navigator. Nowhere does the government explain why 50 percent—as opposed to, say, 25 percent or 75 percent—is the magic number. (The court has adopted and elaborated DOJ's claim in its findings of fact, despite the lack of evidence. The court also sees AOL's acquisition of Netscape for \$10 billion as evidence of Netscape's weakness, not as a source of additional funding and marketing.)

The other alleged victim—Sun's Java—is also thriving. The government portrayed Netscape as the key vehicle for distributing the Java Virtual Machine (JVM), the software that lets computers run programs written in Java. But most operating systems—including those from IBM, Apple, and Sun, as well as from Microsoft—now have built-in JVMs. Indeed, before its acquisition by AOL, Netscape had announced that it would no longer develop its own JVM, because high-quality JVMs

were readily available from other sources for all of the platforms on which Netscape ran.

Under its alliance with Sun, AOL will now distribute both the Navigator browser and Sun JVM to its subscribers. Sun and AOL also are developing a new Internet browser written in Java. Many independent software developers are using Java to create powerful server-based applications. For example, users of Oracle's new database program use Java to input data and to submit queries; the program then does the heavy-duty computing on a server.

Java has not fully lived up to Sun's claim as the coming of the "write once, run anywhere" software generation. But it is certainly available anywhere to anyone who wants to use it. And as computer power continues to grow and more computers are linked to the Internet at higher speeds, Java's technical liabilities are likely to fade and its importance as a software platform is likely to grow.

Indeed, the government appears to have shelved claims that Java is dying or even injured. The government focuses instead on the attempted murder by Microsoft. DOJ cites email and secondhand quotes about Microsoft's hopes for crushing Java through its strategy of encouraging Java developers to use Windows features.

Sun's contractual claims against Microsoft—which the government seems to have swallowed whole—revolve around how Java programs running on Windows machines can use non-Java, platform-specific code. Such programs, by definition, cannot run "anywhere." But ironically, Microsoft's JVM was able to run a higher percentage of "pure," Sun-certified Java applications than any other JVM—including Netscape's and Sun's—according to tests by *PC Magazine* (April 7, 1998, p. 150). Neither DOJ nor the district court acknowledges that fact.

The Case Is about Platforms Whether you read Microsoft's or the government's proposed findings of fact or the court's findings of fact you will discover that the nub of the case involves software platforms—and, more specifically, the race to develop the next great software platform. It might therefore seem surprising that DOJ and the court ignored the state of competition among software platforms. The explanation is simple, although disquieting.

A Short Course on Platforms, Operating Systems, and Middleware A software *platform* is software that makes it easier for software designers to develop and run software applications. Platforms provide standard modules of code that software developers can reuse, rather than write themselves, and that make applications run faster and more reliably.

A computer *operating system* is a natural software platform because the core task of an operating system is to tell hardware what to do—for example, how to store and retrieve information from the computer memory, how to display characters on a monitor, and how to use a modem to connect to the Internet. By exposing applications programming interfaces (APIs), operating systems provide these same services to software applications. Of course, there is no reason the APIs provided to software developers should be restricted to hardware control. The more services and features an operating system offers to software developers, the more attractive they will find the system.

Windows 98 is an operating system for Intel-compatible personal computers. It is a very popular software platform: tens of thousands of applications use Windows APIs. Both Microsoft and DOJ agree that Microsoft makes a lot of

money from Windows because so much applications software is written for the Windows platform—but they disagree as to why. Microsoft says that Windows is valuable because it is a very good platform and Microsoft has invested a great deal of effort in helping software developers write applications for it. DOJ says that Microsoft can make excessive profits on Windows because the number of applications written for Windows creates a barrier to entry that prevents other companies from challenging Windows' dominance as a platform.

Middleware programs also make natural platforms. Middleware is software that stands between an operating system and applications. It uses the features and services provided by the operating system. However, it, too, exposes APIs that provide features and services—for example, file management—that may be better than those offered by an operating system or that an operating system does not provide at all.

Windows is a classic example of middleware that evolved to a platform and eventually to an operating system. Windows began in 1985 as little more than a graphical interface for MS-DOS, the Microsoft Disk Operating System. Successive versions of Windows added more features that applications could use and, by version 3.1 in 1992, it was a widely used platform. It could not, however, run without DOS. At the same time, MS-DOS continued to be a platform in its own right; it could run many programs without Windows. With the release of Windows 95 in 1995, the evolution from middleware to standalone operating system was complete: Windows no longer needed DOS to run applications.

Netscape's browser and Java's package of technologies serve as middleware, enabling applications software to run on more than one computer operating system.

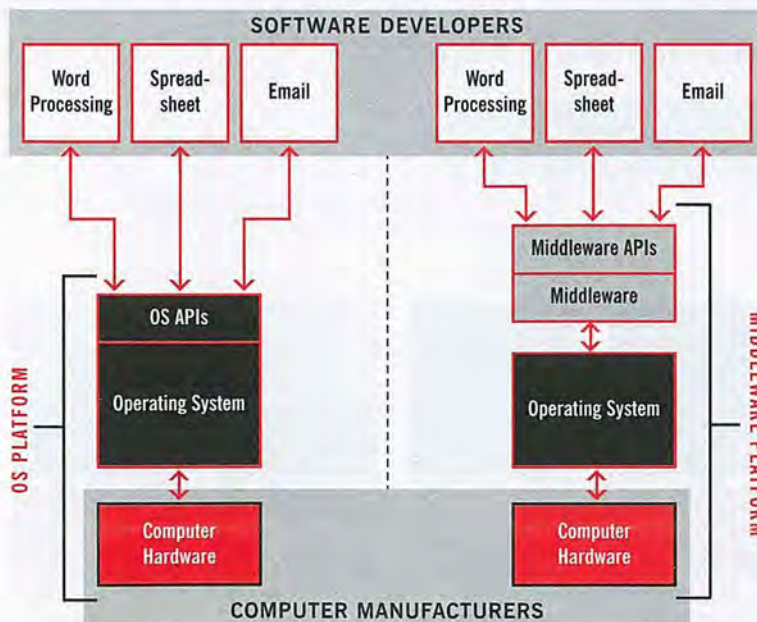
Indeed, the Web provides a natural platform and, perhaps, the greatest current threat to Windows. Software developers are writing applications that use APIs provided by software running on Web servers. Consumers can use these applications with any Web browser. As an article introduced at trial noted, software developers are writing Web applications "in droves."

Figure 1 shows the relationships among hardware, operating systems, platforms, middleware, and applications. The platform model on the left is based on the marriage between a specific operating system and type of hardware. The platform model on the right is based on middleware that can sit on top of many different operating system and platform combinations.

Platform Competition Microsoft and DOJ agree that, as a platform, Windows faced competition from Netscape Navigator and Sun's Java. Although it is unclear from the record how serious Netscape was about transforming Navigator into a widely used platform, Netscape executives did brag that Navigator was going to displace Windows as a platform. Marc Andreessen, Netscape's co-founder,

Figure 1

Operating Systems Compete with Middleware



said that browsers would reduce Windows to an unimportant collection of “slightly buggy” device drivers. And Netscape did try to persuade software developers to write applications that used the APIs in Navigator. For example, Netscape held a developer conference in 1996 attended by more than 3,000 independent software developers. Those developers were interested in learning how to use Java and Netscape’s proprietary programming language, JavaScript, to write Windows-independent software. Microsoft took that threat seriously.

Sun promotes Java as a “write once, run anywhere” solution for software developers. If successful, Java itself could serve as a platform, and software developers would be less reliant on an operating system for features and services. Microsoft also took that threat seriously.

The competition among Microsoft, Netscape, and Sun began during a transition that people in the computer industry call an “inflection point,” historians of science call a “discontinuity,” and economists call a “period of creative destruction.” The transition dates from the takeoff of the Internet, starting around 1994. The Internet had existed in some form since the early 1970s, but it started growing rapidly in the mid-1990s as a result of innovations in communication protocols and languages for communicating, reductions in telecommunications costs, and reductions in computing costs. Microsoft, Netscape, and Sun all wanted to develop the platform that software developers would use when writing applications for the Internet.

Microsoft and DOJ agree that Microsoft wanted Windows to remain the platform of choice and that it was competing with Netscape and Sun, which were promoting Navigator and Java, respectively, as platforms. But the agreement ends there. Microsoft claims that it competed to retain its leadership position in ways that served the interests of consumers. DOJ argues that Microsoft’s behavior would, in

the long run, have harmed consumers—and thus would have violated antitrust laws.

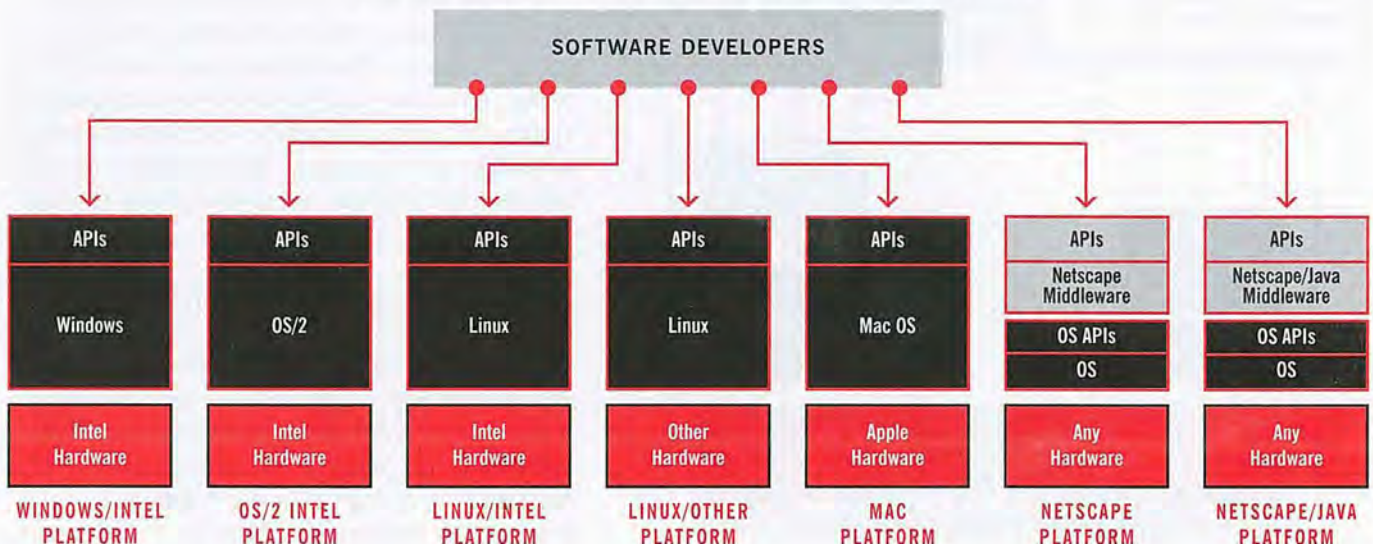
The Market for Operating Systems In light of the government’s approach, one might have expected its experts to analyze (a) whether Microsoft had monopoly power in the market for software platforms and (b) whether Microsoft had used predatory tactics to maintain that monopoly power. But the government did not do that. As the first 100-plus pages of its proposed findings make clear, the government focused on the alleged market for “operating systems for Intel-compatible personal computers.” That market does not include Netscape, Sun, or the many other companies that are trying to develop the next ubiquitous platform.

The question of whether Microsoft has monopoly power in the market for operating systems for Intel-compatible personal computers might well be relevant to some antitrust cases, but not to the case the government actually brought. Figure 2 illustrates the problem. The arena of competition involves Microsoft, Netscape, Sun, and others striving to become the platform of choice for the Internet and trying to get the attention of software developers. Rather than focus on that arena, the government defined a market that treats Windows solely as an operating system for Intel-compatible personal computers and ignores Windows as a platform for applications developers.

The government’s decision to focus on operating systems seems illogical for at least two reasons. First, its proposed findings argue that Microsoft’s monopoly power from Windows stems from Windows’ success as a software platform—from the “applications barrier to entry.” So the government, in effect, had claimed that the relevant market is operating systems but that the source of Microsoft’s monopoly power lies in Windows’ role as a

Figure 2

Windows Competes with Many Platforms



software platform. Second, the government argued that Netscape Navigator and Sun Java competed with Microsoft Windows, but then its proposed findings assert that Navigator and Java were in different markets than Windows.

One can only speculate why the government focused on the wrong market. When it filed its complaint in May 1998, DOJ alleged that Microsoft had tied IE to Windows. To sustain that tying argument, DOJ had to claim that browsing software and operating systems were separate markets. Defining a platform market that included Netscape Navigator and Microsoft Windows would have killed the government's antitrust tying claims. That is because both companies were trying to produce the same single product—a platform with browsing capability. The government's predatory pricing claim also would have fallen. Instead of trying to show that Microsoft had priced its browsing software below cost, the government would have had to show that Microsoft priced Windows (including the browsing feature) below cost.

Note, too, that a focus on the platform market would have compelled DOJ to evaluate the importance of the various platform threats that Dean Schmalensee described in his testimony. Either the government did not understand the distinction between operating systems and platforms when it filed its case or it gambled that the court would not be troubled by the inconsistent market definition—thus making it plausible to assert a tying claim as well as a predatory pricing claim.

In its proposed findings, the government tried to defend its inconsistent market definition. It said that Netscape and Java were not in the same market as Windows because Windows could talk to the hardware as well as talk to applications, while Netscape and Java could talk to applications but not to hardware. If that were true, when Microsoft thinks about setting prices and adding features to Windows it would worry more about little-used operating systems for Intel-compatible computers (such as DR DOS) than about the burgeoning middleware threats at the center of the case. But, as the government readily conceded, Microsoft clearly does not do that. And, by the government's logic, because Windows, Navigator, and Java are in separate markets, DOJ would have let Microsoft buy Netscape's Navigator or Sun's Java. That is unlikely.

It is not hard to see the flaw in the government's defense of its market definition. DOJ said that Windows was a monopoly because other platforms could not get software developers to write enough applications for them. But it also said that once you removed that "applications barrier," many firms could write operating systems that talk to the hardware. If that were true, the only thing protecting Windows as an operating system would be its success in competing with other platforms for the attention of software developers. It follows that the critical competitive arena, in

which competition in operating systems is determined, involves providing software platforms for applications developers and consumers.

Although analogies never work exactly, it may help to consider a hypothetical market for CD players, DVD players, and amplifiers. Suppose you have a patent on the CD player and decide to produce an integrated CD player-amplifier. (It is not that hard to produce amplifiers, and there are several firms that make them for people who want to add

The judge rescued DOJ's foreclosure case by rejecting and disregarding evidence concerning Netscape's ability to distribute its browsing software.

different components.) Consumers flock to your integrated product. Now someone gets a patent on the DVD player, which people can use with your player-amplifier or with any of the standalone amplifiers available from other firms. You are faced with two threats. If DVDs become popular, record companies may release more albums on DVDs and fewer on CDs. That would make your CD franchise less valuable. And people might decide to buy DVD players and amplifiers instead of your integrated product.

That may seem like competition to you, but—according to DOJ's logic—DVD players do not actually compete with your product because they do not have an integrated amplifier—they do not talk to the speakers.

THE COURT'S FINDINGS OF FACT

BY OFFERING THE COURT NOVEL LEGAL THEORIES, DOJ TRIED to save its tying and foreclosure claims in the face of facts that appeared overwhelming. That effort was unnecessary. The judge seemingly "solved" the problem of the D.C. Circuit's earlier decision on tying by finding that there were no plausible benefits of integrating browsing functionality into the operating system that could not have been achieved by Microsoft's designing a different product. And he rescued DOJ's foreclosure case by rejecting survey-based evidence submitted by Microsoft and disregarding other evidence concerning Netscape's ability to distribute its browsing software.

Tying The contemporaneous media reviews of IE lauding its integration into Windows would seem enough to satisfy the D.C. Circuit's desire for evidence of "plausible" benefits. Yet the court does not mention those benefits. Nor does the court mention the evidence—most of which the government did not challenge—that the presence of software code that is within the court's apparent definition of "IE" supports an improved "Help" system for Windows itself and provides other benefits to Windows users. The court gives no weight to the benefits reaped by third-party

software developers—including competitors of Microsoft such as IBM/Lotus—that use the Internet components that are integrated into Windows. At the same time, the court imputes improper motives to the statements of Microsoft executives, who themselves appear to be seeking real benefits from integration: “We should dedicate a cross group team to come up with ways to leverage Windows technically more.... We should think about an integrated solution—that is our strength.... We have to be competitive with features, but we need something more—Windows integration.”

DOJ's case against Microsoft and the court's findings of fact are based on an artificial world that could exist only within the four walls of a courtroom.

The most striking evidence of plausible benefits from integration is that all other commercially significant operating systems include a browser and tout the additional Internet features included with each new version. Marketing for Apple's latest release—OS 9—focuses predominantly on Internet features, including its enhanced ability to search the Internet in the same way it searches the user's local hard disk.

The district court accepted only the facts that support the D.C. Circuit's “ruse” exception. But the court ignored the D.C. Circuit's admonition against courts intruding into product design. Instead, the district court included long, technical discussions of tradeoffs in speed and memory usage for different ways of organizing code into files.

Indeed, the court offers conclusions best characterized as surmises:

To the extent that browsing-specific routines have been commingled with operating system routines to a greater degree than is necessary to provide consumer benefit, Microsoft has unjustifiably jeopardized the stability and security of the operating system. Specifically, it has increased the likelihood that a browser crash will cause the entire system to crash and made it easier for malicious viruses that penetrate the system via Internet Explorer to infect non-browsing parts of the system.

The trial record contains no empirical support for this discussion of software design, and there were no data presented by the government about the frequency or severity of crashes. And if the court's claim about the integration of Windows and IE is true, the same claim must hold for the new features that Apple has added to OS 9. Apple does not seem to believe that the costs of integration outweighed the benefit, nor do the other operating system vendors who advertise “integrated” or “built-in” browsing software.

Foreclosure The court's approach to the foreclosure evidence is seen best in its analysis of whether Netscape was foreclosed from distributing Navigator through OEMs. The court relied entirely on Professor Fisher's testimony that Navigator was present on only a tiny fraction of OEM machines. The court's finding will come as quite a surprise to the millions of consumers who in the last few years have bought machines with Navigator pre-installed. The assertion of foreclosure is likewise difficult to square with the admission at trial of Netscape's CEO Jim Barksdale, who conceded that Netscape had added approximately 45 million users while Netscape was allegedly foreclosed from distribution. (See also the earlier discussion of the “key findings” of Goldman Sachs's due diligence inquiry for AOL.)

Novel Legal Theories It remains possible that the district court will embrace some or all of DOJ's radical economic and legal theories when

the court makes its conclusions of law. The court's findings of fact suggest otherwise, however. Professor Fisher relied on an integration test of his own making that was based on balancing the procompetitive and anticompetitive effects of integration. The court may not rely on that test. It may think it has met the D.C. Circuit's test for second-guessing tying by asserting that any plausible benefits from Windows' integrated browser could have been achieved with a separable browser.

And the court may not have to take up DOJ's raising-rivals'-cost alternative to a claim of foreclosure. The court disregarded much if not all of the evidence that vexed DOJ.

At this point, it is also unclear whether the court will take up DOJ's invitation to find predatory pricing. Like DOJ in its complaint—and unlike DOJ in its proposed findings of fact—the court in its findings never says “predation.” The court reaches some findings suggestive of predation, but the fact that it does not reach many of the findings necessary to meet the case-law precedents leads me to believe that the court will not reach an explicit finding of predatory pricing.

CONCLUSION

AT ITS HEART, DOJ'S CASE AGAINST MICROSOFT AND THE court's findings of fact are based on an artificial world that could exist only within the four walls of a courtroom. It is a world in which:

- Downloading software is beyond the ken of the average user, even though tens of millions of consumers have downloaded Netscape Navigator and Microsoft's IE.
- Integrating a browser into the operating system is bad for consumers, even though the makers of almost every operating system have thought and acted otherwise since 1994.

- Apple is not a viable software platform because a mere 12,000 applications have been written for it.
- Microsoft's Windows is said to compete with niche operating systems for Intel-compatible computers, such as DR-DOS, but not with innovative platforms, such as Sun's Java, the Web, or the out-of-left-field threats to Windows' dominance that seem to appear every other day.
- Distribution of software titles on the Windows desktop is essential, even though most software titles are distributed through other channels.

And even this world made up by the prosecutors is rife with contradictions. According to the government and the court, Microsoft possesses durable monopoly power that is protected by an impenetrable applications barrier to entry—a barrier so impregnable that neither Linux nor Apple nor any entrant could put a chink in it. Yet Microsoft purportedly spent hundreds of millions of dollars and focused its management efforts on destroying Netscape's browser business and Sun's Java business because Microsoft was afraid that software developers would flock to Netscape's and Sun's products in droves.

Or consider this example. AOL now owns Netscape. About a year from now AOL could switch all of its subscribers to Netscape, thus reducing Internet Explorer's share of browser usage to less than 40 percent. Yet the government dismisses AOL as a potential competitor to Microsoft. It is as if the only challenge to Microsoft that ever could have succeeded was the challenge mounted by Netscape, on its own, between 1995 and 1998, in spite of the fact that Netscape never exposed the comprehensive library of APIs needed to become a major software platform.

There is a simple explanation for many of the facts in this artificial world, as well as the facts in the real world. Microsoft had the leading platform in the pre-Internet world. It wanted to have the leading platform in the Internet world. To compete, it invested heavily in redesigning Windows to make it an attractive Web-centric platform. And Microsoft invested heavily in distributing its IE technologies so that they would become the standard for the Internet.

Microsoft competed against Netscape and Sun in this race. Netscape was the dominant browser for a while, and both Netscape and Sun had announced their ambitions to displace Windows. If Microsoft had not invested in developing and distributing Internet Explorer, it is likely that Netscape would have controlled the key Internet standards—all of which are now open, controlled by neither Microsoft nor Netscape. Netscape's victory would have been bad for Microsoft. And it would have been bad for consumers.

Consumers, however, make only token appearances in either DOJ's or the court's rendition of events. After 407 paragraphs, the court acknowledges that

The debut of Internet Explorer and its rapid improvement gave Netscape an incentive to improve Netscape's quality at a competitive rate. The inclusion of Internet Explorer with Windows at no separate charge increased general familiarity with the Internet and reduced the cost to the public of gaining access to it, at least in part because it compelled Netscape to stop charging for Navigator. These actions thus contributed to improving the quality of Web browsing software, lowering its cost, and increasing its availability, thereby benefiting consumers.

None of the government's amorphous claims of consumer harm comes close to outweighing the tangible benefits thus acknowledged by the court. And the remaining four paragraphs of the court's findings fail to fill the void left by the government's claims. The court instead falls back on vague assertions to the effect that the world would be a better place if only Microsoft competed less vigorously.

R E A D I N G S

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- *The Court's Findings of Fact in United States of America v. Microsoft Corporation*, Civil Action No. 98-1232 (TPJ).
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