

Microsoft's Appealing Case

by Robert A. Levy and Alan Reynolds

Executive Summary

Judge Thomas Penfield Jackson's final judgment in the Microsoft case indicates that he has fallen hook, line, and sinker for the government's flawed arguments. But the U.S. Court of Appeals for the District of Columbia Circuit is unlikely to be so accommodating. The Justice Department's case will crumble as a result of procedural errors, flawed fact-finding, wrongheaded legal conclusions, and Jackson's preposterous plan to break up the software company most directly responsible for America's high-tech revolution.

On the procedural front, Jackson expanded the scope of the trial to include charges that were not part of the government's initial complaint, conducted the trial on an accelerated timetable that did not allow Microsoft sufficient opportunity to prepare its defense, embraced the government's proposed remedies without any hearing whatsoever, and granted media interviews, during and after the trial, in violation of judicial ethics.

Still worse, Jackson's findings of fact do not hold up under serious scrutiny. Those findings were the shaky foundation on which he constructed his conclusions of law. And when the foundation is unsound, the resultant structure collapses. True to form, Jackson's legal conclusions about Microsoft's tying arrangements, first-screen restrictions, and so-called exclusionary contracts are quite simply incorrect.

The government's remedies, rubber-stamped by Jackson, may well be the most destructive aspect of this baseless case. If one didn't know better, those remedies would seem crafted to inflict as much damage as possible, not just on Microsoft, but on the broader high-tech marketplace.

Meanwhile, real people will be injured by this foolishness. Microsoft's shareholders—including millions of retirees and mutual fund investors—have suffered an erosion of market value measured in hundreds of billions of dollars. Company employees, like expendable chess pawns, will be deployed to advance the Justice Department's dismemberment scheme. And consumers will pick up the tab as disgruntled competitors devote their resources to politicking instead of creating innovative products. Ultimately, that political agenda will destroy what it sets out to protect. Microsoft's rivals may get the kind of government they ask for—including oppressive regulation.

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Introduction

We'll soon know whether the Department of Justice will be successful at dismembering what used to be the most valuable corporation in the world. If the government fails, it won't be for lack of trying. Instead, DOJ's case will come tumbling down because its foundation is paper thin. Despite an initial victory before U.S. District Judge Thomas Penfield Jackson, the government cannot sustain its charges on appeal. The trial was incurably plagued by procedural irregularities; the judge's fact-finding was clearly erroneous; his legal conclusions are unsupportable; and his brutal remedies are neither proportionate nor even related to the asserted infractions.

But first, some background. Here's how Microsoft—prodigy of the new economy yet former neophyte in the ways of Washington—suddenly awakened to find that its very existence was under siege.¹

The Federal Trade Commission started the ball rolling against Microsoft in 1991 with a fruitless two-year investigation of claims that the software maker monopolized the market for PC operating systems. Then came another two years of scrutiny by DOJ, culminating in a 1995 consent decree. Two years later, the government claimed that Microsoft had flouted that decree by tying its Internet Explorer browser to the Windows operating system—that is, by requiring every buyer of Windows to take Internet Explorer as well. In the ensuing lawsuit, Judge Jackson agreed with DOJ, but he was reversed in mid-1998 by a higher authority, the U.S. Court of Appeals for the District of Columbia Circuit.

That didn't stop DOJ. In May 1998 the Antitrust Division, joined by 20 state attorneys general (reduced to 19 after South Carolina pulled out), sued Microsoft for violating the Sherman Antitrust Act.³ After an eight-month trial, Jackson released his findings of fact in November 1999, once again deciding for the government on virtually every issue. Those fact-findings essentially dictated the outcome, laying the groundwork for the

judge's legal verdict. Predictably, when Jackson issued his conclusions of law in April 2000, he held that Microsoft had indeed violated the Sherman Act. Then came the bombshell. Less than a month later, on April 28, Jackson proposed an array of conduct and structural fixes, including the breakup of Microsoft into two separate companies, without a minute of hearings on remedies.

Naturally, Microsoft has appealed—to the D.C. Circuit Court, which had ruled in favor of Microsoft two years earlier. To show how important the case is, and to signal its willingness—indeed, eagerness—to decide the case, the D.C. Circuit set an accelerated briefing schedule and an early hearing. And although appeals are typically heard by a three-judge panel, the circuit agreed to have the entire court hear the case.

This time, however, DOJ and Judge Jackson tried an end run around the appeals court, asking the U.S. Supreme Court to take the case directly. The government hoped to avoid a repeat of its prior reversal by the D.C. Circuit. But the Supreme Court wasn't required to take the case and elected not to, voting eight to one with only Justice Breyer dissenting. Evidently, the justices did not want to immerse themselves in a trial record that is both voluminous and complex. They decided it would be better for the appellate judges first to sharpen the issues. No doubt the justices were also aware that they could be wasting their valuable time should a Bush administration decide to settle the litigation in 2001. Possibly, the Supreme Court also wanted to ensure that the circuit court would have an opportunity to rebuke its own trial judge, given his glaring procedural and substantive blunders.

Meanwhile, pending appeal, the remedies ordered by Judge Jackson—both conduct and structural remedies—have been put on hold. Originally, DOJ had asked the judge for a narrowly tailored court order that would enjoin Microsoft from engaging in four allegedly anti-competitive activities. Specifically, Microsoft was not to (1) enter into new contracts or enforce existing contracts with

Internet service providers or content providers that would foreclose distribution or promotion of Netscape's competing Internet browser; (2) technologically tie its own browser to its operating system, unless it gave users a practical means to untie the two products and offered the stripped operating system at a reduced price; (3) treat Netscape's browser any differently than Internet Explorer with respect to inclusion or exclusion from the Windows package; or (4) retaliate against any original equipment manufacturer (OEM) that chose to remove Internet Explorer from Windows 98.

That was the relief sought by DOJ in court filings as late as September 1998. But once the trial ended a month later, those requests somehow morphed into a barrelful of remedies that extended far beyond anything DOJ had initially considered necessary to address Microsoft's supposed misbehavior. In the end, here are the remedies that the government proposed—by and large rubberstamped by Judge Jackson in his final order.

First, the conduct remedies. Microsoft would have to (1) refrain from exclusionary contracts with Internet service providers and content providers; (2) refrain from tying contracts with OEMs; (3) if products are bundled, sell an unbundled version at a lower price (thus, Microsoft might not be able to give away its browser); (4) agree not to "penalize" companies for supporting rival software; (5) charge uniform operating system prices to its largest customers, even if those customers offered a better product, or better service, or helped control software piracy; (6) disclose to software developers its applications programming interfaces—not just instructions regarding use of the interfaces but actual source code; (7) disclose sufficient source code to enable OEMs to redesign the Windows opening screen, in effect devaluing the Windows brand name and infringing Microsoft's copyright protection; (8) continue to license prior versions of its operating system on the same terms for three years after a new version is released; (9) retain all executive e-mail pertaining to platform software

for four years; and (10) establish what Loyola economics professor Thomas DiLorenzo has called a "creepy and totalitarian . . . Gestapostyle monitoring system" whereby the government has ongoing access to inspect and copy virtually all of Microsoft's records, and Microsoft's employees are able to report violations of government regulations "on a confidential basis."

Neither DOJ nor Judge Jackson was content with those directives, so then came the coup de grâce: structural remedies. Microsoft would be split into two companies—an operating systems company, which would get a one-time license for Internet Explorer, and an applications company, which would otherwise retain all rights to Internet Explorer. The operating system company could not develop a modified version of the browser, even though browser functionality is now integral both to Windows and to rival operating systems, which would face no such restrictions. For 10 years, the operating system and applications companies could not recombine, invest in one another, cross-license products on an exclusive basis, or engage in joint ventures. For the first three of those years, all of the conduct remedies would remain in force for both companies. Any contract between the two companies would have to be on terms no more favorable than those available to third parties. That "most favored company" provision would also apply to technical disclosures between the two firms.

Will Microsoft win its appeal? It should, given the procedural irregularities, factual errors, and mistaken legal conclusions plaguing Judge Jackson's handling of the case.

Procedural Irregularities

When a party to litigation is systematically deprived of due process, and the deprivation is egregious, as it was in the Microsoft case, the court's substantive findings and legal conclusions cannot be sustained. A new trial is frequently necessary. Here, because the procedural errors were so stark, it's conceiv-

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able that the appellate court will direct Judge Jackson to recuse himself from any subsequent proceedings.

Among the more flagrant errors were these: Jackson expanded the scope of the trial to include charges that were not part of the government's initial complaint. He conducted the trial on an accelerated timetable that did not allow Microsoft sufficient opportunity to prepare its defense. He embraced the government's proposed remedies without any hearing whatsoever. In rationalizing his wholesale adoption of the government's remedies, he relied on post-trial evidence that was not part of the record, then applied crim inal sentencing guidelines to a civil antitrust case. Last, during and after the trial, Jackson granted media interviews, contravening an explicit canon of judicial ethics.

Expanded Scope of the Trial

In May 1998, when DOJ first filed its antitrust complaint against Microsoft, the centerpiece of the government's case was its allegation that the company had illegally tied its operating system and its browser. A month later, the D.C. Circuit Court of Appeals effectively wiped out that claim (about which more below). The government responded by raising new allegations, dramatically expanding the scope of its case. Suspecting—incorrectly, as it happens—that Judge Jackson would feel bound by the higher court's ruling, DOJ turned its attention to a variety of peripheral issues, none of which had appeared in its May complaint.

Over the company's repeated objections, the government decided to explore Microsoft's attempt to dominate the server market as well as its relationships with Intel, Apple, RealNetworks, and IBM. DOJ also took the side of Sun Microsystems in a pending lawsuit in which that company had charged Microsoft with "corrupting" Sun's Java programming language by creating a Windows-specific version that was incompatible with Sun's own version. Java and Netscape's browser were two essential components of the "middleware" market—soft-

ware that would bridge the gap between users and their operating systems, thereby enabling applications to run on multiple platforms, not just Windows.

DOJ characterized middleware as a potential threat to Microsoft. Ultimately, Jackson would assert that Microsoft had exploited its dominant Office Suite software to stifle the middleware market. Inconveniently for Jackson, that charge had first been brought against Microsoft by the attorneys general, who later dropped it when their lawsuit was consolidated with DOJ's. No matter. Jackson shrugged off that minor predicament by enlarging the litigation as if all of the charges against Microsoft appeared in the consolidated complaint. Despite the amplified charges, he did not require the government to file an amended complaint. Instead, he simply assured Microsoft that he "would not be making any findings" and "would not predicate any relief" on the new allegations. In the end, those assurances meant nothing.

Speed of the Trial

Faced with defending allegations that appeared out of nowhere, Microsoft sought extra time to prepare its case. After all, an antitrust suit against the largest company in the world was no small matter. Yet Jackson had scheduled the trial to begin on September 8, 1998, only three and a half months from the date of the complaint. And he limited each side to 12 witnesses, each of whom would be required to submit testimony in writing, not on the witness stand. Oral presentations would be limited to cross-examination and rebuttal.

That timetable and format were unprecedented for a major antitrust case. So when the judge allowed DOJ to augment its complaint, digging into all sorts of new charges, Microsoft was sure it would be granted some scheduling leeway. It was not. Despite the complexity of the case, the expanded allegations, and the need for extensive discovery, Microsoft was given less than five months to prepare for trial on the original accusations, and a much shorter time to defend against

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Remedies Hearing

If the quickness of the main trial was extraordinary, the rush to judgment at the remedies hearing set a new speed record. Perhaps more than any other event, the remedies hearing—or, more precisely, the want of a remedies hearing—revealed Jackson's mind-set. When he was first asked whether he contemplated further proceedings to address remedies, Jackson responded, "I would assume that there would be further proceedings." He added that he might "replicate the procedure at trial with testimony in written form subject to cross-examination." He apparently had second thoughts.

On June 7, 2000, Jackson endorsed the government's proposed final judgment and its suggested remedies without a single material change. Not only was Microsoft to be drawn and quartered, but its conduct was to be circumscribed step by step and inch by inch—all without issuing findings, developing an evidentiary record, or even granting the company further discovery on the remedies issue. After pledging to Microsoft that it would have an opportunity to be heard, Jackson reversed himself with the incredible excuse that "testimonial predictions of future events" are "less reliable even than testimony as to historical fact."9 Evidently, the judge forgot that his entire case rested on "testimonial predictions" about the competitive implications of Microsoft's alleged misconduct.

Even more astonishing, Jackson conjured up this rationalization for adopting the government's final judgment: "I am not an economist. I do not have the resources of economic research or any significant ability to be able to craft a remedy of my own devising." That might explain why Jackson couldn't formulate remedies without expert advice, but it certainly does not explain why he chose DOJ as his sole adviser. Here's his answer:

Plaintiffs won the case, and for that

reason alone have some entitlement to a remedy of their choice. Moreover, plaintiffs' proposed final judgment is a collective work product of senior antitrust law enforcement officials of the United States Department of Justice and the Attorneys General of 19 states, in conjunction with multiple consultants. These officials are by reason of office obliged and expected to consider—and act in—the public interest; Microsoft is not.¹¹

Never mind that public officials, no less than private companies, act in their own selfinterest. That's why the Framers devised a system of checks and balances—to rein in the penchant for political society to overrun civil society. The principal difference between public and private actors-to which Judge Jackson is oblivious—is that private companies are guided "as if by an Invisible Hand" to behave in the public interest. By contrast, although self-interest leads to benign outcomes in the marketplace, it frequently yields perverse outcomes when it comes to political decisions. The constituency of a private company is the public, which buys its product. The constituency of a public official is too often the special interests that disproportionately control the political process.¹²

That basic lesson of public choice theory is lost on Judge Jackson. So, too, is a sober conception of due process. Consider these fantastic statements on his refusal to hold hearings on remedies: First, it's "procedurally unusual to do what Microsoft is proposing—are you aware of very many cases in which the defendant can argue with the jury about what an appropriate sanction should be? Were the Japanese allowed to propose the terms of their surrender? The government won the case." Second, "I am not aware of any case authority that says I have to give them [Microsoft] any due process at all. The case is over. They lost." 14

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judge, decide who wins; then decide what process was due. The Queen in *Alice in Wonderland* couldn't have said it better.

Post-Trial Justifications

Maybe Judge Jackson recognized that he had not adequately explained his uncritical acceptance of DOJ's remedies. Surely, the judge knew, however, that his explanation would be subject to even greater scorn if it were based on evidence that was not part of the official record. Nonetheless, to buttress his case, Jackson curiously relied on post-trial e-mails, which had never been proffered as testimony or exposed to the rigors of crossexamination. That belated evidence supposedly proved that Microsoft, notwithstanding the ongoing litigation, was still trying to leverage its monopoly position. Only harsh remedies, so the argument went, could cure such grave wrongdoing.

But the e-mails, unaccountably, concerned matters not before the court. According to one set of messages, Bill Gates had tried to persuade manufacturers of hand-held computers (personal digital assistants, or PDAs) to use a Microsoft operating system called Windows CE. Unless the manufacturers complied, Microsoft would code new features in its applications software so that they would run only on PDAs made by Microsoft itself.¹⁵ But Jackson had already defined the relevant market to include only single-user desktop PCs that used Intel chips. That crabbed view of the market excluded PDAs, Windows CE, and applications software. Even if the definition could somehow be stretched to cover applications software, Microsoft's new features did not confer monopoly power that could be leveraged—at least not as long as versions of the same software without the new features were available.

Taking a different tack to justify his remedies, Jackson observed that they had crystallized only after Microsoft had shown itself "unwilling to accept the notion that it broke the law or accede to an order amending its conduct." ¹⁶In other words, it was Microsoft's lack of remorse that prompted such severe

remedies. That unbelievable assertion, coming as it did before Microsoft had exercised its indisputable right to appeal, meant that Jackson required the company to admit fault or face the consequences.

True enough, federal sentencing guidelines in criminal cases provide for reduced punishment if a convicted defendant accepts responsibility for his criminal acts. But Microsoft was sued under the civil, not the criminal, provisions of the Sherman Act. Courts are not authorized in civil cases to punish antitrust violators. Relief must be remedial, not punitive.¹⁷ Still, in a post-trial luncheon speech to an antitrust seminar, Jackson told his audience that a "structural remedy was never my remedy of choice." It was "a last resort, and in my judgment Microsoft's intransigence was the reason." ¹⁸ There you have it; the decision to gut a halftrillion-dollar corporation hinged on the petulance of a federal judge.

Media Interviews

In a tribute to his candor, if not his legal acuity, Jackson conceded in that same luncheon speech, "Virtually everything I did may be vulnerable on appeal." Perhaps his realization that his legal insights would not convince an appellate court explains Jackson's media crusade to take his case public. Both during and at the conclusion of the trial, he granted "friendly, informal and unstructured" interviews to the New York Times. He also spoke with the Wall Street Journal, the Washington Post, Newsweek, and CNN, commenting on Microsoft's legal strategy and the credibility of its witnesses.²⁰ It's interesting to compare Jackson's public pronouncements with the nearly total silence maintained by Richard A. Posner, respected chief judge of the U.S. Court of Appeals for the Seventh Circuit, who was asked by Jackson to help negotiate an out-of-court settlement. Despite constant pleas from the media to assess the likelihood of a resolution, Posner said nothing.

That is what we should expect from a federal judge, who is charged under Canon

The decision to gut a half-trilliondollar corporation hinged on the petulance of a federal judge. 3A(6) of the *Code of Conduct for United States Judges*²¹ to "avoid public comment on the merits of a pending or impending action." The code goes on to advise against public comment "until completion of the appellate process." In this instance, Jackson's remarks came before Microsoft had appealed; indeed, the *New York Times* interview was conducted during the trial over which Jackson himself was presiding. Not only was the case pending, it was pending *before him* and might even, postappeal, land back in his court for further proceedings.

The only statements to the media condoned by the *Code of Conduct* are those connected with the judge's official duties, his explanation of court procedures (e.g., "the next step is for defendants to file a notice of appeal"), or scholarly presentations for educational purposes. None of Jackson's comments fit the exceptions. Moreover, Jackson was well aware of the rules. In 1991 an appeals panel found that Jackson had improperly spoken at the Harvard Law School about a pending case involving Washington, D.C., mayor Marion Barry.² The same judge, plainly unrepentant, now accuses Microsoft of insufficient remorse and not accepting responsibility for its prior acts.

Erroneous Fact-Finding

To be sure, procedural errors, even if they were to result in a new trial, might simply prolong Microsoft's agony. If Judge Jackson continued to preside, there's little reason to presume-absent an appellate reversal on substantive issues—that his findings and conclusions would be significantly different a second time around. For that reason alone, it's important to scrutinize not only procedural irregularities but substantive issues as well. So we turn now to Judge Jackson's findings of fact and then to the conclusions of law that flowed from those findings. It will shortly be evident that the judge's substantive errors are every bit as troubling as his procedural errors.

Findings of fact are supposed to consti-

tute a judge's assessment of what was discovered during the trial. Regardless of Judge Jackson's colorful language about Microsoft's "immense profits" and "oppressive thumb," nothing in his wordy document is intended to prove any law was broken. The findings are just the foundation for the conclusions of law, which in turn become the basis of any remedies.

Microsoft's critics tend to treat Judge Jackson's findings as sacred text, which a higher court could never question. Yet some central "facts," and even some legal conclusions, are nothing more than heroic forecasts about technology. "While some consumers may decide to make do with one or more information appliances," opines the judge, "the number of these consumers will, for the foreseeable future, remain small in comparison to the number of consumers deciding that they will still need an Intel-compatible PC system."²⁵On the contrary, technological forecasters from International Data Corporation (IDC), among others, expect that sales of non-PC Internet devices will outnumber sales of PCs within a few years.²⁶

Those devices include wireless PDAs and cellphones from such industry leaders as Palm and Nokia; Linux-based Internet devices from AOL-Gateway; powerful Internet-ready game consoles from Sony, Nintendo, and Sega; AOL's hard-drive-equipped interactive TV; and more. Because the judge totally ignored the *non-Microsoft* browsers in all those millions of Internet devices, no appellate court could possibly affirm his legal conclusion that Microsoft had a "dangerous probability" of monopolizing the browser market.²⁷ And for the same reason, the judge's speculation that "Internet Explorer is not demonstrably the current 'best of breed' Web browser, nor is it likely to be so at any time in the immediate future"^{2 8} must be duly dismissed on appeal.

Within the judge's litany of facts, the few findings that appear to be based on quantitative data are often seriously inaccurate. For example, here is his mistaken recitation on Microsoft's market share, which has been The few findings that appear to be based on quantitative data are often seriously inaccurate. To demonstrate that Microsoft's market share was large, Jackson resorted to the simple expedient of narrowing the defined market.

widely echoed by the media as being all the proof needed that Windows has a monopoly:

Every year for the last decade, Microsoft's share of the market for Intel-compatible PC operating systems has stood above ninety percent. For the last couple of years the figure has been at least ninety-five percent, and analysts project that the share will climb even higher over the next few years.²⁹

Those seemingly precise figures were lifted uncritically from the government's Exhibit One. They are not facts at all but outdated estimates and projections published in early 1997—before the last couple of years"—by IDC. At that time, IDC analysts thought Apple's Mac operating system would slip into oblivion, and they could not imagine that Linux would be popular enough to warrant a separate mention.

In June 2000 IDC estimated that various versions of Windows, including NT for workstations, had accounted for 87.7 percent of "new license" (wholesale) shipments of "client" operating systems in the previous year. Mac accounted for 5 percent, according to IDC, and Linux 4.1 percent. IDC analysts now project that Windows' share will fall to 85 percent by 2004, and possibly much lower if the exciting new Unix-based Mac OS X catches on ("Apple could always opt to bring OS X to Intel platforms," notes IDC).³¹

Rather than Windows' share being 95 percent and rising, as the judge stated, his own source now says Windows' share is below 88 percent and falling. That is still a large number, of course, but we are about to explain why it is much too large. To be sure, the newest IDC estimates, based on shipments rather than the installed base of old and new computers, are an improvement over the 1997 figures. Yet the new estimates still involve serious exaggerations arising from what is included in Windows' share (such as Windows NT for workstations) and what is excluded from competitors' sales (such as

retail sales of Linux and computers sold with no operating system).

At the outset, it helps to keep in mind that there are three distinct versions of Windows, not just one. Windows CE, now called Pocket PC, is mainly used on hand-held computers in competition with the products of companies such as Psion and Palm. IDC estimates that Windows CE has less than 10 percent of that market. Windows NT, now called Windows 2000, is used on servers and on high-powered desktops called workstations. In the server market, Windows NT/2000 competes with versions of Unix, including Linux, and with Novell Netware. IDC estimates that Windows NT has 36 percent of that market. Clearly, Microsoft has a modest share of the lucrative computer markets in which Windows CE and NT struggle to compete. Moreover, the lines between those submarkets are blurry, particularly when it comes to workstations and to laptops, which are marketed in all three versions of Windows (and with competing systems such as Mac. Linux. and Psion).

In order to demonstrate that Microsoft's market share was much larger than those figures suggest, Judge Jackson resorted to the simple expedient of narrowing the defined market. He included only single-user desktop computers, in which Microsoft has an edge, limiting the trial testimony as well as his own findings to Windows 95 and 98. (Nonetheless, he proceeded to apply his proposed remedies to Windows CE and NT as well.) Unlike the trial testimony, however. IDC's definition of Windows' share of the "client" market is not confined to Windows 95 and 98. On the contrary, the apparent Windows share of nearly 88 percent is substantially inflated by including Windows NT for workstations, now called Windows 2000 professional edition. Including NT might have been perfectly reasonable if the judge had defined the "relevant market" to include the operating systems of all workstations, but that is not what he did.

Judge Jackson chose to define the relevant market to include only "Intel-based" com

puters. That means the market was confined to "IBM clones" (i.e., computers originally designed to run on Microsoft operating systems, just as Apple computers were designed to run on Mac OS and Sun computers to run on Solaris). The wonder is, not that most Intel computers use Windows, but that other operating systems, such as Linux, BeOS, and the Intel version of Solaris (and possibly of Mac OS X), have been cleverly adapted to operate on the "Wintel" architecture.

When the government proposed, as part of its Microsoft breakup scheme, to create a separate operating systems company, astute journalists made the undeniable observation that the new company's major competitors in the operating system business would include Sun Microsystems, Novell, Apple, and Palm.³² Yet Sun, Apple, and Palm were totally excluded from Judge Jackson's definition of the "relevant market" because they are not "Intel based." Apple and Palm use Motorola microprocessors, while Sun builds its own. Defining the market to include only Intel-based computers provided the magic by which the government managed to completely ignore Apple, the sixth largest producer of computers in the United States, as though "Apple products" are not really computers.^{3 3} Novell's networking software was arbitrarily excluded too, because the judge counted only "single-user" computers. That single-user limitation also eliminates, by definition, all network or "thin client" computers-from IBM, Sun, Compaq, and othersthat use non-Microsoft operating systems.³⁴ In fact, most of Microsoft's leading competitors were simply defined out of existence by Judge Jackson.

In the workstation market, limiting competitors to those that produce Intel-based systems completely excludes Sun Microsystems—lately the world's largest seller of workstations. Sun workstations, which start at less than \$2,000, can even run Windows software if a card for that purpose is plugged in. The exclusion of Sun, by itself, invalidates the government's use of IDC's measure of market share. Recall that IDC includes Windows NT work-

stations that compete directly with Sun. Because the government chooses to exclude Sun workstations, which are not "Intel based," Windows workstations should surely be excluded too. If we exclude NT workstations, then the IDC estimate for Windows 95 and 98 drops from 88 to 66 percent of the "licensed shipments" of "client" operating systems. Yet the problems do not end there. Licensed shipments do not include retail sales, downloads, and computers shipped with no operating system. And IDC's "single-user" client computers do not include computers linked to a server in a local network.

Counting licensed systems alone, as IDC does, seriously understates the use of Linux. Licensed sales ignore sales in retail stores, where Linux is very strong, not to mention millions of free (not licensed) Linux downloads. When retail sales were included. according to a report in a leading newspaper, Linux accounted for 23.6 percent of all operating systems sold, while Windows supposedly had a 71.4 percent share.^{3 6}Walk through any store selling software, and you will see many boxes of Linux, most of which (notably, Corel Linux) are aimed at desktop users rather than servers. Yes, looking at retail sales alone would clearly underestimate Windows and Mac, because those systems are more often sold wholesale, by bulk licensing of the operating system to computer makers. Yet it is just as misleading to base market share on licensed shipments alone. Doing so ignores the remarkable success of Linux in retail stores.

Even if someone counted both licensed and retail sales, that would still ignore "naked" computers shipped without a new, commercially available operating system. Naked computers account for 15 percent of the market, according to government expert Frederick Warren-Boulton.^{3 7}Whatever sort of operating system is most often installed on naked computers (including free operating systems and older software), it will not be a new version of Windows. Anyone who wants Windows 98 or 2000 knows it is much cheaper and easier to have it preinstalled by the manufacturer than to pay retail for a boxed

Sun, Apple, and Palm were totally excluded from Judge Jackson's definition of the "relevant market" because they are not "Intel based." CD with instructions. If few naked computers use new versions of Windows, that fact alone could shave as much as fifteen percentage points from Windows 98's market share, which has already been shown to be much smaller than the judge believed. At the very least, uncertainty about naked computers further detracts from the spurious precision of Judge Jackson's allegation about some undefined version of Windows having a 95 percent share of some undefined market.

No higher court is likely to accept as fact the government's archaic and selective estimates of Microsoft's share of an artificially defined market of "Intel-compatible" computers that are neither small enough to use Palm's system nor powerful enough to use Sun's. In fact, judges in the nation's higher courts have become increasingly sophisticated about economics in recent years, which means they (like economists) are unlikely to accept any measure of market share as a viable measure of monopoly.

To illustrate just how misleading market share can be, consider the Microsoft Office Suite. It has a very high market share but certainly no monopoly. Many popular computers come preloaded with rival office suites. Word Perfect is installed on CyberMax, Quantex, NuTrend, and ABS. Lotus Smart Suite comes with IBM and Polywell. And Sun's Star Office is preloaded on eMachines. If consumers don't like the office software that comes with their computer, they can easily switch to another as an inexpensive upgrade, or download Star Office for free.

Monopoly means no consumer choice; it does not mean that consumers freely choose one product over others, even when the others are free. Similarly, the fact that the Windows operating system is currently more popular than systems from Apple, Sun, or VA Linux does not mean Windows has a monopoly. It means that Windows is the consumers' choice. Although the Internet may make consumers relatively less concerned about which operating system they use, they will never be wholly indifferent to the features and ease of use that an operating system affords.

While Judge Jackson's reliance on, and treatment of, market share data raises serious concerns, some of his other findings of fact are equally dubious. In particular, there is his emphasis on the pure number of games and other software applications, old and new, that supposedly create an insurmountable "applications barrier" to entry. Rival operating systems are prevented from competing, insists the judge, because they cannot offer the huge array of software programs that is available on a Windows platform. "Although Apple's Mac OS supports more than 12,000 applications," he says, "even an inventory of that magnitude is not sufficient to enable Apple to present a significant percentage of users with a viable substitute for Windows."38 This "relative dearth" of software for Apple was the judge's implausible excuse for excluding Mac from the relevant market (although Linux, with far fewer applications than Mac, was *not* excluded).

The judge asserts that the large stockpile of Windows and DOS applications must make it impossible for non-Microsoft operating systems to gain a "significant" number of customers. Yet Mac, Linux, Palm, and Sun's Solaris are all doing quite well. In reality, few computer users want more software than is contained in the major office suites that are readily available for all operating systems. Economist Richard McKenzie has estimated that a credible challenge to Windows could be mounted with no more than a few hundred key applications.³⁹

Word Perfect, Star Office, and Applix offer free or inexpensive office suites for Linux (which is why Lotus and Microsoft do not), but that does not make Linux any easier to install or use. IBM's OS/2 system ran all Windows software in the early 1990s, but OS/2 was nevertheless an overpriced system that required expensive hardware. Microsoft Office has always been available for Mac, but that did not make Apple's pricey computers any more affordable. Plainly, factors other than the availability of applications software dissuaded consumers from buying those rival systems.

A credible challenge to Windows could be mounted with no more than a few hundred key applications. Furthermore, the Justice Department grounded many aspects of its case on a debatable interpretation of a technological forecast. According to DOJ, applications will be gravitating away from local PC hard drives toward the Internet. Perhaps so, but that does not prevent a wide range of Internet browsers from accessing the Internet and interacting with the service providers that will be providing the new applications. Still, the government assumed that only Netscape would be able to reach and communicate with applications service providers.

That was the logic underlying the government's muddled argument for protecting Netscape's "usage share" from competition. Judge Jackson, agreeing with that argument, evidently ignored two countervailing facts. First, several dozen browsers all read the same languages (mainly html) and can all link to Internet-based applications. Second, a "network-centric" delivery system for software, if it ever catches on, would make it irrelevant how many programs were once available on floppy discs and CD-ROMs. In other words, Microsoft's applications barrier, if it existed at all, would afford no competitive protection in an Internet-dominated world.

Legal Issues

Judge Jackson's findings of fact were the foundation on which he constructed his conclusions of law. When that foundation is unsound, the resultant structure inevitably collapses. Still worse, in this case much of Jackson's legal structure collapses even if we accept his factual foundation. To illustrate, we next examine Jackson's critique of Microsoft's tying arrangements, first-screen restrictions, so-called exclusionary contracts, and the infamous June 1995 meeting between Microsoft and Netscape.

Tying Arrangements

In December 1997 Judge Jackson preliminarily enjoined Microsoft from tying the Internet Explorer browser to the Windows

operating system in violation of the 1995 consent decree between the company and DOJ. Microsoft then pressed its case in the U.S. Court of Appeals for the District of Columbia Circuit. Six months later, the appellate court, not wanting to be in the "unwelcome position of designing computers," ¹ reversed the trial court and vacated the injunction.

DOJ had advised the D.C. Circuit to look to antitrust law for guidance in interpreting the consent decree. The circuit court took that advice but, to DOJ's dismay, expressly rejected the antitrust standard that the government preferred. Specifically, the appellate court declined to apply a 1984 Supreme Court case, Jefferson Parish Hospital District No. 2 v. Hyde, 41 which held that tying two products is impermissible, even though the products may be functionally integrated, if there is sufficient consumer demand to constitute a separate viable market for the second product. On the basis of that case, DOJ maintained that Windows and Internet Explorer were illegally tied as long as Internet Explorer could profitably have been sold by Microsoft as a separate product.

Instead of following Jefferson Parish, the D.C. Circuit treated the Microsoft package not as a contractual tie but as a physical or "technological" tie-principally because Internet Explorer and Windows were combined in a manner that precluded removal of the browser. The appropriate benchmark, said the court, must be one based on "plausible benefit" to the consumer. Under that standard, a tying arrangement would survive antitrust scrutiny if it resulted in a "product that combines functionalities . . . in a way that offers advantages unavailable if . . . bought separately and combined by the purchaser."42 In essence, the court concluded that Microsoft's packaged product, including both Windows and Internet Explorer, was better for customers than buying the two components separately and trying to put them together. Accordingly, the D.C. Circuit remanded the case to Judge Jackson for reconsideration of his injunction but warned DOJ in no uncertain terms to abandon the

Microsoft's applications barrier, if it existed at all, would afford no competitive protection in an Internet-dominated world.

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suit. "The Department may well regard further pursuit of the case as unpromising," instructed the court. 43

We now know, of course, that neither DOJ nor Judge Jackson took the appellate court's admonition very seriously. DOJ went forward with its antitrust suit, alleging that Microsoft's tying arrangement violates the Sherman Act. And Jackson in his final judgment effectively lectured the D.C. Circuit on the law—ignoring the higher court's plausible benefit rule in favor of his own formulation based on the Jefferson Parish standard that the crcuit had considered and rejected. Even Harvard professor Lawrence Lessig, hand-picked by Jackson to file a friendof-the-court brief, acknowledged that the government had not made out a claim of technological tying. Although Lessig thought the crcuit should have applied a different rule, he said bluntly: "Under the Court of Appeals test, Microsoft must prevail."44

Indeed, Microsoft should prevail no matter which standard is applied. In a nutshell, the company could not have been acting anti-competitively if its actions were in response to similar actions by its rivals. Jackson found, for example, that "consumers in 1995 were already demanding software that enabled them to use the Web with ease." "IBM had announced in Moreover. September 1994 its plan to include browsing capability in OS/2 Warp [IBM's operating system, which was then the principal challenger to Windows] at no extra charge." Jackson also found that "Microsoft had reason to believe that other operating-system vendors would do the same."45 Combining Internet functionality with an operating system was just one more instance of product improvement through integration. That procompetitive practice—the norm in high-tech industries-could not, therefore, violate the antitrust laws.

For once, Jackson got it right when he said that "the inclusion of Internet Explorer with Windows at no separate charge... contributed to improving the quality of Web browsing software, lowering its cost, and increasing its availability, thereby benefiting consumers." ⁴⁶

First-Screen Restrictions

In its complaint, the government rebuked Microsoft for insisting that OEMs not delete certain icons from the Windows opening screen. In that manner, argued DOJ, Microsoft used its control over the desktop to dictate Internet access and, to some extent, content. On initial boot-up, Microsoft uses about 15 percent of its first screen to display selected icons. But OEMs can easily remove most icons (although not Internet Explorer); they can add icons to 85 percent of the screen that Microsoft doesn't use, install rival software, even make Netscape the default browser.

Microsoft never restricted any OEM from installing a rival browser and displaying its icon on the startup screen. Consumers could go a step further; they could delete the Internet Explorer icon or even substitute a shell for the first screen—all with a few clicks of the mouse—in which case the icon would disappear forever. Thus, Microsoft's restrictions are no more burdensome than, say, those imposed by an automobile dealer who presets the stations on your car radio or refuses to remove the hood ornament.

Judge Jackson seemed to agree. He found that "Microsoft's license agreements have never prohibited OEMs from pre-installing programs, including [Netscape's] Navigator, on their PCs and placing icons and entries for those programs on the Windows desktop."47 Despite that apparent endorsement of Microsoft's first-screen policy, the judge held that the company's license agreements with OEMs violated the Sherman Act insofar as they required Microsoft's permission before an OEM could delete specified icons from the desktop. Not only did Jackson's holding elevate a trifling contractual restriction, which bound OEMs but not consumers, to the level of an antitrust violation, but it also precluded Microsoft from exercising its rights under federal copyright law. Companies that hold valid copyrights are entitled to demand of distributors that copyrighted products be delivered to customers in the form prescribed by the creator.⁴⁸

"Exclusionary" Contracts

DOJ also contended that Microsoft's contracts with Internet service and content providers (ISPs and ICPs) were exclusionary—that is, they were designed to prevent ISPs and ICPs who dealt with Microsoft from also dealing with Netscape. Naturally, companies negotiate exclusive contracts all the time, but those contracts can run afoul of the antitrust laws if one of the companies is a monopolist. The question, then, is whether Microsoft tried to leverage its alleged operating system monopoly to obstruct ISPs and ICPs from doing business with Netscape, thereby foreclosing Netscape from using that channel to market its browser.

In assessing DOJ's exclusive dealing claim, Judge Jackson reached two contradictory conclusions. First, he held that the various ISP and ICP agreements "did not foreclose enough of the relevant market to constitute a § 1 [Sherman Act. section 1] violation." But second, he declared that Microsoft's absolution under section 1 "in no way detracts from the Court's assignment of liability for the same arrangements under § 2."49 Those two holdings simply cannot coexist. If Microsoft is exonerated of a section 1 charge, covering conspiracies in restraint of trade, then a section 2 charge, covering attempts to monopolize, must also fail. Foreclosing Netscape's distribution channels was a central element of both violations. If Microsoft had indeed attempted to exclude Netscape from the ISP and ICP channels, and if Microsoft enjoyed the overwhelming monopoly power that Jackson asserts, then surely Microsoft would have succeeded. Yet Jackson himself concedes that it did not.

Meeting with Netscape

In June 1995, according to the government, Microsoft met with Netscape and proposed that the two companies split the browser market, in violation of the antitrust laws. Specifically, Netscape was to stop developing platform-level browsing software for Windows. Microsoft contends that the meeting was initiated by Netscape to explore tech-

nological cooperation and cites an earlier e-mail sent by Netscape's chairman, Jim Clark. "We want to make this company a success," wrote Clark, "but not at Microsoft's expense. We'd like to work with you.... Depending on the interest level, you might take an equity position in Netscape." ⁵⁰

That e-mail didn't convince Jackson. He accepted DOJ's version of the meeting and noted that "had Netscape accepted Microsoft's offer, nearly all of its share ['well above seventy percent' of the browser market] would have devolved upon Microsoft." But why on earth would Netscape do something so transparently suicidal? Why would Microsoft bother to propose such a foolish deal? What was Microsoft's "offer" in return? How could the new Windows 95 have succeeded without the critical support of Netscape, the hottest browser around? The whole story makes no sense.

Was the meeting a DOJ setup? That's hard to prove; but within 48 hours of the meeting, the government received detailed notes about it, recorded by Netscape officer Marc Andreessen, who had been present, and supplied by Netscape's outside attorney, Gary Reback.⁵² Yet, if DOJ possessed evidence of an illegal market-splitting proposal by Microsoft, why did it take three years for the government to press charges? Whatever the answer to that question, DOJ has fallen far short of its burden under the antitrust laws. which is to show that there was a clear and unambiguous invitation to engage in collusive, illegal acts. There is nothing in antitrust law that would forbid a meeting to explore technological cooperation that, in any event, never materialized. The charge of attempted market splitting is just one more unsubstantiated accusation DOJ has raised to embellish an otherwise vacuous lawsuit.

Draconian Remedies

Judge Jackson's final remedies are undoubtedly his most pernicious blunder. In some respects wholly disassociated from any DOJ has fallen far short of its burden under the antitrust laws, which is to show that there was a clear and unambiguous invitation to engage in collusive, illegal acts.

Jackson's remedies—if one didn't know better—would seem crafted to inflict as much damage as possible, not just on Microsoft, but on the broader high-tech marketplace.

of Microsoft's alleged transgressions, in other respects lopsided when weighed against his findings and conclusions, Jackson's remedies—if one didn't know better—would seem crafted to inflict as much damage as possible, not just on Microsoft, but on the broader high-tech marketplace.

Seemingly separate charges—maintaining a monopoly in operating systems, attempting (unsuccessfully) to monopolize browsers, illegally "tying" Internet Explorer to Windows, and behaving in a "predatory" manner-all come down to essentially the same thing. Stripped of irrelevant gobbledygook about "bullying," which is neither definable nor illegal, the essence of Microsoft's alleged infractions was, first, making it possible to use the Internet with browsing software included in Windows at no extra charge and, second, offering software developers a faster, Windows-specific version of the Java programming language licensed from Sun.

The thrust of the judge's conclusions of law, in his own words, is that Microsoft's misconduct purportedly foiled "Netscape's Navigator Web browser and Sun's implementation of the Java technology." ^{5 3} Nearly all of the many companies recruited to complain in court about their dealings with Microsoft were participants in a circus sideshow having nothing to do with those accusations.

The government's role in protecting Netscape and Java—in effect, taking sides in the now-obsolescent, prewireless "browser wars"—was central to the case from the beginning. That was always a curious obsession because browsers have mostly been free, ever since Mosaic in 1993, and have long been bundled with most operating systems (OS2, Linux, BeOS, EPOC), most Internet services (AOL), and some office suites (Star Office, Word Perfect 7 and 8). When it came to remedies, however, the government quickly lost its previous passion for helping out Netscape and Java, both of which are doing fine despite being "pummeled" by Microsoft. Instead, DOJ hired new experts to spin new theories about, say, the hypothetical wonders of providing Microsoft Office for Linux, a system the judge dismissed as a trivial niche product. Citing new theories and post-trial evidence, the government appeared to be groping for any sort of rationale to justify its elaborate plans for restructuring and regulating the company.

Anyone who believes that Microsoft's vigorous competition with Netscape and Sun was illegal would surely expect the judge's remedies to focus on those issues, such as "untying" Internet Explorer (thereby imposing a hugely irritating inconvenience on consumers) and prohibiting Microsoft from offering its own version of Java. But the actual remedies have little to do with those alleged offenses, or even with the judge's poorly supported claim that Windows 98 has a monopoly (which is not itself illegal).

Surely, if the problem were a Windows 98 monopoly, the spin-off of a separate Windows company would do nothing to change that. The newly created operating system (OS) company would still have the same large market share for Windows 98 and small shares for Windows NT and CE. And the applications (APPS) company would still have the most popular office suite, while struggling valiantly against Quicken and Turbo Tax in financial software. In fact, any company that sold nothing but Windows would be in a stronger position to raise its price: The company would no longer be concerned that a higher price for the operating system would shrink the market for applications.

The only rationale for separating OS from APPS was a claim by the software lobby that intimate knowledge of Windows is what gives Microsoft an edge in applications. Yet no shred of evidence was presented at the trial to substantiate that claim. In fact, the government's most theatric "remedy"—separating OS from APPS—is entirely unrelated to any complaint aired at the trial. There is simply no link between the breakup scheme and any specific illegal behavior ostensibly in need of a remedy.

Naturally, one effective way to reduce the

market share of a product as popular as Windows is to make that product less attractive to consumers. That is where the so-called conduct remedies come in. They would indeed prevent Windows from becoming more useful to consumers. Because those restrictions were designed to last for 10 years if the company is not split in two, and because court-ordered divestiture is highly unlikely, the heart of the U.S. software industry would be transformed into a regulated utility for a fatally long time. Consider, for example, the way the following regulation, from the judge's final judgment, redefines and redistributes the property rights to Windows:

Microsoft shall not restrict . . . an OEM from modifying . . . [any] aspect of a Windows Operating System Product to . . . display icons or otherwise feature other products or services . . . display any user interfaces, provided that any icon is also displayed that allows the user access to the Windows user interface, or . . . launch automatically any non-Microsoft Middleware, Operating System or applications. ⁵⁴

That "remedy" effectively gives computer manufacturers carte blanche to expropriate the Windows trademark. OEMs would be free to hide the Windows screen, have a different operating system launch automatically (whether consumers want one or not), and transform the desktop into an advertising billboard. That remedy is also a recipe for Balkanization: Consumers buying a computer with "Windows" would have no idea what that meant until they turned on the machine. Standardization, arguably Microsoft's most important contribution to software markets, would be no more.

Further compromising Microsoft's intellectual property rights, Judge Jackson would mandate that the company invite OEMs, other hardware vendors, and competing software vendors to scrutinize the inner workings of Windows whenever they see fit (i.e., "to study, interrogate and interact with relevant

and necessary portions of the source code, and any related documentation of Microsoft Platform Software"). $^{5.5}$

Finally, lurking among Judge Jackson's more harmful remedies is this one, destructively if unintentionally designed to completely paralyze innovation:

Microsoft shall not, in any Operating System Product . . . bind any Middleware Product to a Windows Operating System unless . . . all means of End-User Access to the Middleware Product can readily be removed by OEMs . . . [and] by end users. When an OEM removes End-User Access to a Middleware Product . . . the royalty paid by the OEM for that copy of Windows is reduced. 56

Requiring that the price of Windows be reduced if the browser or other "middleware" is removed is just a devious way of prohibiting Microsoft from including Internet Explorer for free, and from adding other free features such as voice recognition, Web security, or virus protection. Since AOL-Netscape and others could continue offering integrated products—with some add-ons priced at zero—Microsoft's OS company would be put at a hopeless competitive disadvantage.

Because "middleware" can include just about everything,⁵⁷ Microsoft could not integrate any features in Windows that could not, as a technical matter, be easily removed. And because Internet Explorer would be owned by a separate APPS company, which would be prohibited for years from dealing with the OS company, the browser currently built into Windows could only be improved by leasing a newer browser from, say, AOL-Netscape. Like most of the proposed remedies, that one would be good news for competitors but bad for competition.

Lessons to Be Learned

Judge Jackson's final judgment indicates, if there was ever any doubt, that he has fallen

Consumers buying a computer with "Windows" would have no idea what that meant until they turned on the machine. Standardization, arguably Microsoft's most important contribution to software markets. would be no more.

Rent-seeking businessmen had better rein in their appetite for government largesse before they begin to reap the unwelcome fruits of their unwholesome labors.

hook, line, and sinker for the government's flawed arguments. As a result, real people will be, and have been, injured by this foolishness. Microsoft's shareholders suffered an erosion of market value measured in hundreds of billions of dollars, which adversely affected other tech stocks and the economy in general.⁵⁸ If Jackson's remedies are effectuated, company employees, like expendable chess pawns, will be deployed to advance DOJ's dismemberment scheme. Bureaucrats will supervise the allocation of those employees sales, marketing, programming, product development, research, procurement, legal, and accounting-as well as the allocation of real estate and intellectual property.

Billionaire businessmen, like Larry Ellison of Oracle and Scott McNealy of Sun MicroSystems, have skillfully yet wrongly used government in an attempt to bring down a competitor.⁵⁹ Consumers pick up the tab when those companies devote more of their resources to politicking and less to the kinds of integrated products that, until now, have characterized the software industry. That misuse of the political process, which economists call rent seeking, is both facilitated and made necessary by an amorphous set of antitrust statutes that delegate too much discretion to DOJ officials and federal judges. Potential defendants, like Microsoft, simply cannot know the rules that presumably govern their conduct.

Meanwhile, the Clinton administration doesn't comprehend this basic tenet of economics: In the real world, producers seek to carve out market niches in order to have some influence over the terms on which they sell their products. The profits that arise when they succeed propel economic growth. Rather than measure high-tech markets against the textbook model of perfect competition, a model better suited to an agrarian economy, we need to concern ourselves with the sterile marketplace that will evolve if vigorous antitrust enforcement extinguishes the incentives for new and improved products. Without those incentives, Microsoft would not spend 17 percent of its revenue on research and development. Its rivals—Oracle,

Sun, IBM—spend between 6 and 10 percent.⁶⁰

Sad to say, Microsoft has learned to play the political game in a hurry. For many years conspicuous by its absence from Washington, D.C., Microsoft has now expanded its D.C. office from 4 people in 1994 to 14 this past April. Between January 1999 and February 2000, Microsoft's political action committee ladled out \$278,000 to 149 congressional incumbents in both parties. The company expects to spend more than \$1 million this election cycle. ⁶ ¹

It's even worse among Microsoft's rivals. A single Silicon Valley fundraiser in April brought in \$1.3 million to Democratic Party coffers. ⁶ ²TechNet, the brainchild of politically connected financier John Doerr, has made Silicon Valley an official new participant in the Washington problem. Instead of making principled arguments regarding the proper role of government, TechNet, with great enthusiasm, has advocated industrial-age government intervention against too successful high-tech competitors. Ultimately, that political agenda will destroy what it sets out to protect. Because politicians are basically order takers, we get the kind of government we ask for, including oppressive regulation. To their lasting regret, some people in Silicon Valley may soon get the kind of government they are requesting. The lesson is straightforward: rent-seeking businessmen had better rein in their appetite for government largesse before they begin to reap the unwelcome fruits of their unwholesome labors.

Notes

For an abbreviated version of this paper, see "Antitrust for Dummies," *American Spectator*, November 2000, pp. 52–56.

- 1. For more background, see Robert A. Levy, "Microsoft and the Browser Wars: Fit to Be Tied," Cato Institute Policy Analysis no. 296, February 19, 1998; and Robert A. Levy, "Microsoft Redux: Anatomy of a Baseless Lawsuit," Cato Institute Policy Analysis no. 352, September 30, 1999.
- 2. United States v. Microsoft Corp., 147 F.3d 935 (1998).

- 3. *United States v. Microsoft Corp.*, Civil Action 98-1232 (D.D.C. 1998).
- 4. Thomas J. DiLorenzo, "MS-Nationalization," Ludwig von Mises Institute, June 8, 2000, http://www.mises.org/fullstory.asp?control=442>.
- 5. See *Sun Microsystems, Inc. v. Microsoft Corp.*, Civil Action C-97-20884-RMW (N.D. Cal. 1997).
- 6. *United States v. Microsoft Corp.*, Civil Action 98-1232, Transcript (September 17, 1998), p. 7.
- 7. *United States v. Microsoft Corp.*, Civil Action 98-1232, Transcript (April 4, 2000), pp. 8–9.
- 8. Ibid. at 11.
- 9. *United States v. Microsoft Corp.*, Civil Action 98-1232, Memorandum and Order (June 7, 2000), p. 4.
- 10. Quoted in James V. Grimaldi, "Reluctant Ruling for Judge," *Washington Post*, June 8, 2000, p. A1.
- 11. *United States v. Microsoft Corp.,* Civil Action 98-1232, Memorandum and Order (June 7, 2000), p. 5 (footnote omitted).
- 12. See Fred S. McChesney and William F. Shughart II, eds., *The Causes and Consequences of Antitrust: The Public Choice Perspective* (Chicago: University of Chicago Press, 1995).
- 13. Quoted in John R. Wilke, "For Antitrust Judge, Trust, or Lack of It, Really Was the Issue," *Wall Street Journal*, June 8, 2000, p. A1.
- 14. Quoted in Joel Brinkley and Steve Lohr, "Retracing the Missteps in the Microsoft Defense," *New York Times*, June 9, 2000, p. C8.
- 15. See John R. Wilke and Rebecca Buckman, "U.S. Judge Calls Abrupt End to Microsoft Trial," *Wall Street Journal*, May 25, 2000, p. A3.
- 16. *United States v. Microsoft Corp.*, Civil Action 98-1232, Memorandum and Order (June 7, 2000), p. 3.
- 17. See United States v. E.I. du Pont de Nemours & Co., 366 U.S. 316, 326 (1961).
- 18. Quoted in James V. Grimaldi, "Microsoft Judge Says Ruling at Risk; Every Trial Decision Called 'Vulnerable,'" *Washington Post*, September 29, 2000, p. E1.
- 19. Ibid.
- 20. See Leonard Orland, "Jackson's Unethical Press Talks," *National Law Journal*, August 14,

- 2000, p. A17.
- 21. As adopted by the U.S. Judicial Conference, reprinted in 175 F.R.D. 363 (1998).
- 22. James V. Grimaldi, "Hearsay," *Washington Post*, June 12, 2000, p. F31. Despite finding that Judge Jackson had been lax in his observance of judicial ethics, the appellate panel concluded that his infraction was not sufficient to justify his removal from the case.
- 23. United States v. Microsoft Corp., Civil Action No. 98-1232, Findings of Fact (November 1999), ¶ 412
- 24. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Conclusions of Law (April 2000), p. 20.
- 25. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Findings of Fact (November 1999), ¶ 23.
- 26. IDC, for example, predicts that by 2002 there will be more than 55 million hand-held and note-book-style information appliance devices and that by 2005 shipments of those appliances will exceed shipments of PCs. Cited in Red Hat, Inc., "Red Hat and North Carolina State University Partner to Establish First Open Source-Based University," Press release, Business Wire, October 18, 2000.
- 27. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Conclusions of Law (April 2000), pp. 21–23.
- 28. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Findings of Fact (November 1999), ¶ 12.
- 29. Ibid. ¶ 35.
- 30. Richard B. McKenzie, *Trust on Trial: How the Microsoft Case Is Reframing the Rules of Competition* (Cambridge, Mass.: Perseus, 2000), pp. 64–66 and Table 2.1, p. 33.
- 31. International Data Corporation, "Computer Operating Environments Coevolve," IT Forecaster, August 8, 2000, http://www.idc.com/itforecaster/itf20000808.stm>.
- 32. Lee Gomes and Rebecca Buckman, "Unintended Consequences?" *Wall Street Journal*, June 2, 2000, p. B1.
- 33. See *United States v. Microsoft Corp.,* Civil Action 98-1232, Plaintiffs' Joint Reply to Microsoft's Proposed Conclusions of Law (January 2000), p. 3 ("Apple products . . . [were] carefully examined and found not to be in the same market").
- 34. See Bill Howard, "Thin Is Back," *PC Magazine*, April 4, 2000, p. 168. IBM's network computers use

- BSD Unix, Sun's use Solaris, and Compaq offers Linux or Windows CE. Sun Ray and Neoware have their own proprietary operating systems.
- 35. Gartner Group, "Gartner's Dataquest Says Worldwide Server and Workstation Markets Experience Double-Digit Growth in Second Quarter 2000," Press release, http://gartner11. gartnerweb.com/public/static/aboutgg/press rel/pr20000802a.html>. In the second quarter of 1999, Sun was number one with 22.9 percent of global workstation shipments, but that slipped to 19.3 percent a year later as Dell captured the low end of the market.
- 36. See chart accompanying Ariana Eunjung Cha, "Ruling Threatens New Product," *Washington Post*, June 8, 2000, p. A21. The data in the chart seem to be drawn from PC Data (one of several sources listed), which collects sales figures from 17 major software retailers.
- 37. United States v. Microsoft Corp., Civil Action No. 98-1232, Testimony of Frederick R. Warren-Boulton (November 18, 1998), p. 20. Warren-Boulton added naked computers to Microsoft's share, but that is inappropriate. Naked computers must use some sort of operating system, but it is unlikely to be a new version of Windows. If some naked computers use old versions of Windows, that would show that Microsoft has to compete against itself when trying to sell new or upgraded software.
- 38. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Findings of Fact (November 1999), ¶ 47.
- 39. Richard McKenzie, "Microsoft's 'Applications Barrier to Entry': The Missing 70,000 Programs," Cato Institute Policy Analysis no. 380, August 31, 2000.
- 40. *United States v. Microsoft Corp.*, 147 F.3d 935, 950 (1998) (citation omitted).
- 41. Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2 (1984).
- 42. United States v. Microsoft Corp., 147 F.3d 935, 948 (1998).
- 43. Ibid. at 953.
- 44. *United States v. Microsoft Corp.*, Civil Action 98-1232, Brief of Lawrence Lessig (1999), p. 17.

- 45. *United States v. Microsoft Corp.*, Civil Action 98-1232, Findings of Fact (November 1999), ¶ 140.
- 46. Ibid. ¶ 408.
- 47. Ibid. ¶ 217.
- 48. See WGN Continental Broadcasting Co. v. United Video, Inc., 693 F.2d 622, 625 (7th Cir. 1982).
- 49. *United States v. Microsoft Corp.*, Civil Action 98-1232, Conclusions of Law (April 2000), p. 39.
- 50. John R. Wilke, "Netscape Secretly Offered Microsoft a Stake," *Wall Street Journal*, October 22, 1998, p. B7.
- 51. *United States v. Microsoft Corp.*, Civil Action 98-1232, Conclusions of Law (April 2000), p. 23.
- 52. John R. Wilke, "In New Twist, Microsoft Says It Was 'Set Up," *Wall Street Journal*, October 27, 1998, p. A3.
- 53. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Conclusions of Law (April 2000), p. 9.
- 54. *United States v. Microsoft Corp.*, Civil Action No. 98-1232, Final Judgment (June 7, 2000), sec. 3.a.iii.
- 55. Ibid., sec. 3.b.
- 56. Ibid., sec. 3.g.
- 57. See ibid., sec. 7.g, where Judge Jackson's bizarre definition of middleware somehow encompasses even Microsoft Office.
- 58. See Gary Robbins and Aldonna Robbins, "The Real Economic Costs of the Microsoft Decision," Institute for Policy Innovation, October 3, 2000, http://www.ipi.org.
- 59. See Gary Rivlin, *The Plot to Get Bill Gates* (New York: Times Books, 1999).
- 60. *United States v. Microsoft Corp.*, Civil Action 98-1232, Testimony of Paul Maritz (January 22, 1999), ¶ 155.
- 61. Karen Foerstel, "GOP Deplores Microsoft Ruling, Urges Gates to Support Party," *CQ Weekly*, April 8, 2000, pp. 833–34.
- 62. Ibid.

