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Comment on the Revised Proposed Final Judgment

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BEFORE THE UNITED STATES DEPARTMENT OF JUSTICE

UNITED STATES OF AMERICA, Plaintiff, v. MICROSOFT CORPORATION, Defendant.	Civil Action No. 98-1232 (CKK)
STATE OF NEW YORK *ex rel.* Attorney General Eliot Spitzer, *et al.,* Plaintiffs, v. MICROSOFT CORPORATION Defendant.	Civil Action No. 98-1233 (CKK)

Comment of Robert E. Litan, Roger G. Noll, and William D. Nordhaus on the Revised Proposed Final Judgment

I.   Introduction

We are filing these comments on the Revised Proposed Final Judgment (*RPFJ*)[1] and

Competitive Impact Statement (*CIS*)[2] to provide the Justice Department and the court with what

we believe is a useful economic analysis to assist the court in fashioning the appropriate remedy

in this matter. In brief, we believe that the *RPFJ* is not in the "public interest," as that test is

applied under the Tunney Act. Accordingly, the *RPFJ* should either be rejected outright now, or

the court should refrain from ruling on the *RPFJ* until it has completed its further factual inquiry

regarding the remedy proposed by the nine states not party to the *RPFJ*. If, however, the court

accepts the *RPFJ* in the meantime, we strongly urge it to treat the *RPFJ* as an interim remedy

and expressly leave open the possibility of supplementing the *RPFJ* with the additional remedies

discussed in detail in this comment. We also recommend that in conducting its further factual

inquiry in the remedy phase of this litigation that the court actively consider a structural remedy

that would create some competition in the PC operating system market that, but for Microsoft's

unlawful acts, reasonably could have been expected to have emerged by this time.

A. Interest of the Commenters

Each of the signatories of this Comment is a professional economist with expertise that is

relevant to the matter now before the court, namely the design of an appropriate remedy to

address Microsoft's antitrust violations. We are filing this submission in our own personal

capacities and not on behalf of the institutions with which we are currently affiliated or

employed (and identified shortly). We are submitting our views to assist the court in deciding

whether to accept the *RPFJ* and ultimately in fashioning an appropriate remedy. None of us has

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[1] <u>United States v. Microsoft Corp</u>., Stipulation and Revised Proposed Final Judgement (November 6, 2001).
[2] <u>United States v. Microsoft Corp</u>., Competitive Impact Statement (November 15, 2001).

been employed by or retained as consultant on matters before this court for Microsoft, the federal or state governments, or any other interested party in this litigation. Furthermore, none of us is receiving any compensation from anyone for submitting these comments.

We have followed this case extensively for the past several years, in several capacities. Collectively, we joined in filing an Amicus Brief on remedies before Judge Jackson in May, 2000, before he entered his final judgment on June 7, 2000.[3] In that brief, we urged the court to conduct an evidentiary inquiry before adopting a remedy (a procedure that this court will now shortly follow). We also described the merits and drawbacks of three basic remedy options: a structural remedy, a conduct remedy, and relief requiring changes in competitors' access to Microsoft's intellectual property. Our brief established, in effect, a rebuttable presumption favoring structural relief. We did not support the kind of structural relief that the Department of Justice urged upon Judge Jackson and which he ultimately accepted: a two-way split of the company between an enterprise engaged in Operating Systems (the OS company) and the other engaged in applications software (the Applications Company). Instead, we made the case for adopting the only remedy we believed then (and still believe) would truly restore competition to the OS market: a three-way split of Microsoft's OS monopoly (that would guarantee the end of the monopoly) and a separate Applications company.

We believe that we have relevant collective experience and insight that can benefit the court. We have worked on and studied extensively a wide range of government interventions, including deregulation (in airlines, surface transportation, the financial sector, electricity and telecommunications, water supply, hydrocarbon fuels, broadcasting); structural relief in antitrust cases (including *U.S. v. AT&T*); privatization (electric power, telecommunications and water);

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[3] Brief of Amici Robert E. Litan, Roger Noll, William D. Norhdaus, and Frederic M. Scherer (filed April 27, 2000).

demonopolization and marketization in formerly state-run economies (including the former

Soviet Union, Romania. and East Germany), and foreign trade cases (including tariff and quota

relief and structural adjustment).

We also each have individual experience that is relevant to both the broad and narrow

issues raised by this case. Robert E. Litan, currently the Vice President and Director

of the Economic Studies Program at the Brookings Institution, was formerly Deputy Assistant

Attorney General of the Justice Department's Antitrust Division from September 1993 until

March 1995. During his tenure, he helped supervise the first civil antitrust investigation against

Microsoft and participated actively in negotiating the consent decree limiting the company's

licensing practices, which this court approved (after remand from the Court of Appeals) in 1995.

He has closely followed the trial and subsequent judicial decisions in this matter and, in his

recent research, has concentrated on, among other things, economic and policy issues relating to

the rapid development and use of the Internet. Dr. Litan is both an economist and an attorney.

During the course of his career as an economist, he has written or edited 25 books and over 150

articles in journals relating to a broad range of economic, regulatory and legal issues.

Roger G. Noll is the Morris M. Doyle Centennial Professor of Public Policy in the

Department of Economics at Stanford University. Professor Noll is the author or editor of

thirteen books and over 300 articles, focusing on public policies toward business. Among his

special areas of expertise are the economics of telecommunications, broadcasting and the

Internet. He has examined privatization and regulation of telecommunications, water and

electric power firms in many countries around world. He also has served on several boards and

committees of the U.S. government, and has been a consultant to the Antitrust Division of the

Justice Department, the Federal Trade Commission, and the Federal Communications Commission.

William D. Nordhaus is the Sterling Professor of Economics at Yale University, where he has served on the faculty since 1967. From 1977 to 1979, he was a Member of the U.S. President's Council of Economic Advisers. While at the Council of Economic Advisers, he established and chaired the Regulatory Analysis Review Group, which was charged with analyzing the impacts of major regulations. From 1986 to 1988, he served as the Provost of Yale University. He is the author of many books, among them Invention, Growth and Welfare; Reforming Federal Regulation (jointly with Robert Litan); and the widely used undergraduate textbook, Economics, now in its sixteenth edition (jointly with Paul Samuelson). His research has dealt with issues of innovation, technological change, deregulation, and demonopolization for Russia and other economies in transition. Dr. Nordhaus was an expert witness for AT&T during the government's antitrust investigation of that company in the late 1970s and early 1980s, specifically on issues relating to the impact of the breakup of the company on technological change and innovation. He serves on a number of government panels, including membership on the Congressional Budget Office Panel of Economic Experts, and he is chairman of the Advisory Committee of the Bureau of Economic Analysis.

B. Overview of Comments

1. The Right Remedial Standard: Restoring the Level of Competition that Would Have Arisen But For Microsoft's Exclusionary Behavior.

This antitrust case is an unusual one for the court's consideration under the Tunney Act because of the stage at which this court is reviewing the *RPFJ*. The typical Tunney Act hearing comes before trial, in which the parties have entered into a consent decree. Instead, this hearing comes after extensive evidentiary hearings and lower court findings of extensive unlawful acts of

monopolization that have been affirmed (unanimously) by an appellate court.[4] Accordingly, the

"public interest" standard under the Act is higher than it would be for the typical pre-trial

settlement. The public interest standard will not be satisfied by an order simply stopping

Microsoft from engaging in practices the courts have found to be illegal.

Instead, the public interest test that is appropriate for a case at this stage of litigation

involves the same remedial standards that courts apply to all parties who are found to have

engaged in unlawful monopolization. That is, as the Court of Appeals noted in quoting Ford

Motor Co. v. United States, 405 U.S. 562, 577 (1972) and United States v. United Shoe Mach.

Corp., 391 U.S. 244, 250 (1968), the remedy must not only "unfetter a market from

anticompetitive conduct" but also must "terminate the illegal monopoly, deny to the defendant

the fruits of its statutory violation, and ensure that there remain no practices likely to result in

monopolization in the future."[5]

As we outlined in our earlier Amicus Brief, we believe there is only one remedy that

presumptively would terminate the monopoly and prevent its recurrence: a structural remedy that

first divides Microsoft into an Applications entity and an Operating System entity, followed by a

division of the Operating System entity into three separate companies. The DC Circuit rejected a

somewhat different structural remedy in the absence of a factual inquiry to establish that such a

solution was necessary.[6] We therefore urge the court to evaluate the *RPFJ* against the backdrop

of the factual inquiry that will be conducted in the parallel remedy hearing on the proposal of the

nine states (Litigating States or LS) that are not party to the *RPFJ*.

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[4] United States v. Microsoft Corp., 84 F. Supp. 2d 9 (D.D.C. 1999) (*"Findings of Fact"*); United States v. Microsoft Corp., 87 F. Supp. 2d 30 (D.D.C. 2000) (*"Conclusions of Law"*); United States v. Microsoft Corp., 253 F 3d 34 (D.C. Cir. 2001).
[5] 253 F.3d at 103. The DC Circuit also cited in this regard United States v. Grinnell Corp., 384 U.S. 563, 577 (1966).
[6] 253 F.3d at 80.

In the absence of further fact-finding, we think that it is highly unlikely (and certainly premature to assume) that the *RPFJ* satisfies the public interest test. The reasons for this harsh assessment are that the *RPFJ* stops well short of changing the structure of the company and introducing any competition into an illegally maintained monopoly market; it provides only the barest minimum of conduct restrictions; and it offers a defective enforcement mechanism. As a result, it will not undo the harms arising from Microsoft's unlawful acts.

The Justice Department articulates a standard that a remedy merely must restore competition to the condition existing in 1995, prior to the beginning of Microsoft's unlawful conduct.[7] This standard does not meet the United Shoe test and is not in the public interest. This is because the "middleware" threat to Microsoft's operating system monopoly, provided by the Netscape browser and by the possibility of a JAVA-based universal translator (as described below), are no longer present and the Java threat is now much diminished. The Justice Department's proposed standard simply ignores the fact that Microsoft's unlawful acts succeeded in vastly weakening the state of competition that existed in 1995.

Not only would the *RPFJ* fail to meet the United Shoe requirement that the monopoly be terminated, but it would also enable Microsoft to continue to enjoy the fruits of its unlawful acts. Such an outcome is not in the public interest because it would not restore the level of competition that has been lost as a result of Microsoft's antitrust violations.

The appropriate standard instead is whether the proposed relief repairs the anti-competitive harm caused by Microsoft's illegal actions. A remedy that satisfies this standard must put an immediate end to the benefits now accruing to Microsoft as a result of its unlawful activity, which means the remedy must restore competition to the condition that would have been

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[7] The *CIS* describes the goal of its efforts as enabling the restoration of "the competitive threat that middleware products posed prior to Microsoft's unlawful undertakings." (*CIS* at 3.)

present in the market by now in the absence of Microsoft's unlawful conduct. Therefore, an appropriate remedy is one that would produce substantial competition in the supply of operating systems.

We are also concerned that the DOJ's low remedial standard will fail to deter future anticompetitive conduct by Microsoft or other similarly situated monopolists. Under the DOJ standard, if a monopolist quickly squashes a nascent competitor when it comes on the scene, before it acquires a significant market share, the antitrust penalty will be small because of the small impact that competitor has achieved at the time of its demise. This will not deter. To the contrary, it will simply encourage a rapid anticompetitive response to new entry.

In addition, our review convinces us that the *RPFJ* will not even satisfy the low remedial standard the Justice Department articulated. The core of the DC Circuit decision involved unlawful conduct by Microsoft to maintain the applications barrier to entry. Despite this, the *RPFJ* does nothing to reduce that barrier. The *RPFJ* does not even prohibit all the illegal conduct affirmed by the DC Circuit – most notably, the integration of middleware into the operating system through commingling of software code and the deception of Independent Software Vendors (ISVs) that led them to use Microsoft's Java tools.

Moreover, the term of the decree is only five years, a period shorter than the six years since the start of Microsoft's anticompetitive campaign in 1995, while the *RPFJ* is riddled with exceptions and loopholes that destroy its effectiveness. These exceptions will create a substantial risk that the plaintiffs will be required to litigate significant competitive issues every time that they believe Microsoft is not in compliance with the *RPFJ*. Microsoft,

meanwhile, will certainly challenge any non-compliance allegations. The consequent delay

will render the decree unenforceable and eliminate any incentives for Microsoft to comply.

Indeed, the *RPFJ* proposes an enforcement mechanism that itself is defective and thus will

fail to deter or punish further anticompetitive conduct by Microsoft. For example, the only

specific punishment for a pattern of willful and systematic violations is a one-time two-year

extension of this ineffective decree.

In short, the *RPFJ* fails to satisfy the public interest under either remedial standard

(the DOJ's or the one we believe is more appropriate for this case). The *RPFJ* is a "pseudo-

remedy" that will not terminate Microsoft's anticompetitive conduct, let alone restore

competition.

2. DOJ's Flawed Rationale for a Limited Remedy

In recent statements, Assistant Attorney General Charles James has attempted to

justify the limitations in the *RPFJ* on the grounds that the DC Circuit significantly narrowed

the case.[8] That justification is unwarranted. The government prevailed on the core part of

the complaint, the Section 2 monopoly maintenance count. Furthermore, in reversing the

tying and monopoly leveraging counts, the court did not excuse the conduct that the

government attacked. Instead, that very conduct provided the basis for liability for

monopolization. The fact is that the government won a great victory in this important case

and the *RPFJ* threatens to squander that success.

The Justice Department and Microsoft might argue that the *RPFJ* will implement

immediate and certain relief, free of litigation risk. In particular, the Department and Microsoft

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[8] Statement of Charles James to Committee of the Judiciary (United States Senate), "The Microsoft Settlement: A
Look to the Future" (December 12, 2001).

might claim that absent a settlement, a full-blown remedy hearing with inevitable appeals would result in substantial delay in implementation.

We disagree. First, the *RPFJ* does not eliminate litigation risk. Importantly, enforcement of the *RPFJ* itself, if approved by the court, will be accompanied by very substantial litigation risk. Certain key provisions of the *RPFJ* do nothing more than state the antitrust rule of reason, which would require the government to prove a new antitrust violation in an enforcement action. Other provisions contain exceptions that can effectively and inappropriately immunize Microsoft's actions. Thus, if Microsoft were to defend against an attempt by the Department to enforce the *RPFJ*, the Department inevitably would find itself in nothing short of yet another antitrust suit against Microsoft. In this way, the *RPFJ* is defective because it invites extensive litigation whenever any compliance issue is raised. That fact will increase litigation risk, not reduce it.

Second, in our view, the potential litigation delay is an inadequate justification for the weakness of the *RPFJ*. Waiting to obtain an effective remedy is better than implementing a *RPFJ* that can only be characterized as a "pseudo-remedy." In any event, enforcement under the *RPFJ* will involve substantial delays. Certain key provisions of the *RPFJ* involve significant and unnecessary delays of 9-12 months before being implemented. Equally important, the "reasonableness" qualifications and other exceptions written into the *RPFJ* will lead to adjudication delays in any enforcement actions.

3. More Effective Remedies

So what should the court do now? Given that the *RPFJ* clearly fails to meet any conceivable interpretation of the "public interest" standard that would be suitable for a case in which both trial and appellate courts have definitively spoken, the clear course is to reject the *RPFJ*, or at the very least, to postpone ruling now and to modify the remedy after further

evidence is taken during the next phase of the litigation. Thus, we certainly agree with this court's decision to evaluate in tandem the *RPFJ* and the remedial proposal of the Litigating States. The remedy hearing on the LS proposal will provide the court with the opportunity to evaluate the loss of competition caused by Microsoft's unlawful conduct over the past six years. Comparing the *RFPJ* with the LS proposal using the evidence gathered on the loss of competition will better enable the court to choose a remedy commensurate with the competitive harm.

As we discuss further below, the evidence adduced at trial and referenced by the trial court in its *Findings of Fact* already provides adequate evidence to support the conclusion that there was a strong causal connection between Microsoft's unlawful conduct and the subsequent state of competition in the market. The clear implication, therefore, is that a real remedy must reverse that impact to be in the public interest. We continue to believe that a divestiture that creates three competing OS companies is the most effective remedy. But if the court should eventually decide otherwise, we urge it to adopt the additional remedies proposed by the Litigating States (LS). The LS proposal includes several provisions that are designed to reduce the applications barrier to entry and thereby significantly increase the opportunity to restore the substantial competition foregone as a result of Microsoft's actions. It also eliminates key exceptions and loopholes and puts teeth into the enforcement mechanism.

We also recommend strengthening the remedy offered by the Litigating States in three ways. First, Microsoft should be required to certify compliance with the decree every six months. Second, the decree should be supplemented with a "crown jewel" provision that *automatically* implements a structural remedy -- preferably of the type we recommend here and suggested earlier in our Amicus Brief -- upon proof of a pattern of material violations of that

decree by Microsoft. Third, the term of the decree should be left open, but the decree should be reviewed after five years to see whether it can be terminated or needs to be modified to make it stronger and more effective.

4.   Organization of this Comment

This Comment is organized as follows. Sections II and III provide the background for our evaluation. In Section II, we review the record on Microsoft's monopoly power and the applications barrier to entry. We then review Microsoft's illegal anticompetitive conduct. We discuss the harm to competition caused by this conduct, including the entrenchment of Microsoft's monopoly power since 1995. This harm is described in detail because it is relevant to evaluating the *RPFJ*, which does not attempt to redress this harm. In Section III, we describe the goals that a remedy should attain and the enforcement principles required to implement the remedy in a way that serves the public interest. We then use the facts and principles developed in these two sections to evaluate the *RPFJ*.

In Section IV, we evaluate the *RPFJ* on the basis of the *CIS*'s stated remedial standard of restoring the competitive threat to the level prior to Microsoft's unlawful conduct. We find that the *RPFJ* does not achieve that goal because it does not prohibit all of Microsoft's unlawful conduct found by the DC Circuit, because it contains numerous exceptions and loopholes, and because it contains a defective enforcement mechanism.

In Section V, we explain why the *CIS*'s remedial goal sets too low a standard and why the proper standard would be to restore competition to the level that would have been achieved by now in the absence of the unlawful conduct. In Section VI, we discuss alternative remedies that stand a better chance of meeting this more appropriate standard. In particular, we discuss the "full divestiture" structural remedy, the conduct remedy proposed by the Litigating States, and our suggested modifications to the Litigating States' proposal.

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II.   Microsoft's Possession and Illegal Maintenance of Monopoly Power in the Supply of Operating Systems

The proper place to begin to assess the adequacy of the *RPFJ* is with the fundamental finding of both the District and Appellate Courts that Microsoft has continued to possess monopoly power in the supply of operating systems (OS), with a 95 percent share of that market.[9] Furthermore, the courts determined that the Mac OS, handheld devices, Internet portal sites, and the then-available "middleware" (which is discussed in greater detail below) did not impose any meaningful competitive constraint on the pricing or non-pricing behavior of Microsoft.[10]

It is one thing to acquire and maintain monopoly through lawful conduct, but quite another to maintain it through illegal acts. A second core finding of both courts is that Microsoft took the latter route by engaging in a variety of exclusionary activities to protect its monopoly position against growing OS competition. In particular, we describe in some detail below how Microsoft exploited the "applications barrier to entry" to prevent the emergence of OS competition. The detail is necessary to appreciate the broad insufficiency of the *RPFJ*.

A. The Applications Barrier to Entry

The government's case against Microsoft rested heavily on the existence of an "applications barrier to entry." Every operating system for a PC "exposes" (or makes available) to software developers "application program interfaces" (APIs) that developers use to "write" applications (such as spreadsheets, word processing, or games) for the OS. In particular, the APIs allow developers to access frequently-used routines in the OS that are also used in applications, which reduces the costs of and time entailed in generating those applications.

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[9] 253 F.3d at 51-52.

[10] *Findings of Fact* ¶¶21, 23, 27, 28-29 (84 F.Supp.2d at 15, 17-18), cited by the DC Circuit (253 F.3d at 52-53).

Each operating system has a different set of APIs. Consequently, if a software developer wants to create an application for multiple operating systems, the developer must tailor the application for each OS. This "porting" of applications from one OS to another is costly. As a result, if there were one widely used OS, software developers would tend to write for that OS and users of that OS would have access to more applications than users of other operating systems.

The cost of porting an application from one OS to another is the source of the "applications barrier to entry" in the supply of operating systems. Computer users tend to gravitate towards the largest-share OS, because that OS has more applications available than other operating systems. As the share of the dominant OS becomes even larger, software developers are even less likely to port their applications from the increasingly popular OS to other increasingly less popular operating systems.

One very possible result, therefore, is that in such a market, ever more consumers will flock to the larger-share OS, while ever fewer developers port their applications to other operating systems. Ultimately, such a dynamic can lead to the domination of the market by a single firm, able to charge what economists call "supracompetitive" prices and to earn "supranormal" profits. If, however, entry into the market were relatively easy, high profits would attract new firms, and the fear of that entry would encourage the dominant firm to continue to innovate in an effort to retain its position. But if barriers to entry are high, then fewer firms will be able to attract the capital and entrepreneurial talent to challenge the dominant OS than would be the case in a market where entry barriers are much lower.

The applications barrier to entry can produce such a sub-optimal outcome. Such a barrier arises when most users would not switch from the dominant OS because most of the applications

software would not be available for another OS offered by a new entrant. Consumers would

instead wait until more applications become available (or are imminent) for the entrant OS

before switching. The barrier is strengthened to the extent software developers will not write for

or port applications to the entrant OS until it has a sizeable user base. In this way, both

consumers and developers become "locked into" the dominant OS. This can happen even

though it would be in the collective interests of both consumers and developers to switch to an

alternative OS.

This explanation of the applications barrier to entry was not only documented by the

Department's own experts prior to the initial remedy exercise.[11] It was also found to exist *as a*

matter of fact by the trial court.[12]

In principle, the applications barrier to entry in the OS market could be overcome if there

existed a "universal translator" that reduced the costs of porting applications between the

dominant OS and other operating systems. If those costs were reduced, software developers

would be more likely to write applications that can run on multiple operating systems.

As the courts in this matter recognized, "middleware" could serve as such a universal

translator.[13] Middleware is software that can run on top of an operating system and expose its

own APIs to software developers. Any application that could run on the middleware could also

run on any OS on which the middleware can run. As a result, an application written to the APIs

of a middleware that can run on multiple operating systems would itself also run on those

otherwise incompatible operating systems. In this way, users of the less popular operating

systems could have access to the same applications available on the more popular operating

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[11] See, for example, Direct Testimony of Franklin M. Fisher at 9-19, 35-40.
[12] *Findings of Fact* ¶¶30, 36-37 (84 F.Supp.2d at 18-20), cited by the DC Circuit (253 F.3d at 55).
[13] *Findings of Fact* ¶¶29,72 (84 F.Supp.2d at 17-18, 29), cited by the DC Circuit (253 F.3d at 55).

systems. Similarly, developers would have an incentive to write to the middleware's APIs because there would be more potential purchasers of the applications software than if the developer wrote the application for only one OS. In short, the availability of middleware would ensure that users' choice of an OS is driven by the price and features of the OS, not by the relative number of applications available that flow from historical market shares.

B. The Middleware Threats to Microsoft's OS Dominance

In affirming the District Court's conclusion that Microsoft had illegally maintained its OS monopoly, the DC Circuit concluded that Microsoft's unlawful acts specifically were aimed at thwarting two related middleware threats to its monopoly power: Netscape Navigator and the Java technologies pioneered by Sun. As we discuss below, both threats in fact were successfully neutralized by Microsoft's anticompetitive conduct. As a result, Microsoft was able to prevent any erosion in the all-important (to Microsoft) applications barrier to entry.

1. The Netscape Navigator Threat

Netscape's Navigator quickly became the leading web browser after its introduction in 1994, raising concern at Microsoft that Navigator could become the middleware that substantially lowers or eliminates the applications barrier to entry.[14] After failing to convince Netscape that Navigator should not be middleware for the Windows OS,[15] Microsoft embarked on a strategy to reduce the use of Navigator as a web browser. If Microsoft could succeed in substantially reducing Navigator's share of browser usage, its value as a platform for software developers would be reduced and therefore new (and smaller-share) operating systems would continue to confront the applications barrier to entry. In that way, Microsoft would protect its

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[14] For example, see *Findings of Fact* ¶¶72, 166 (84 F.Supp.2d at 29, 51).
[15] *Findings of Fact* ¶¶79-87 (84 F.Supp.2d at 30-33).

OS monopoly. The tactics Microsoft adopted to implement this strategy effectively eliminated

the most efficient means for the distribution of Navigator to consumers:

- One of the two most important ways in which Navigator was distributed to consumers was through computer manufacturers (Original Equipment Manufacturers or OEMs) that would install Navigator on computers before being shipped to final consumers or retail outlets.[16] Microsoft imposed restrictions on its OS licenses with the OEMs that effectively prevented the OEMs from removing the Microsoft browser, Internet Explorer (IE), provided to the OEMs as part of the Windows OS package. In particular, the agreements with OEMs prevented them from removing any desktop icons, folders or start menu entries, including those for IE.[17] While OEMs could technically install Navigator as an additional browser, they did not do so because they would then incur substantial support costs in responding to the confusion among novice users caused by having two browsers on the desktop.[18] Given the dominance of Microsoft's operating system, OEMs had no effective competitive alternative to which they could turn if they chose not to accede to Microsoft's request.[19]

- To ensure that IE would not be removed from Windows by the OEMs, Microsoft technologically bound Internet Explorer to the Windows operating system.[20] It did so by excluding IE from the "Add/Remove Programs" utility in Windows 98[21] and by commingling the IE code with the OS code.[22] As with the license restrictions, these tactics prevented the OEMs and users from replacing IE with Navigator (or any other preferred browser). Indeed, if the OEM or user did remove IE from the Windows package, the code commingling guaranteed that the cost would have been substantial damage to the Windows OS.[23] Although the OEMs, in principle, could have installed Navigator as a second browser, the additional costs required to support two browsers discouraged such behavior. [24]

- The second important way in which Navigator at the time was distributed to users was through becoming the preferred browser for Internet Access Providers (IAPs).[25] At the OEM level, Microsoft prevented the OEMs from modifying the boot sequence of the computer when the user turns the computer on for the first time.[26] Previously, many OEMs had used the initial boot to prompt users to sign up with an IAP from a menu of IAPs, many of which at the time used Navigator as the web browser.[27] As a

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[16] *Findings of Fact* ¶145 (84 F.Supp.2d at 47), cited by the DC Circuit (253 F.3d at 60) .

[17] *Findings of Fact* ¶213 (84 F.Supp.2d at 61), cited by the DC Circuit (253 F.3d at 61).

[18] *Findings of Fact* ¶¶159, 210 (84 F.Supp.2d at 49-50, 60-61), cited by the DC Circuit (253 F.3d at 61).

[19] See, for example, *Findings of Fact* ¶158 (84 F.Supp.2d at 49).

[20] *Findings of Fact* ¶160 (84 F.Supp.2d at 49-50), cited by the DC Circuit (253 F.3d at 64).

[21] *Findings of Fact* ¶170 (84 F.Supp.2d at 52), cited by the DC Circuit (253 F.3d at 65).

[22] *Findings of Fact* ¶161 (84 F.Supp.2d at 50), cited by the DC Circuit (253 F.3d at 65).

[23] *Findings of Fact* ¶164 (84 F.Supp.2d at 50), cited by the DC Circuit (253 F.3d at 65).

[24] *Findings of Fact* ¶159 (84 F.Supp.2d at 49-50), cited by the DC Circuit (253 F.3d at 65-66).

[25] *Findings of Fact* ¶242 (84 F.Supp.2d at 69-70), cited by the DC Circuit (253 F.3d at 70).

[26] *Findings of Fact* ¶213 (84 F.Supp.2d at 61), cited by the DC Circuit (253 F.3d at 61).

[27] *Findings of Fact* ¶210, 212 (84 F.Supp.2d at 60-61), cited by the DC Circuit (253 F.3d at 61-62).

result of the restriction, Microsoft effectively inhibited OEMs' from promoting IAPs using Navigator.[28]

- A more direct attack by Microsoft on Netscape's use of IAP distribution of Navigator was embodied in exclusive agreements that Microsoft signed with all of the leading IAPs. In exchange for desktop access in the Windows OS, these IAPs agreed to promote only IE and to limit distribution of any IAP software containing Navigator to typically no more than 25% of the IAP's access software shipments.[29]

- There are two other channels that Netscape could have used to distribute its browser: Independent Software Vendors (ISVs) and Apple computers. With respect to the former, Microsoft concluded contracts with a large number of ISVs in which Microsoft agreed to provide the ISV with preferential OS support provided that the ISVs use IE as the default browser.[30] With respect to Apple, after threatening to terminate the production of its popular Mac Office, Microsoft concluded an agreement with Apple in which IE would become the default browser for Apple computers and no other browser icon would be placed on the desktop of new Macintosh computers or upgrades.[31]

The District Court found, and the DC Circuit affirmed, that each of these tactics was anticompetitive, violating Section 2 of the Sherman Act. Collectively, Microsoft used these tactics to effectively close the most efficient channels of distribution available to Netscape's Navigator. As the Justice Department's own *CIS* observes: "[b]ecause of its reduced access to efficient distribution channels, Navigator's share of browser use fell precipitously."[32] Thus, Microsoft effectively eliminated Navigator as a potential middleware provider, thereby also eliminating the possibility that its OS would have to compete on its merits.

2. The Java Threat

Sun Microsystems developed a middleware technology known as Java, which consists of four tools: (1) a programming language; (2) Java Class Libraries, which are a set of programs in that language that expose the APIs; (3) a compiler, which translates the developer code into

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[28] 253 F.3d at 61-62.

[29] *Findings of Fact* ¶¶258, 262, 289 (84 F.Supp.2d at 73, 74, 81), cited by the DC Circuit (253 F.3d at 68).

[30] *Findings of Fact* ¶339 (84 F.Supp.2d at 93), cited by the DC Circuit (253 F.3d at 71-72).

[31] *Findings of Fact* ¶¶349-352 (84 F.Supp.2d at 73), cited by the DC Circuit (253 F.3d at 73).

[32] *CIS* at 15.

instructions. The Java Class Libraries and the JVM are together called the "Java runtime

environment." Any software application that relies on the Java APIs will run on any computer

with a Java runtime environment.

In 1995, Netscape agreed to distribute a copy of the Java runtime environment with every

copy of Netscape Navigator.[33] At the time of the agreement, Navigator's popularity ensured that

the Java runtime environment would gain wide distribution.[34]

In combination with the distribution of Navigator, Sun's Java represented a clear and

present danger to Microsoft's OS monopoly because as middleware, Java had the potential of

substantially reducing the applications barrier to entry.[35] Rather than compete on the merits,

Microsoft responded to the Java-Navigator threat not only by the steps already described to limit

the distribution of Navigator, but by these additional measures:

- After developing its own version of the JVM, Microsoft negotiated agreements with a large number of leading ISVs in which the ISVs agreed to use Microsoft's JVM as the default in any software they created.[36] These agreements were de facto exclusive because the use of any other JVM would now require that the ISVs incur the costs of porting their Java applications from Microsoft's JVM to a Sun-compliant JVM,[37] which, of course, defeats the cross-platform purpose of the Java technologies.

- In 1995, when Intel was in the process of developing a JVM that would comply with Sun's cross-platform standards, Microsoft complained that the cooperation between it and Intel could be jeopardized if Intel did not end its cooperation with Sun.[38] Intel resisted Microsoft's entreaties until 1997 when Microsoft threatened to support one of Intel's competitors, AMD, in the development of 3D technology unless Intel stopped its work on Java. After this, Intel agreed.[39]

- Microsoft developed a set of tools to assist ISVs in creating Java applications.[40] However, unbeknownst to the ISVs, the use of these tools would create applications that were incompatible with Sun's JVM. Microsoft misled these developers into

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[33] *Findings of Fact* ¶76 (84 F.Supp.2d at 29-30), cited by the DC Circuit (253 F.3d at 74).
[34] *Findings of Fact* ¶394 (84 F.Supp.2d at 106-107), cited by the DC Circuit (253 F.3d at 76).
[35] *Findings of Fact* ¶28 (84 F.Supp.2d at 17), cited by the DC Circuit (253 F.3d at 74).
[36] *Findings of Fact* ¶401 (84 F.Supp.2d at 108-109), cited by the DC Circuit (253 F.3d at 75).
[37] *Findings of Fact* ¶401 (84 F.Supp.2d at 108-109), cited by the DC Circuit (253 F.3d at 75-76).
[38] *Findings of Fact* ¶396, 404, 405 (84 F.Supp.2d at 107, 109-110), cited by the DC Circuit (253 F.3d at 77).
[39] *Findings of Fact* ¶406 (84 F.Supp.2d at 110), cited by the DC Circuit (253 F.3d at 77).
[40] 253 F.3d at 76.

believing that the use of the tools would be of assistance in designing cross-platform Java applications.[41] As a result, ISVs became locked into Microsoft's tools, creating large costs of switching back to Sun's tools after the ISVs discovered the deception.

The District Court found each of these tactics to be in violation of Section 2 of the Sherman Act, findings that were affirmed by the DC Circuit. The acceptance of this promising middleware platform slowed as a result of Microsoft's actions. As a result, Microsoft preserved the applications barrier to entry and its OS monopoly.

C. Immediate Harm to Competition and Consumers

The courts found that each of these tactics adopted by Microsoft resulted in direct and immediate harm to competition. By inference, therefore, consumers clearly were harmed.

For example, with respect to commingling of the IE code with the Windows OS code, the DC Circuit concluded that:

> such commingling has an anticompetitive effect…the commingling deters OEMs from pre-installing rival browsers, thereby reducing the rivals' usage share and, hence, developers' interest in rivals' APIs as an alternative to the API set exposed by Microsoft's operating system.[42]

The DC Circuit reached a similar conclusion regarding the technological inability of the OEM to remove IE using the Add/Remove utility.[43] Microsoft subsequently requested "clarification" from the DC Circuit that the commingling would not be illegal if the OEM were

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[41] Java "developers who were opting for portability over performance…unwittingly [wrote] Java applications that [ran] only on Windows." *Conclusions of Law* (87 F.Supp.2d at 43), cited by the DC Circuit (253 F.3d at 76); see also 253 F.3d at 76-77.

[42] 253 F.3d at 66.

[43] Citing the *Findings of Fact* (¶159 (84 F.Supp.2d at 49-50)), the DC Circuit concluded that this inability "reduces the usage share of rival browsers not by making Microsoft's own browser more attractive to consumers but, rather, by discouraging OEMs from distributing rival products. Because Microsoft's conduct, through something other than competition on the merits, has the effect of significantly reducing usage of rivals' products and hence protecting its own operating system monopoly, it is anticompetitive…." (253 F.3d at 65.)

allowed to remove the icon from the desktop. The DC Circuit declined the request.[44] Thus, it is

clear that the DC Circuit intended its conclusion regarding commingling middleware code.

With respect to Netscape Navigator distribution, the courts found that Microsoft had

successfully foreclosed the OEM route for distribution to consumers. This was especially clear

in Microsoft's successful efforts to prevent OEMs from removing IE from the Windows desktop,

as to which the DC Circuit concluded that:

> the OEM channel is one of the two primary channels for distribution of browsers. By
> preventing OEMs from removing visible means of user access to IE, the license
> restriction prevents many OEMs from pre-installing a rival browser and, therefore,
> protects Microsoft's monopoly from the competition that middleware might otherwise
> present. Therefore, we conclude that the license restriction at issue is
> anticompetitive.[45]

The courts also found that Microsoft harmed competition by disrupting Navigator's

ability to be distributed by IAPs. For example, the DC Circuit concluded that Microsoft's

agreements with the IAPs ensured that because:

> the "majority" of all IAP subscribers are offered IE either as the default
> browser or as the only browser, Microsoft's deals with the IAPs clearly have a
> significant effect in preserving its monopoly; they help keep usage of
> Navigator below the critical level necessary for Navigator or any other rival to
> pose a real threat to Microsoft's monopoly. [46]

The DC Circuit reached similar conclusions with respect to Microsoft's license

restrictions that prevented OEMs from using the initial boot to prompt users to choose from a list

of IAPs (many of which at the time used Navigator as the preferred browser);[47] Microsoft's

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[44] Order (D.C. Cir. Aug. 2, 2001) (per curiam) (denying the motion for immediate issuance of the mandate and the petition for rehearing).

[45] 253 F.3d at 61.

[46] 253 F.3d at 71.

[47] The DC Circuit concluded: "Microsoft does not deny that the prohibition on modifying the boot sequence has the effect of decreasing competition against IE by preventing OEMs from promoting rivals' browsers. Because this prohibition has a substantial effect in protecting Microsoft's market power, and does so through a means other than competition on the merits, it is anticompetitive." (253 F.3d at 62.)

agreements with leading ISVs to use IE as the default browser in their applications;[48] and

Microsoft's agreement with Apple by which IE would become Apple's default browser.[49]

Similarly, the courts found that Microsoft's exclusionary tactics directed at Sun's Java

served to illegally maintain Microsoft's monopoly OS power. For example, with respect to the

agreements by which the Microsoft JVM would be the ISVs' default JVM, the DC Circuit

concluded that:

> the record indicates that Microsoft's deals with major ISVs had a significant
> effect upon [rival] JVM promotion .… Because Microsoft's agreements
> foreclosed a substantial portion of the field for JVM distribution and because,
> in so doing, they protected Microsoft's monopoly from a middleware threat,
> they are anticompetitive .… [W]e hold that the provisions in the First Wave
> Agreements requiring use of Microsoft's JVM as the default are exclusionary,
> in violation of the Sherman Act.[50]

The DC Circuit reached similar conclusions with respect to both Microsoft's deception of

ISVs regarding the incompatibility of Java applications created using Microsoft's Java tools on

Sun-compliant JVMs[51] and regarding Microsoft's success in persuading Intel not to support the

Sun-compliant JVMs.[52]

In sum, Microsoft succeeded in foreclosing access by the middleware platforms offered

by both Navigator and Sun's Java to the most effective means of distributing this middleware to

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[48] The DC Circuit observed that: "Although the ISVs are a relatively small channel for browser distribution, they take on greater significance because, as discussed above, Microsoft had largely foreclosed the two primary channels to its rivals. In that light, one can tell from the record that by affecting the applications used by 'millions' of consumers, Microsoft's exclusive deals with the ISVs had a substantial effect in further foreclosing rival browsers from the market….[B]y keeping rival browsers from gaining widespread distribution (and potentially attracting the attention of developers away from the APIs in Windows), the deals have a substantial effect in preserving Microsoft's monopoly…." (253 F.3d at 72.)

[49] The DC Circuit concluded that "Because Microsoft's exclusive contract with Apple has a substantial effect in restricting distribution of rival browsers, and because… reducing usage share of rival browsers serves to protect Microsoft's monopoly, its deal with Apple must be regarded as anticompetitive. " (253 F.3d at 73-74.)

[50] 253 F.3d at 75-76.

[51] Specifically, the DC Circuit concluded that "Microsoft's conduct related to its Java developer tools served to protect its monopoly of the operating system in a manner not attributable either to the superiority of the operating system or to the acumen of its makers, and therefore was anticompetitive." (253 F.3d at 77.)

[52] The DC Circuit found that "Microsoft's internal documents and deposition testimony confirm both the anticompetitive effect and intent of its actions." (253 F.3d at 77.)

consumers, as well as to other distribution channels. As a result of this foreclosure, neither

middleware would develop to its full competitive potential. With respect to the effects on

Navigator, the *CIS* summarized the harm in the following way:

> Microsoft's actions succeeded in eliminating the threat that the Navigator
> browser posed to Microsoft's operating system monopoly. Foreclosed from
> effectively using the OEM and IAP distribution channels by Microsoft's
> exclusionary conduct, Navigator was relegated to more costly and significantly
> less effective modes of distribution. The adverse business effects of these
> restrictions also deterred Netscape from undertaking technical innovations in
> Navigator that might have attracted consumers and revenues.[53]

Similarly, with respect to Java and its distribution via Navigator, the *CIS* concludes:

> Through its actions against Navigator and Java, Microsoft retarded, and
> perhaps extinguished altogether, the process by which these two middleware
> technologies could have facilitated the introduction of competition into the
> market for Intel-compatible personal computer operating systems.[54]

D. Continuing Substantial Harm to Competition and Consumers

The middleware platforms offered by Navigator and Sun's Java were in their nascent

stages at the time that Microsoft pursued its exclusionary strategy. However, the nascent state of

the competitors does not make Microsoft's antitrust violations merely technical in nature and of

no significant long-term consequence. By the same token, it would be a mistake to conclude that

an appropriate remedy could be limited to one that imposes only minor constraints on

Microsoft's behavior. Such a limited remedy would not repair the loss in competition caused by

Microsoft's unlawful conduct *because the harms to competition and consumers were substantial*

and continuing in nature.

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[53] *CIS* at 15.
[54] *CIS* at 16-17.

1. The Shifting PC Paradigm Provided the Opportunity for the Emergence of New and Substantial Competition

What is more apparent now than in 1995 is how central the role of the Internet would become as an applications platform. During the mid-1990s, the maturation of the Internet was beginning to create a new paradigm for personal computing that relied on linkages over the Internet. The occasion of a paradigm shift represents an opportunity for new competition in a market characterized by network effects. We know now with much more certainty than even at the closing of the trial record that the Internet has transformed PC usage from a solo experience—one user at one computer, using applications that reside on the desktop—to an interconnected computer universe, using the Internet for both interpersonal communications and for accessing applications on the web.[55] Thus, instead of having all frequently used applications resident in the desktop, more and more of those applications were developed specifically for the Internet, most notably instant messaging, chat rooms, and online shopping, as conventional email always has been. In this way, the Internet has become the new communications medium, with the computer as the new "handset."

In the absence of Microsoft's exclusionary conduct, both Netscape Navigator and Sun-compliant Java by now would have developed into a widely-used source for cross-platform applications, and thus would have spurred far more significant competition with Windows. In addition, at least some of the other efforts at the development of platform-neutral software would also likely have reached competitive significance. These efforts include Intel's Native Signal

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[55] For example, the District Court found that "…events, in which categories are redefined and leaders are superceded in the process, are spoken of as 'inflection points'…The exponential growth of the Internet represents an inflection point born of complementary technological advances in the computer and telecommunications industries. The rise of the Internet in turn has fueled the growth of server-based computing, middleware, and open-source software development. Working together, these nascent paradigms could oust the PC operating system from its position as the primary platform for applications development and the main interface between users and their computers." *Findings of Fact* ¶¶59-60 (84 F.Supp.2d at 25-26).

Processor software, whose APIs for enhanced video and graphics performance would be exposed by Intel, not Windows;[56] Apples' QuickTime, which offers video and audio playback (among other capabilities) for both the Mac OS and Windows;[57] and Real Networks' software, which provides audio and video streaming software for multiple platforms.[58]

The loss of competition stemming from Microsoft's tactics likely reduced the rate of innovation in both operating systems and in web-centric applications. But for Microsoft's illegal actions, the paradigm shift would likely have occurred more rapidly and completely. As one of the Justice Department's remedy experts, Professor Paul Romer, observed in his declaration in April 2000:

> It is impossible to know with certainty the types of applications that might have developed had innovation continued with full force on [the Navigator and Java] fronts. We do know, however, that some types of applications forecast by the advocates of the browser and Java virtual machine are finally emerging. For example, companies are only now bringing to market server-based applications accessed via a browser that substitute for traditional desktop productivity applications.[59]

Netscape Navigator and Sun's Java were at the center of the new computing paradigm. They had the opportunity to create momentum for a competitive process that would breakdown the applications barrier to entry and Microsoft's operating system monopoly. By eliminating the threats of both Navigator and Sun's Java, Microsoft maintained its Windows monopoly. The browser war is now over and Microsoft won as a result of its illegal conduct. Netscape is no longer any significant part of the market landscape and Internet Explorer has a virtual lock on the market.[60] By eliminating Netscape as a middleware threat and platform for the development of

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[56] *Findings of Fact* ¶¶95-97 (84 F.Supp.2d at 34).
[57] *Findings of Fact* ¶¶104-110 (84 F.Supp.2d at 36-37).
[58] *Findings of Fact* ¶¶111-114 (84 F.Supp.2d at 37-38).
[59] Romer Declaration ¶11.
[60] The DC Circuit did not find this process of achieving any power or control in browsers to be a separate and independent antitrust offense. However, this dominance clearly flows from the same conduct that was found to illegally maintain Microsoft's desktop operating system monopoly.

web-based applications, Microsoft thereby extended Microsoft's power and control into Internet applications.

Meanwhile, Sun's Java has lost its momentum from Microsoft's "polluted" Java and will not be able to reestablish its position by itself even after Microsoft stops its anticompetitive campaign.[61] This is because ISVs that have invested in developing expertise in the use of Microsoft's Java tools have become locked-in and now face substantial costs of switching to Sun's Java tools.

Likewise, the Real Networks and the QuickTime applications have never developed into the middleware opportunity that appeared likely in the mid-1990s. They have lost their lead and are now fighting for survival, while Microsoft has gained control over the multimedia platform through Windows Media Player.

Finally, in operating systems, the Mac OS and Linux OS continue to occupy a niche position while OS/2 is virtually non-existent. It is true that the Linux OS has made significant inroads into the server market where professional, technically savvy users are important in buying and using the product. But Microsoft's OS dominance in the desktop PC market continues and is not threatened by Linux, which is an "open source," or non-proprietary product.

As one of Microsoft's consultants has explained:

> Although experience suggests that surprises are possible, open source does not seem a viable model for producing mass-market software . . . Linux doesn't have a standard easy-to-use graphical interface. And it can't boast of many high-quality, user-friendly applications that appeal to mass-market users.[62]

In short, for Linux, too, the applications barrier to entry into the mass-market for PCs is simply too high to pose any real threat to Microsoft's dominance.

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[61] This, of course, suggests that any effective remedy should if possible restore Sun-compliant Java to the prominence it would have attained absent Microsoft's illegal conduct.

2. The Opportunity for the Emergence of New Competition Was Substantial and Its Loss Was Due to Microsoft's Exclusionary Actions

The evidence that, but for Microsoft's exclusionary actions, the competition to Microsoft would have been much more substantial than it is today, can be found in the fears that Microsoft itself expressed in the numerous memoranda and emails that are part of the trial record -- frequently cited by the District Court in its *Findings of Fact* and by the DC Circuit. For example, in a 1995 memorandum to his staff, Bill Gates expressed his concern that Netscape was "pursuing a multi-platform strategy where they move the key API into the client to commoditize the underlying operating system."[63] Further, as Microsoft executive Ben Slivka explained in his deposition,

> So the point is not that the little Web browser, you know, whether it was Navigator 1 or Navigator 2 or Navigator 3, the point was not that that thing by itself as it stood then would immediately kill Windows. That wasn't the point. The point was that that thing could grow and blossom and provide an application development platform which was more popular than Windows.[64]

Indeed, the central purpose of Microsoft's actions was to "divert enough browser usage from Navigator to neutralize it as a platform." [65]

In terms of how to deal with the Netscape threat, senior Microsoft executives made it clear that but for radical exclusionary action, IE would not succeed in eliminating Netscape and that as a result, Netscape would be a potent competitive constraint. For example, Judge Jackson cited the following statement by Microsoft executive James Alchin:

> I don't understand how IE is going to win. The current path is simply to copy everything that Netscape does packaging and product wise. Let's [suppose] IE is as good as Navigator/Communicator. Who wins? The one with 80% market share. Maybe being free helps us, but once people are used to a product it is

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[62] David S. Evans, *Is Free Software the Wave of the Future?*, THE MILKEN INSTITUTE REVIEW, Fourth Quarter 2001, p. 41.

[63] *Findings of Fact* ¶72 (84 F.Supp.2d at 29).

[64] Benjamin Slivka 9/3/98 Dep. Tr. 252-253, cited in Direct Testimony of Franklin M. Fisher at 40-41.

[65] *Findings of Fact* ¶143 (84 F.Supp.2d at 46), cited by the DC Circuit (253 F.3d at 71).

hard to change them. Consider Office. We are more expensive today and
we're still winning. My conclusion is that we must leverage Windows more.
Treating IE as just an add-on to Windows which is cross-platform [means]
losing our biggest advantage — Windows marketshare. 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.[66]

Similarly, Microsoft had clearly evidenced comparable concerns with respect to the threat

that Sun's Java posed to Microsoft's OS dominance. For example, Microsoft believed that it had

"…to fundamentally blunt Java/AWT momentum" so as "…to protect our core asset

Windows."[67] Indeed, the now-famous Microsoft document made clear the substantial

competitive threat that Microsoft perceived Java to be: "Kill cross-platform Java by grow[ing]

the polluted Java." [68] Microsoft also made this position clear to Intel.[69]

The competitive importance of Java was also described clearly in an article appearing in

the November 1996 edition of *Fortune*:

To Microsoft's dismay, [Java] is fast becoming what is known as a computing
platform—a sturdy base upon which programmers can build software
applications…Java programs, once written, can run without modification on
just about any kind of computer: a PC, a Macintosh, a Unix workstation—
heck, even a mainframe. The underlying operating system makes no
difference. …In scarcely a year, Java has evolved into a major challenger to
Microsoft's Windows family of PC operating systems—faster even than DOS
and Windows rose to challenge traditional mainframes and minicomputers.
Java is also well on its way to becoming the most important Internet software
standard, catapulting Sun past Netscape and Microsoft as the leader in Internet
computing.[70]

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[66] *Findings of Fact* ¶166 (84 F.Supp.2d at 51).

[67] 6/20/96 re "windows and internet issues," Paul Maritz to Brad Silverberg et al.: Pl. Ex. 42, at MS6 6010347.

[68] GX 259, cited by the DC Circuit (253 F.3d at 76-77).

[69] As stated by Judge Jackson, "in November 1995, Microsoft's Paul Maritz told a senior Intel executive that Intel's [adaptation of its multimedia software to comply with] Sun's Java standards was as inimical to Microsoft as Microsoft's support for non-Intel microprocessors would be to Intel." *Findings of Fact* ¶405 (84 F.Supp.2d at 109-110), cited by the DC Circuit (253 F.3d at 77).

[70] "Sun's Java: The Threat to Microsoft is Real," *Fortune*, November 11, 1996.

The *Findings of Fact* make clear that Microsoft both recognized and was deeply worried about the threats from both Java and Netscape.[71] The court wrote:

> The combined efforts of Netscape and Sun threatened to hasten the demise of the applications barrier to entry, opening the way for non-Microsoft operating systems to emerge as acceptable substitutes for Windows. By stimulating the development of network-centric Java applications accessible to users through browser products, the collaboration of Netscape and Sun also heralded the day when vendors of information appliances and network computers could present users with viable alternatives to PCs themselves. …Decision-makers at Microsoft are apprehensive of potential as well as present threats, though, and in 1995 the implications of the symbiosis between Navigator and Sun's Java implementation were not lost on executives at Microsoft, who viewed Netscape's cooperation with Sun as a further reason to dread the increasing use of Navigator.[72]

3. Conclusion

Taking Microsoft's own fears at its word, the court should not assume that Microsoft's illegal conduct failed to have its intended significant effects on competition. Instead, the courts should take Microsoft's own contemporaneous views for what they were: fears that these nascent competitors would have led to significant market competition today.

E. More Entrenched Microsoft Monopoly

Paradigm shifts in computing are not events that occur with great frequency. Indeed, only three significant shifts have occurred in the history of the PC industry: the shift from mainframes to PCs; the shift from a text-based to a graphical interface; and the current, nearly completed shift from the use of the PC as a single-user experience to the increasing reliance on the Internet for applications and communications. Microsoft relied on an exclusionary strategy to protect its monopoly power from the competition that would have been spawned by the paradigm shift. But now, Netscape has lost its window of opportunity to take advantage of this

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[71] *Findings of Fact* ¶ 72 (84 F.Supp.2d at 29) (referencing Gates' "Internet Tidal Wave" memo), ¶ 77 (id. at 30).
[72] *Findings of Fact* ¶77 (84 F.Supp.2d at 30).

latest paradigm shift and Java has been neutralized. This middleware has been supplanted by Microsoft's own offerings. By carrying out its exclusionary strategy, Microsoft effectively destroyed the opportunity for these middleware competitors to overcome the applications barrier, competitors that Microsoft clearly viewed as a substantial threat to its OS monopoly power. Instead of consumers benefiting from the growing competition over the past five years, Microsoft has used the past five years to entrench the monopoly power of the Windows operating system and gain greater control over computing in the new Internet paradigm. Thus, the opportunity for new competition has been lost. Creating competition in the next paradigm shift will be even harder.

In just the past few months, Microsoft has introduced Windows XP, which has technologically bound key Internet-gateway applications such as Windows Media Player to the operating system and its various browsers. In this way, Microsoft discourages software developers from writing their programs to competing middleware platforms. This also makes it harder for operating system competition to emerge.

As Microsoft's monopoly has become more entrenched, no alternative middleware threat has yet emerged that can match the significance of the threat posed by Navigator and Sun's Java in 1995. And overcoming the applications barrier to entry will be even harder for the next middleware threat. Microsoft now controls APIs and other standards, applications and platforms in browsing, Java and multimedia. This more pervasive control by Microsoft over these platforms means that independent software developers are even less likely to write to non-Microsoft platforms. A new platform entrant must now be able to overcome an applications barrier for these additional applications as part of the process of overcoming the applications barrier for the desktop OS.

Microsoft also has cemented its dominant desktop OS monopoly with the development of the Windows CE operating system for handheld devices as well as its increased share of OS server sales. While this power was not alleged in the government's complaint or found to be illegal, Microsoft's own offerings clearly have benefited from the illegal entrenchment of its desktop monopoly. Thus, a new platform entrant must not only overcome the application advantages that Microsoft illegally obtained in the desk top OS and extended to Internet applications, it must also provide compatibility with the handheld computers, which are rapidly gaining in popularity, and with servers which are increasingly relying on Microsoft's server operating systems.

Moreover, Microsoft has sent a clear and unambiguous signal by its conduct to would-be OS and cross-platform developers. As Dr. Romer explained:

> In the browser wars, Microsoft showed that it had the power to reduce the return Netscape and Sun earned on their investments in innovative technologies and that it was willing to use this power. This reduces the expected profits that outside innovators can expect to earn from developing technologies that threaten to create additional competition for Microsoft's operating system monopoly.[73]

Thus, any developer of a credible means of providing applications interoperability across different operating systems must surely expect that Microsoft will use the same kind of swift, broad, and persistent exclusionary tactics to eliminate such a competitive threat to its OS. Similarly, any OEM, IAP, and ISV will consider Microsoft's likely reaction if they were to distribute or use any middleware with the potential to undermine Microsoft's monopoly power. In this way, the effect of Microsoft's actions has been to raise the applications barrier to entry by increasing the risk of investing in cross-platform initiatives. As a consequence, the immediate effects from Microsoft's foreclosure strategy will cast a long shadow into the future. After all,

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[73] Romer Declaration ¶12.

there is now no rival to Microsoft that poses a competitive threat to Microsoft that is comparable to threat that had been posed to Microsoft by Navigator and Sun's Java. Developments such as the roll-out of Microsoft's XP, which bundles productivity applications on the Internet with the operating system, raise the prospect—viewed as nearly a fait accompli in some quarters—that Microsoft is leveraging its PC OS monopoly power into the Internet.

Consequently, Microsoft's OS is today considerably more protected from the threat of entry than was true in 1995, because Microsoft has been able to eliminate all threats with seeming impunity. As we subsequently conclude, the weaknesses in the *RPFJ* are so substantial that if adopted, the *RPFJ* may *encourage* Microsoft to become even more aggressive in its anticompetitive behavior. Both Microsoft and any potential threats to Microsoft's market power will recognize that the penalty for Microsoft's antitrust transgressions is far less than what was likely expected prior to the *RPFJ*. As a result, with a lower expected penalty, Microsoft will find it profitable to adopt some anticompetitive strategies that prior to the adoption of this *RPFJ* it would have not viewed as profitable.

III.   Remedy and Enforcement Principles

In this section, we describe the goals that a remedy in this matter should attain and the enforcement principles required to implement the remedy in a way that serves the public interest. Our review of the relevant literature indicates that the relief phase of antitrust cases is often treated as an afterthought, even in cases as important as monopolization findings under Section 2 of the Sherman Act. For example, Professor Lawrence Sullivan has observed: "Perhaps the best hope is that, hereafter, courts facing structural remedy issues will get more help than they have customarily received from the Department of Justice. As Judge Wyzanski implied in *United*

Shoe Machinery, the government is sometimes extremely casual about remedy."[74] A similar

point of view has been voiced by Chief Judge Richard Posner (who attempted to mediate a

settlement in this case):

> Another reason for the poor record of divestiture as an antitrust remedy is that
> the government's lawyers tend to lose interest in a case at the relief stage.
> They derive both personal satisfaction and career advancement from the trial of
> an antitrust case, but gain neither from the post-trial relief negotiations and
> proceedings, which they frequently tend to pay scant attention.[75]

In our experience, when similar issues arise outside antitrust, even in situations with far less

significant potential economic consequences, agencies charged with making these determinations

(in rulemaking contexts, for example) generally do so only after extensive fact-finding and, in

some cases, hearings.

The public interest would best be served by a similar remedy proceeding in this matter

before any final decisions regarding settlement are reached. This hearing should be expedited in

light of the urgency and rapid pace of change in the industry. A fact-finding process aimed at

resolving the many complex issues in this matter is far more likely to result in a resolution that

advances the interests of consumers than is a brief Tunney Act proceeding. If the court does not

reject the *RPFJ* outright, we would urge the court to postpone the ruling now and modify the

remedy after further evidence is offered during the next phase of the litigation. Thus, we

certainly agree with the decision by the court to (in effect) use the upcoming remedy hearings on

the proposal of the Litigating States to evaluate the RPFJ in tandem. This remedial hearing will

be vital to assess the loss of competition cause by Microsoft's illegal exclusionary conduct.

Comparing these two remedial proposals using the evidence gathered on the loss of competition

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[74] Lawrence Anthony Sullivan, *Handbook of the Law of Antitrust*, West (1977) at 146.
[75] Richard Posner, *Antitrust: An Economic Perspective*, University of Chicago Press (1978) at 89.

during the court's assessment of the LS proposal will better enable the court to choose a remedy commensurate with the competitive harm.

In this section, we elaborate on the proper remedial goals and enforcement principles of an effective antitrust remedy. In the next two sections, we explain why the proposed *RPFJ* fails to attain these goals. We then discuss more effective, alternative remedies.

A. General Remedial Goals

The court has a deceptively simply task at this point in this hallmark litigation: to decide whether the settlement reached between Microsoft, the Department of Justice and nine of the state plaintiffs is in the "public interest," as that term is used in the Tunney Act, which governs this particular phase of the proceedings. We say "deceptively simple" because it is tempting to apply the standard for defining what is in the public interest that was announced by the Court of Appeals for the District of Columbia when it considered the 1994 consent decree reached between Microsoft and the Department: whether the decree stopped the practices alleged in the complaint brought by the government. United States v. Microsoft Corp., 56 F. 3d 1448 (D.C. Cir. 1995).

However, such a standard is clearly inappropriate at the current point in this proceeding, for a very simple reason: a lower court has found, and an appellate court has affirmed, that Microsoft has engaged in a series of significant violations of the antitrust laws aimed at entrenching its OS monopoly and thwarting effective competition to it. The appropriate test therefore should be much stronger than in a typical Tunney Act proceeding.

The remedy clearly must halt all the practices the courts (in this case both the trial and appellate courts) have condemned as violations. But, in this matter, the test must be even broader than that. *Now that the case has been adjudicated to a verdict, the public interest*

standard should be no different than the standard the courts would apply to any remedy that

would be appropriate in an antitrust case. As the appellate court in this case made clear, that

standard has been set forth by the Supreme Court in United Shoe: a remedy must not only

"unfetter a market from anticompetitive conduct" but also must "terminate the illegal monopoly,

deny to the defendant the fruits of its statutory violation, and ensure that there remain no

practices likely to result in monopolization in the future." Ford Motor Co., 405 U.S. at 577 and

United Shoe, 391 U.S. at 250.

Applied to this case, these principles suggest that an effective remedy should accomplish

the following. First, the remedy should terminate the conduct that the court has found to violate

the antitrust laws. Second, the remedy should within a short period introduce competition into

the operating system market. The key to the success of this goal will be the effectiveness of the

remedy in reducing the applications barrier to entry as a means of establishing economic

conditions most conducive to competition for operating systems. Third, the remedy should

reduce the ability of Microsoft to project its current monopoly power into other markets, as a

way of inhibiting Microsoft from reinforcing its monopoly in operating systems.

1. Terminating the Illegal Conduct

Any final remedy, whether a consent decree or a court-imposed judgment, should

terminate all of the conduct found to be anticompetitive, and should prohibit such conduct in the

future. In this regard, the decree should cover *all* of the conduct found by the court to be illegal.

It should also be as specific as possible in describing the kinds of conduct that are enjoined. As

discussed further below, the consent decree should provide effective incentives to comply with

these conduct prohibitions. Finally, the decree should seek to avoid creating loopholes by which

the defendant can maintain its monopoly through alternative means of exclusionary behavior.

2. Restoring Competition to the Level that Would Exist Today, But for Microsoft's Exclusionary Behavior

The consent decree ought to terminate the illegally maintained monopoly by restoring competition. Specifically, the decree should repair the loss of competition caused by Microsoft's unlawful anticompetitive conduct to destroy the middleware threat caused by Netscape and Java. The courts already have found in clear and convincing terms that Microsoft's conduct helped it to maintain its operating system monopoly. The consent decree should seek to restore the market to the competitive trajectory that it would have reached by now, had the illegal conduct never occurred.

This outcome demands more than simply requiring Microsoft's future conduct to comply with the antitrust laws. The central theme running through the trial court's *Findings of Fact* is that Microsoft's acts have chilled innovation and have therefore distorted the evolution of the software market. While history cannot be rewritten and the world has lost several years of increased competition in operating systems, an appropriate remedy can provide future innovation opportunities to current and would-be entrants. Adapting the court's own language, if one object of the remedy is to restore competition in the markets in which Microsoft competes, Microsoft's "oppressive thumb" cannot be effectively removed unless the "scales of competitive fortune" are themselves rebalanced.[76]

In dynamic markets that are subject to network effects, such rebalancing will be required because competition does not automatically or instantly spring back to life when exclusionary conduct is ended. Network effects make monopolies durable. Microsoft will continue to enjoy significant monopoly power even if its illegal exclusionary conduct is stopped. Entry by new firms that once might have been possible may be no longer possible, even if additional

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[76] *Conclusions of Law* at 44 (87 F.Supp.2d at 44), cited by the DC Circuit (253 F.3d at 78).

exclusionary conduct is prohibited. Thus, an effective decree should seek to repair the loss in competition and jump-start the competitive process.

The most straightforward and effective method of helping to repair the loss in competition in this matter is *to craft a remedy (such as the "full divestiture" remedy described below) that directly and immediately creates the OS competition foregone as a consequence of Microsoft's illegal behavior. While more uncertain as to the ultimate effect, any other remedy should sufficiently reduce the applications barrier to entry (that the court found helped Microsoft maintain its monopoly) to enable the restoration of the lost competition*. The middleware threat by Netscape and Java were on track to reduce the applications barrier to entry. Microsoft's panoply of unlawful conduct halted this growing competitive process in its infancy.

Thus, an antitrust decree should either directly create the lost OS competition or contain specific provisions that enable applications vendors and potential platform competitors to surmount the applications barrier to entry that will continue to protect Microsoft's monopoly even after exclusionary conduct has been terminated. It should also attempt to recreate the strong independent middleware platform that would have been achieved by now in the absence of Microsoft's anticompetitive conduct over the past six years.

3. Deterring the Recurrence of Monopoly through Future Anticompetitive Conduct

The consent decree also should deter continued or additional anticompetitive conduct that might allow the monopoly to recur. In this case, the condemned conduct included a variety of exclusionary behavior. It is insufficient simply to prohibit the continuation of this specific exclusionary behavior without also mandating penalties for new kinds of exclusionary behavior that the defendant might substitute for the conduct that is enjoined. Otherwise, the defendant is only encouraged to find alternative means of exercising its monopoly power. This remedial goal

should be of particular concern in this case because Microsoft has shown a willingness and ability to exploit poorly crafted decrees.

In evaluating whether the consent decree serves the public interest, the court should be mindful of factors that will tend to make poorly crafted conduct restrictions ineffective. For example, there is an asymmetry of knowledge between the courts and the defendant. Courts do not have perfect information, and are likely to have incomplete knowledge and observation of Microsoft's conduct. As a result, all conduct compliance issues will require extensive investigation by the courts, if the conduct decree is vaguely crafted. In addition, there are delays in enforcement. And Microsoft has displayed a continuing pattern of the same exclusionary conduct. For example, Windows XP is more tightly integrated than any other previous version of the Windows operating system. Given these realities, a simple injunction that merely prohibits the repeating of past conduct clearly would be insufficient.

B. Enforcement Principles

Whatever the exact provisions of a consent decree, it must be enforceable if it is to be effective in achieving any objectives that the court deems appropriate. An enforceable decree is one for which violations of the decree are quickly and easily detectable, and for which the penalties for violation provide sufficient incentives for the defendant to remain fully compliant. If the decree is not so enforceable, it will not attain any of the three goals described above.

The principle of quick and easy detection of decree violations requires that the consent decree have specific prohibitions. It must set clear and easily observed boundaries for impermissible conduct. *A conduct decree that merely restates the antitrust rule of reason does not satisfy this principle.*

The principle of enforceability also requires that the consent decree provide for specific and sufficient punishment for violations. A defendant may rationally choose to violate a consent decree, and would do so whenever the expected profits from doing so exceed the expected penalties. The expected penalties take into account both the probability of detection as well as the severity of the penalty in the event of detection. In order for these penalties to have deterrence value, they must be equal to or greater than the substantial benefit to the defendant of continued violations.

Enforceability also involves a time dimension. A defendant's decision calculus rationally takes into account the expected timing of both the profits and the penalties. This means that enforcement must occur rapidly, lest the defendant reap all of the benefits of the violation before it is stopped. This issue is a particular concern in a market like this one that is subject to rapid technological change and network effects. In this type of market, opportunities for meaningful competition to emerge may be sporadic. For example, if an entrant were destroyed as a change in technology was occurring, that opportunity for new competition might not reoccur once the paradigm shift was completed. Also, in markets where network effects are strong, monopolies tend to be entrenched and durable. This places a premium on swift enforcement.

In addition, an effective consent decree should take into account the fact that the remedy in this case will affect deterrence of anticompetitive conduct in related markets, and even in unrelated markets. This case will set a precedent for the consequences of anticompetitive behavior in technology-driven industries. The consent decree will send a message to other potential antitrust offenders. If the decree is a full and effective remedy, that message will be that there is no profit in violating the antitrust laws.

C. Implications for Evaluation of the *RPFJ*

These remedial and enforcement principles can be used to evaluate the *RPFJ*. They imply three serious flaws in the *RPFJ*.

First, the *RPFJ* is flawed because it does not even achieve the limited remedial goal it sets out for itself. The *RPFJ* is riddled with exceptions and loopholes that will prevent the middleware threat from becoming reestablished. It does not cover all the conduct that was found to be unlawful by the DC Circuit. It also ignores the market impact of Microsoft's illegal conduct. Having neutralized the middleware threat it faced from Netscape and Java, Microsoft has maintained its control over the course of the paradigm shift in computing, a time when the opportunities for new entry would otherwise be expected to be enlarged. There are no equally powerful middleware threats today to replace the ones that have been neutralized.

Second, the *RPFJ* is flawed because it contains a defective enforcement mechanism. The *RPFJ* will be difficult to enforce in a timely manner and the penalty for non-compliance is weak. Therefore, the *RPFJ* will not deter future anticompetitive conduct by Microsoft.

Third, the *RPFJ* is flawed because it is premised on improper remedial goals. The stated goal of the *RPFJ* is to "restore the competitive threat that middleware products posed prior to Microsoft's unlawful undertakings." (*CIS* at 3.) Instead, the proper goal should be to restore competition to the level that would have been achieved today in the absence of Microsoft's unlawful conduct. This goal is needed to terminate the unlawful monopoly, restore competition, and achieve real deterrence in the future.

We discuss these flaws next. Section IV analyzes the flaws in the context of the DOJ's own remedial standard and the associated defects in the enforcement mechanism. Section V then explains why DOJ's remedial standard is flawed and much too limited given the current status of this particular case. Section VI then discusses alternative, more effective remedies.

IV.   The *RPFJ* Fails Under DOJ's Own Remedial Test

The DOJ's *CIS* claims that its *RPFJ* will …restore competitive conditions to the market"
and will "…restore the competitive threat that middleware products posed prior to Microsoft's
unlawful undertakings."[77] The DOJ argues that "the key to the proper remedy in this case is to
end Microsoft's restrictions on potentially threatening middleware, prevent it from hampering
similar nascent threats in the future and restore the competitive conditions created by similar
middleware threats."[78]

Simply restoring competition to its condition prior to Microsoft's unlawful conduct is too
limited a goal. The proper benchmark should be to achieve the level of competition that would
exist today but for Microsoft's illegal conduct. But even if the DOJ's goal were appropriate, the
RPFJ still fails to satisfy even the low standard the DOJ has used. The *CIS* also fails to
acknowledge that its goal is more difficult to attain today than it was in 1995 because
Microsoft's illegal exclusionary behavior has substantially increased the applications barrier to
entry. Moreover, even assuming counterfactually that market conditions today were basically
the same as they were in 1995, the *RPFJ* does not restore the competitive threat that middleware
products such as Netscape and Java represented in 1995 prior to Microsoft's unlawful conduct.
Thus, the *RPFJ* fails to meet either the DOJ's own standard or the more appropriate remedial
standard we outline later in this Comment.

As we observed in Section II, the computing industry in 1995 was in the process of
shifting towards Internet-based computing and web-centric applications. At that time, OS
entrants plausibly could have overcome network effects to create new competition in this market
because the Internet has begun to render the desktop OS less important to users. Navigator and

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[77] *CIS* at 3.
[78] *CIS* at 24.

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Sun's Java were at the center of this transformation, permitting users to easily access the Internet and Internet applications, while allowing ISVs to more easily write Internet applications.

Through its unlawful conduct, Microsoft succeeded in neutralizing these competitive threats to its OS monopoly power. Netscape Navigator has all but been eliminated as a competitive browser. Sun's original plan for Java as the means for providing a platform to write applications for many operating systems was undercut by Microsoft's unlawful actions that succeeded in converting the version of Java that applications programmers use to a proprietary Microsoft platform.

The shift toward the Internet is now virtually complete, but rather than witnessing a corresponding shift to a more competitive landscape, Microsoft has succeeded in entrenching its OS monopoly power and extending its dominance to the Internet. In particular, Microsoft now controls APIs and other standards, applications and platforms in browsing, Java and multimedia. Web content and other web-based applications are now optimized for IE.   In addition, contrary to the claims made by Microsoft at trial, there still is no meaningful competition for operating systems for desktop PCs.

Microsoft's more pervasive control over these various platforms means that independent software developers are even less likely to write to non-Microsoft platforms than was the case when the DOJ's case was launched. There is now no new Navigator or Java to challenge Microsoft's control. A new platform entrant must now be able to overcome an applications barrier for these additional applications as part of the process of overcoming the applications barrier for the desktop OS. Thus, the applications barrier to entry is higher now than it was before. As a result, the market landscape today is less favorable to competition than it was in 1995 prior to Microsoft's illegal conduct.

Thus, an effective remedy under the DOJ's standard would be one that is potent enough to enable OS competition in the face of this higher applications barrier, thereby restoring competition to its 1995 level. However, the *RPFJ* is not nearly so potent. First, the *RPFJ* does not enjoin all of the conduct that the court found to be in violation of the antitrust laws. Second, the *RPFJ* contains numerous loopholes and exceptions that render it ineffective. Third, the enforcement mechanism in the *RPFJ* is very weak and so will not deter further anticompetitive conduct by Microsoft. As a result, the *RPFJ* will not and cannot even revive the competition to that level which existed in 1995.

A. The *RPFJ* Does Not Prohibit All Unlawful Conduct

The DC Circuit clearly held that Microsoft's integration of middleware into the operating system by commingling of code for Internet Explorer and Windows was anticompetitive. Indeed, when Microsoft subsequently asked the DC Circuit whether, in effect, a sufficient remedy to the commingling could be met by allowing OEMs to remove the relevant icons, the Court denied Microsoft's "clarification" request in a *per curiam* order, noting in particular that '[n]othing in the Court's opinion is intended to preclude the District Court's consideration of remedy issues."[79] Yet, the *RPFJ* does not remedy in any way this exclusionary conduct. In particular, the RPFJ contains no prohibition on commingling of code and no requirement that Microsoft offer versions of its operating system that do not commingle middleware and applications code. As a result, the *RPFJ* does not reduce the applications barrier to entry and thus cannot even return the state of the middleware competition back to where it was in 1995, let alone implement the competition that would have emerged in the absence of Microsoft's unlawful conduct.

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[79] Order, *supra* at 1.

The court also held that Microsoft's deception of ISVs by making its Java tools incompatible with Sun's Java was anticompetitive. This deception caused ISVs to become locked-in to using Microsoft's Java tools and helped to neutralize Sun's momentum with Java. Again, the *RPFJ* does nothing to remedy this harm.

The failure of the *RPFJ* to prohibit Microsoft from binding Internet Explorer or other middleware—such as Windows Media Player and Microsoft Messenger—to the Windows operating system is especially noteworthy because it is in direct conflict with the findings of the Court of Appeals. In its opinion, the DC Circuit stated that the technical integration decisions of a monopolist are subject to the antitrust oversight.[80] It also found that Microsoft's technological integration of Internet Explorer into Windows violated the antitrust laws by commingling the code.

Yet, despite these clear signals from the DC Circuit, the Department's proposed remedy does not follow the court, but instead takes the opposite position. First, the definition of the operating system in Section VI.U. explicitly states that the software code that constitutes the operating system "shall be determined by Microsoft in its sole discretion." This explicitly exempts all future commingling of code and other forms of technological integration from oversight under the *RPFJ*. Thus, Microsoft can evade all restrictions on middleware simply by embedding the code in the operating system. Second, the *RPFJ* does not require separation of the operating system from middleware code, but instead only requires that Microsoft permit OEMs to hide end user access to the middleware on the desktop. And, as discussed below, even this condition is subject to a number of significant loopholes.

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[80] "Judicial deference to product innovation, however, does not mean that a monopolist's product design decisions are per se lawful." (253 F.3d at 65.)

The Senate testimony of Charles James contains no explanation of why the Department's approach is contrary to the Appeal Court findings. Indeed, Mr. James did not even include this commingling of code as one of the claims upheld by the Court of Appeals. He mentioned only the prohibitions on removing the Microsoft icons from the desktop.[81] Thus, he essentially adopted Microsoft's view in its clarification petition, not the response rejecting it by the Court of Appeals. In light of the DC Circuit's strong statement in response to Microsoft's petition, the failure to include a commingling provision in the *RPFJ* is inexplicable.

The absence of any prohibition on binding middleware applications to the operating system is a fatal defect of the *RPFJ*. The ability to bind middleware programs to the operating system gives Microsoft universal distribution of its middleware products. Microsoft can ensure that a copy of its middleware is distributed with every copy of the Windows monopoly operating system.

The universal distribution by Microsoft of its middleware is something that no other competitor will have or could hope to achieve. The importance of Microsoft's unlawful acts that gave it dominance in middleware is that middleware competitors can expect to acquire at most partial distribution while Microsoft gets universal distribution. As a result, the *RPFJ* will not lower or remove the applications barrier to entry that protects Microsoft's OS monopoly. ISVs that write applications to the exposed APIs of middleware programs will continue to have the incentive to write first, and in most cases only, to the Microsoft middleware program that is commingled with the operating system that they know is installed on virtually every PC that is manufactured, even if end users or OEMs chose to remove Microsoft's desktop icon and direct "end user access." In contrast, the benefits of writing to any other middleware are significantly

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[81] Statement of Charles James to Committee of the Judiciary (United States Senate), *supra* at 3.

lower, since no other middleware will ever gain universal distribution. Thus, the *RPFJ* will not reduce the applications barrier to entry.

Further, as found by the DC Circuit, OEMs have a very weak incentive to license and install a second version of a middleware program that already is included by Microsoft.[82] As discussed in Section II, this is because the additional customer support costs would be substantial. This was one of the reasons that Microsoft's conduct had an anticompetitive effect even though OEMs were free to license and install Netscape's web browser—OEMs did not want to support two web browsers. These support costs will exist even if the Microsoft icons are hidden because the Microsoft middleware nonetheless will continue to be invoked by applications under some circumstances (*RPFJ*, Section III.H.) and even if the end user does not realize that it is installed. Thus, hiding the Microsoft icon does not eliminate the need for the OEM to support the Microsoft middleware.

The fact that competing middleware products can try to convince OEMs to carry their products and OEMs can change defaults or "hide" the Microsoft middleware icons from end users does not reduce the applications barrier to entry. Hiding the middleware icons is not the same as removing the code and the *RPFJ* allows Microsoft to "encourage" users to change the default back to the Microsoft middleware. In particular, the *RPFJ* allows Microsoft after 14 days to continually and automatically (with its desktop sweeper) attempt to persuade end users to revert back to Microsoft middleware that has been replaced by a third-party application. (*RPFJ*, Section III.H.3.) This raises the probability that a significant number of users will switch to the Microsoft middleware, even if just to get rid of an annoying reminder. This further diminishes

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[82] *Findings of Fact* ¶¶159, 210, (84 F.Supp.2d at 49-50, 60-61), cited by the DC Circuit (253 F.3d at 61).

the incentives of rival middleware producers to pay OEMs to carry their products and ISVs to write for middleware programs that compete with Microsoft middleware products.

The incentive to carry a second middleware application is further reduced because there are not now, and are unlikely to be in the future, applications with which non-Microsoft middleware interoperates. This is simply the "chicken-and-egg" applications barrier to entry all over again. It will ensure that Microsoft maintains its monopoly, and will continue to allow Microsoft to leverage its dominance into middleware markets such as media players and instant messaging. This means that the applications barrier to entry will not be reduced by the *RPFJ*.

Two other aspects of the *RPFJ* also are relevant to the gauging the effect of the *RPFJ*'s failure to proscribe commingling on maintaining the applications barrier to entry. As will be discussed in more detail in Section IV.B. below, there are significant limitations on the middleware "protections" in the *RPFJ*. One drawback particularly relevant to the need for a commingling prohibition is the fact that the middleware icon provisions only apply when Microsoft has a competing product. (*RPFJ*, Section II.C.1. and C.3.). For example, suppose that a competitor creates new voice recognition middleware well before Microsoft. To delay this program from becoming a ubiquitous middleware platform until it gets its own product established (and bundled into the operating system), Microsoft can limit the ability of OEMs to display the competitor's icon or automatically launch the competitor's program, thereby preventing a competitor from getting a headstart.[83] Again, this flawed provision will make it harder for rival middleware to overcome the applications barrier to entry.

Similarly, there is a timing issue. Section III.H. of the *RPFJ* allows Microsoft to delay for twelve months the technical changes to Windows required to provide the OEMs with the

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[83] Of course, the other exclusions discussed later on that limit the middleware that is "protected" also help maintain the applications barrier to entry.

ability to remove the icons or automatic invocation of Microsoft middleware. Our understanding

is that such changes can occur much more rapidly than this. Thus, this provision simply provides

Microsoft with even more time to cement its control over the OS. This will lead to ISVs having

an even greater incentive to write applications to Microsoft middleware. This outcome will

further reinforce the applications barrier to entry, yet another reason why the *RPFJ* is not in the

public interest.

B. The *RPFJ* Contains Numerous Other Exceptions and Loopholes

The *RPFJ* is also shot through with exceptions and loopholes that limit its value even for

those unlawful actions that the *RPFJ* does address. First, many of the prohibitions contain

general language that reduces the provisions to nothing more than a general restatement of

antitrust law. These exceptions obviously make the provisions difficult to enforce in a timely

fashion. Second, the definitions and qualifications limit the scope of the coverage of the

prohibitions and open up significant loopholes in the proposed decree. For these reasons, the

RPFJ will not stop the violations and so is not in the public interest.

1. The *RPFJ*'s Test of "Reasonableness"

Various prohibitions in the *RPFJ* include exceptions that permit Microsoft to carry out

the conduct if it meets a test of "reasonableness." Although on the surface these carve outs

themselves may appear minor, in fact they eliminate the bright lines. Instead, these provisions

reduce virtually the entire *RPFJ* essentially to, at best, a restatement of the general antitrust "rule

of reason" standard, which prohibits unreasonable restraints of trade.

For example, Section III.F. of the *RPFJ* prohibits Microsoft from retaliating against ISVs

(or Independent Hardware Vendors) for "developing, distributing, promoting, using, selling, or

licensing" any software that competes with Microsoft's OS or middleware. But, this provision

also contains an exception that Microsoft may "place limitations on an ISV's development, use,

distribution or promotion" of rival software "if those limitations are *reasonably necessary* to and of *reasonable scope and duration* in relation to a bona fide contractual obligation of the ISV to use, distribute or promote any Microsoft software or to develop software for, or in conjunction with, Microsoft" (emphasis added).[84]

Thus, to establish a violation of this provision, the government must prove that the limitations are not "reasonably necessary" and not of "reasonable scope and duration." This sort of language is contained in statements of the antitrust rule of reason. Moreover, it is quite possible that this particular language in the *RPFJ* might be interpreted by a court as even more permissive than this. The benchmark for reasonableness under the rule of reason is competition and consumer welfare. The benchmark in the *RPFJ* is a "bona fide contractual obligation." The *RPFJ* is silent on why the latter term replaced the former concepts, and what distinctions, if any, a future court should make between a "bona fide contractual obligation" and an anti-competitive exclusionary requirement. Thus, in the best of circumstances, this wording is likely to lead to still more antitrust litigation over its meaning.

Section III.G. contains a similar type of exception with respect to exclusionary contracts with IAPs and Internet Content Providers (ICPs), stating that Microsoft may enter into bona fide joint ventures or joint development or service arrangements that will effectively allow IAPs and ICPs to enter into exclusivity agreements that otherwise would have been banned by the *RPFJ*. Section III.A. mandates that Microsoft not withhold certain monetary or other consideration from OEMs as retaliation for dealing with Microsoft competitors. But, the provision also contains an

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[84] As an additional protection against retaliation, Section III.B. requires "uniform license agreements with uniform terms and conditions." But at the same time, it allows for volume discounts for either the OS or any bundle of OS products, and it expressly allows Microsoft to offer any other manner of discounts. While those discounts must be "offered and available uniformly," Microsoft could creatively design discount programs to favor certain OEMs while still making the discount schedule "uniform." In addition, Microsoft is free to terminate an OEM's license on 30-days notice for any other reason.

exception that permits Microsoft to give consideration to OEMs that is "commensurate with the

absolute level or amount of the OEMs development, distribution or licensing" of Microsoft

products or services. At best, that exception would call for a rule of reason analysis, though this

provision too may be even more permissive.

These broad "reasonableness" exceptions clearly will make it difficult to enforce the

decree: every time the government suspects Microsoft's non-compliance, it must prove a new,

independent antitrust violation, complete with analysis of anticompetitive effect and efficiency

defense, and possibly even evidence of market power. These elements will take time – perhaps a

long time – to litigate, during which Microsoft can continue to operate unconstrained with its

monopoly power intact. As a result, the exceptions mean that not only does the *RPFJ* fail to

achieve immediate and certain relief, it also fails to eliminate litigation risk.

The Justice Department may say that such broad exceptions for reasonableness are

necessary to permit Microsoft to compete. That is, of course, the rationale for the rule of reason.

But, the considerations involved in a consent decree are somewhat different. In this case,

Microsoft has been found to have violated Section 2 of the Sherman Act for a significant period

of time in a variety of ways. To provide incentives for Microsoft to comply with the antitrust

laws and to restore the competition lost as a result of Microsoft's actions, an effective conduct

remedy must contain more than general guidance provided by the rule of reason. An effective

conduct remedy requires specific limits with bright lines that are easy to enforce. This *RPFJ* has

few of them, at best.

2. Limitations and Restrictions in the Coverage of the *RPFJ*

There are also significant restrictions on the coverage of virtually every prohibition in the

RPFJ. Taken together these restrictions will dramatically complicate and delay enforcement of

the *RPFJ*, greatly increasing the litigation risk. As the result, the *RPFJ* will be ineffective. We

provide some illustrative examples here, although this is only a sampling of the limitations and restrictions.

The *RPFJ* purports to give "protections" to competing middleware. For example, the definition of Non-Microsoft Middleware Products in Section VI.N. is limited to established middleware products—those for which at least one million copies have been distributed within the previous year. Thus, the *RPFJ* would not apply to middleware of an emerging competitor that has not yet gained broad distribution. Nor does it apply to all existing middleware products, for example, Microsoft's Windows Explorer. Nor does it apply to third parties who repackage Windows with competing middleware. And even in the case of middleware that has met the distribution hurdle, the applicability of the prohibition does not come into play until the competitor has sold one million units in a single year (as opposed to having sold one million units in total). This will create an enforcement delay as new middleware struggles to overcome anticompetitive Microsoft behavior while awaiting the magic threshold of one million in annual unit sales.

Section III. D. of the *RPFJ* requires that Microsoft disclose the APIs for Microsoft middleware. For "a new major version" of such software, the disclosure has to be made "no later than the last major beta test release." This proposed timing of disclosures makes them too late for rivals to be able to release competitive products contemporaneously. In addition, for new operating system products, the *RPFJ* requires disclosure only when there have been 150,000 beta testers. We understand that most beta tests are smaller than this. Further, nothing in the *RPFJ* limits Microsoft's ability to define a beta tester, thereby permitting the virtual absence of a timely release of the APIs. Collectively, these provisions ensure that Microsoft retains its first-mover advantage and thus a head start on any new middleware product.

Section III.D. also does not require Microsoft to disclose all the APIs for the Windows operating system, only the ones used by the Microsoft middleware. Thus, new middleware that relies on APIs not present in any of Microsoft's middleware would not have access to the necessary APIs. Moreover, even if Microsoft did rely on the relevant APIs, Microsoft could designate the middleware as a component of the OS to avoid disclosing the APIs.

Indeed, the definition of Microsoft Middleware contains a huge loophole that could eliminate all API disclosures. API disclosures apply only to APIs used by Microsoft Middleware as defined by Definition J (not Microsoft Middleware Products, as defined by Definition K). Only "trademarked" code is considered Middleware, according to provision (b) of Definition J. But, the definition of "trademarked" in Definition T specifically excludes software for which Microsoft only claims a trademark in the term Windows or something else and attaches that trademarked name to another name for which Microsoft lacks or has disclaimed trademark protection. For example, it appears that "Windows Media" is trademarked but "Player" is not.[85] If Microsoft lacks or disclaims trademark protection for "Media Player," then Windows Media Player would apparently not be considered Middleware. This then would imply that the APIs used by Windows Media Player would not be covered by the duty to disclose in Section III.D. The same argument could apply to Microsoft Internet Explorer, Microsoft Java Virtual Machine and Windows Messenger. This problem obviously is exacerbated by the fact that Definition U allows Microsoft "sole discretion" over the definition of the operating system. At the very least, these definitional questions create knotty issues that could be disputed by Microsoft in a compliance hearing before the court.

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[85] See, for example, http://www.microsoft.com/info/cpyright.htm, which lists only "Windows Media" as trademarked.

Another significant loophole is contained in Section III.J., which expressly allows Microsoft to withhold any APIs (as well as communications protocols) that relate to security, anti-piracy, anti-virus, encryption or authentication, digital rights management, keys, authorization tokens, enforcement criteria, etc. These are not obscure or minor exceptions, but instead relate to key applications that are at the forefront of Internet and network development efforts. These exceptions will prevent full interoperability between Windows and rival middleware.[86] In addition, this Section of the *RPFJ* gives Microsoft a laundry list of credible excuses for not complying with other parts of the decree. For example, Microsoft may claim that its Windows Media Player (WMP) contains protocols that relate to digital rights management. Yet, WMP is currently the dominant media player. Without access to the WMP APIs, the third-party development of middleware is that much more unlikely.

Even if none of the foregoing factors rendered the API disclosure ineffectual in repairing the harm to competitive middleware, Section III.J.2. of the *RPFJ* will discourage requests by ISVs and others for the APIs. This section permits Microsoft to demand that the ISV provide Microsoft with a "reasonable business need" for the APIs and permits Microsoft to test the software using the APIs to ensure its "compliance with Microsoft's specifications for use of the API or interface…" Microsoft thus will be in a position to delay and deny approval of the API use, to either destroy the competition or provide Microsoft with time to develop its own version before its rival. Consequently, ISVs in competition with Microsoft will be reluctant to seek the APIs to the extent it requires disclosing to their chief rival exactly what their next innovations will be.

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[86] Interoperability is not a defined term in the *RPFJ*, an oversight that will invite litigation and make enforcement more difficult.

Similarly, Section III. E. of the *RPFJ* requires that Microsoft "make available" any communications protocols that are used by a Microsoft client operating system to interoperate with a Microsoft server operating system. Other than providing that this disclosure be made "on reasonable and non-discriminatory terms," there are no provisions as to when Microsoft has to make such protocols available, nor does the *RPFJ* spell out what it means to make them "available."

Microsoft's history of "openness" is relevant. Dr. Rebecca Henderson, a DOJ expert witness, testified earlier that:

> Even when Microsoft purports to make something open, it has discretion over how rapidly and how effectively it communicates the necessary information. [*Findings of Fact* ¶¶] 391-393; GX 1931 (email thread about how Microsoft concealed the availability of the Java RMI class library on Windows). For example, many developers have found that even in the case of published APIs it is often critical to have access to additional information about the functioning of Windows in order to produce quality applications that run smoothly on Windows. [*Findings of Fact* ¶¶] 337-340, 401 (First Wave agreements); GX 2276 (quoting Microsoft witness Gordon Eubanks). Since any middleware that desires to be genuinely cross-platform must be able to work with Windows and with IE, the ability to withhold information in this way—or to use information as an inducement to ISVs to adopt Microsoft-controlled middleware—remains a potent tool. In the worse case, Microsoft can use its control over the Windows operating system to ensure that consumers who attempt to use alternative middleware are met with a 'jolting experience.' [*Findings of Fact* ¶¶] 160, 171; GX 334.[87]

At bottom, the issue here is whether the *RPFJ* can ensure that all the necessary APIs and protocols are exposed and that the documentation is complete (including source code where necessary) and provided on a timely basis. There is nothing in the *RPFJ* that provides any comfort on this score. Thus, no ISV will be able to rely on this information for the purposes of creating cross-platform middleware. ISVs and others will have to wait for the enforcement mechanism of the *RPFJ* to more precisely define the scope of Microsoft's required obligation.

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[87] Declaration of Rebecca M. Henderson, Public Redacted Version, April 28, 2000, ¶¶47-48.

But as we discuss below, the ISVs will likely be waiting for a substantial period of time before

any such precision in the *RPFJ* is provided by the court in a non-compliance hearing.

C. The *RPFJ* Contains a Defective Enforcement Mechanism

An additional problem with the *RPFJ* is its weak and defective enforcement provisions.

Accordingly, the decree does not eliminate litigation risk or speed relief. It also means that

Microsoft's incentives to comply with the decree will be greatly diminished.

By its terms, the decree is scheduled to last for only five years, but in fact, its effective

time period will be even shorter because of the various time lags already noted (and as further

discussed below). As just one example, the key provision requiring the disclosure of APIs for

Windows XP (Section III.D.) may not kick in until November 6, 2002. The sad irony is that the

time period of the decree will be shorter than the period of time between the beginning of

Microsoft's anticompetitive campaign and the implementation of the decree.

To be sure, the enforcement provisions of the *RPFJ* set up a structure for monitoring

Microsoft's conduct. First, Sections IV.B.-C. of the *RPFJ* create a Technical Committee

consisting of three experts in software design and programming plus a Microsoft Internal

Compliance Officer. The Plaintiffs and the Technical Committee are given various powers of

access to Microsoft documents, code, employees, and physical facilities and a mandate to resolve

any compliance issues informally. Second, if the Plaintiffs take issue either with the findings of

the technical committee or with the proposed informal resolution, the Plaintiffs may petition the

court for a more acceptable resolution.

The problems with this mechanism are so substantial that effective enforcement will

likely be too little too late. For example:

--The Technical Committee is made up of software programming experts and will not
include experts in the software business. Since most of the conduct by Microsoft that the courts

found to be illegal involved exclusionary contracts, and since much of the consent decree consists of prohibitions on this conduct, it is unreasonable to expect that software experts will be effective and efficient monitors of potential consent decree violations.

--Microsoft has half the votes on the Committee, which greatly reduces the effectiveness of monitoring provisions of the *RPFJ*.

--The Technical Committee also has no enforcement powers. Its role is limited to fact-finding and informing Microsoft and the Plaintiffs as to its findings. Moreover, the Plaintiffs are prohibited by a confidentiality agreement from using the findings of the Technical Committee in an enforcement proceeding. Thus, although the Plaintiffs will have the burden of proving a violation, they will lack the benefit of using the findings of the Technical Committee.

--Enforcement of the *RPFJ* will involve significant delays that will destroy its effectiveness. After the Technical Committee expresses its concerns, the Plaintiffs will have to independently gather evidence on the compliance violation. Then, the Plaintiffs will have take Microsoft back to court and make its case that Microsoft has violated the decree, taking into account the exceptions and unreasonableness standards. This enforcement process obviously will involve considerable time.

Microsoft also has an incentive to maintain its monopoly by erecting roadblocks to swift enforcement because any enforcement delay will accrue to Microsoft's advantage. As we discussed in Section II, the applications barrier to entry has protected Microsoft's monopoly. Thus, how the market has evolved over time affects the degree to which competition can emerge at any given moment. While the market is awaiting enforcement of the *RPFJ*, nascent technologies will die and potential new entrants will disappear from the scene, unable to overcome the applications barrier. By delaying enforcement, Microsoft decreases the likelihood that effective competition can realistically emerge.

Aggravating the problem of delays are the extremely weak penalties for non-compliance in the *RPFJ*. The only specific penalty spelled out in the decree is a ***one-time***, two-year extension of the five-year decree. This modest penalty will not deter Microsoft from engaging in unlawful acts but instead will allow the defendant to continue to enjoy the fruits of its monopoly. Under current market conditions, with an entrenched monopoly protected by the applications

barrier to entry, Microsoft's incentive is to delay justice for as long as it can. Indeed, that has

been Microsoft's conduct so far; witness its latest petition before the court to delay the remedy

phase for another several months.

Moreover, the weak penalty provisions apply only if the court finds that Microsoft has

engaged in "…a pattern of willful and systematic violations." (*RPFJ*, Section V.) Any further

relief and penalties are left unspecified, increasing Microsoft's ability and incentive to resist and

delay.

D. Conclusions: The *RPFJ* Will Not Restore Competition

For all these reasons, the *RPFJ* cannot restore competition even to the level that existed

prior to the onset of Microsoft's illegal exclusionary conduct. Even if in principle we could roll

back the clock to the period before the introduction and destruction of Netscape Navigator and

Sun's Java, Microsoft could continue to discourage the development and distribution of effective

middleware almost as freely and effectively as if there had been no trial and no *RPFJ*. Thus, as

low as the DOJ remedy standard is, the DOJ remedy fails to satisfy that standard. In any event,

we discuss in detail in the next section, rolling back the clock is impossible: Microsoft's

monopoly has become more entrenched since the beginning of the trial, while potential entrants

with new products that might compete with Microsoft thus face even higher hurdles in gaining

financial backing from venture capitalists.

The Justice Department might argue that these comments ignore the fact that the *RPFJ*

will implement immediate and certain relief, free of litigation risk, arguing that in the absence of

a settlement, the DOJ might contend that a full-blown remedy hearing process with inevitable

appeals would result in substantial delay in implementation. And if that were to happen, the

Justice Department might further argue that the resulting court-approved remedy may be more lenient than the *RPFJ*.[88]

We disagree on all counts. First, the enforcement of the *RPFJ* itself is fraught with substantial litigation risk. As discussed above, certain key provisions do nothing more than restate the antitrust rule of reason. These provisions would require the government to prove a new antitrust violation in an enforcement action. All of the other provisions contain significant exceptions and loopholes that will create litigation risk in an enforcement action. These provisions are difficult to enforce because they raise knotty definitional issues and provide Microsoft with significant defenses. The fact that the enforcement mechanism is defective further raises litigation risk. Indeed, it is not clear that *effective* enforcement is possible under the *RPFJ*.

Second, in our view, the potential litigation delay is an inadequate justification for the weakness of the *RPFJ*. Waiting an extra year or even two to obtain an effective remedy (once all appeals have been exhausted) is better than implementing a *RPFJ* that can only be characterized as a "pseudo-remedy." In any event, certain key provisions of the *RFPJ* involve significant delays. In particular, the requirement in Section III.H. to allow end users and OEMs to remove icons is delayed for 12 months. The requirement to disclose and document Windows XP's APIs to ISVs and other potential middleware providers in Section III.D. does not take effect for 12 months. The disclosure of communications protocols is delayed for 9 months. And, as discussed above, the reasonableness test and other exceptions will lead to adjudication delays in any enforcement actions.

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[88] Statement of Charles James to Committee of the Judiciary (United States Senate), *supra*.

In recent statements, Assistant Attorney General James has attempted to justify this pseudo-remedy on the grounds that the DC Circuit significantly narrowed the case.[89] *But the DOJ did not lose the case at the DC Circuit*. To the contrary, the government prevailed on the Section 2 monopoly maintenance count, which is the core part of the complaint. The other counts were far less important and the conduct attacked in the tying and monopoly leverage claims provided the basis for liability for monopolization. The government won a great victory in this important case. That victory deserves an effective remedy that restores competition to this key industry in our modern economy.

V.   The *RPFJ* Should Have Applied A More Appropriate Remedial Standard

In the previous section, we explained how the Justice Department's *RPFJ* does not satisfy the Department's own claimed goal of restoring competition to the level existing before the initiation of Microsoft's anticompetitive conduct. In this section, we explain why the Department's goal is not the proper standard by which to evaluate an antitrust remedy for illegal monopoly maintenance. The DOJ has set too low a standard.

A. Restoring Competition

The requirement in United Shoe that the remedy deny the defendant the fruits of its monopoly underscores why the standard set forth by the Department in its *Competitive Impact Statement* (at 3) clearly is incorrect. The standard in the *CIS* is simply to restore the competitive landscape as it was in the OS market in 1995 before Microsoft's unlawful conduct began. Of course, unlike the situation in 1995, Netscape has been destroyed and Java has lost its head start. They have now been replaced by Microsoft's own offerings. In order both to restore competition

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[89] Id.

and deny Microsoft the fruits of its anticompetitive conduct, the court should restore competition

to the condition it would have achieved ***by now*** in the absence of Microsoft's unlawful conduct.

More broadly, the United Shoe standard requires the remedy in a monopolization case to

terminate the monopoly. Clearly, the *RPFJ* fails to satisfy that standard as it leaves Microsoft's

dominance intact. As set forth below, the additional conduct provisions suggested by the nine

states that are not party to the *RPFJ* would at least give competition in the OS market a

reasonable chance to work, particularly if also supplemented with an automatic structural remedy

for significant violations of a revised decree. A structural remedy that actually terminated the

Microsoft's OS market power *at the outset* would be even better because it would directly and

immediately create the OS competition lost as a result of Microsoft's exclusionary behavior.

B. Need for a Remedy Hearing

At the same time that it sets too low a remedial standard, the *RPFJ* also attempts to short

circuit the Tunney Act process of determining the whether the public interest would be served by

setting a higher standard. The DOJ's *RPFJ* implicitly assumes that very little real competition

was lost.[90] By contrast, as our discussion in Section II makes clear, the competitive impact of

Microsoft's unlawful behavior has been significant and significantly more competition would

exist in the OS market today were it not for that conduct.

At a minimum, this court should evaluate through factual inquiry and an evidentiary

record what that anticompetitive impact has been. This hearing process would be consistent with

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[90] For example, the *CIS* (at 11) notes that Navigator and Sun's Java "had the potential to weaken the applications barrier" and (at 16) discusses "the process by which these two middleware technologies could have facilitated the introduction of competition."

the DC Circuit instruction to the District Court to evaluate the actual loss in competition in fashioning relief.[91]   The passage of time since the closing of the trial record provides the court with the ability to explore and resolve this issue in a remedial hearing. The *RPFJ* not only would cut off such an inquiry, but it also simultaneously rejects the need for any such investigation by announcing a clearly inappropriate standard for assessing its adequacy. For this reason alone, the *RPFJ* fails the public interest test. Standing alone, the *RFPJ* would deprive this court of the ability to determine whether the *RPFJ* is in the public interest, or whether a stronger remedy is need to repair the loss in competition. Thus, we agree with the court's decision to evaluate the *RPFJ* in tandem with the hearings on the remedy proposal of the Litigating States and in comparison to that alternative remedial proposal.

Whatever it is, the remedy in this case will have an ongoing, long-run impact on the course of the computer software industry, a key sector of our modern economy. Too weak a remedy will not repair the damage to the market and restore competition. Too weak a remedy will fail to discourage Microsoft from engaging in future anticompetitive behavior. Too weak a remedy will discourage new competitors from trying to attack Microsoft's illegally maintained monopoly while encouraging other "new economy" firms with monopoly power to maintain their monopoly positions with anticompetitive exclusion.

C. Evaluating the Impact on Competition

Simply because the Navigator and Sun's Java competition were nascent competitors does not lead logically to DOJ's apparent inference that there has been not much competitive harm from Microsoft's actions. These threats were nascent in 1995 but now six years have passed, a period of a shifting paradigm in which they would have grown to maturity. We believe that after

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[91] 253 F.3d at 79-80, 106-107.

this court conducts a remedy hearing, the court will conclude, as we have, that Microsoft's

extensive unlawful acts have had a significant anticompetitive impact on competition. In

particular, a review of the facts would take the following points into account.

First, we know that nascent competitors can lead to significant competition. We know

now with much more certainty than in 1995 that the Internet has transformed the way we use

PCs. It was this occasion of the paradigm shift that offered the opportunity to reduce, if not

eliminate, Microsoft's dominance of operating systems.

Second, we know that Netscape Navigator and Sun's Java were at the center of this

transformation in the computing paradigm. By neutralizing the threats of both Navigator and

Sun's Java, Microsoft maintained its Windows operating system monopoly. As a result of its

unlawful conduct, Microsoft has gained much greater control over computing in this new

paradigm.

For example, MS Internet Explorer (IE) is now the dominant browser. As such, web

content and other applications are now optimized for the IE standards controlled by Microsoft

instead of Navigator or any other browser, and no other browser offers a plausible alternative as

a platform for applications developers. Accordingly, barriers to entry for a new OS are now

higher than they were in 1995. Similarly, Microsoft's Java implementation has become well

established. Today many developers have acquired expertise in the use of Microsoft's Java tools

and would need to bear switching costs to begin using Sun's Java tools. Consequently, Sun's

Java has lost significant momentum that it by itself is unlikely to recover.

Third, as a result of the evidence contained in the internal discussions among the

Microsoft senior management, we know that Microsoft itself was greatly concerned about losing

its monopoly power and control over the market during this paradigm shift and about the key

role of Netscape Navigator and other middleware in this transformation. In and of itself, this concern is evidence that while nascent, the middleware threat would likely have become a substantial competitive constraint on Microsoft. We have previously (in Section II) cited Bill Gates' own concern that Navigator would "commoditize" the supply of operating systems. We have also noted that other Microsoft executives believed that IE could not beat Navigator on the merits.

Fourth, we know that in desktop operating systems, monopoly power has not been fleeting. Microsoft has maintained its monopoly over the course of the paradigm shift. The court has found that Microsoft engaged in a series of unlawful acts with the purpose of maintaining this monopoly. Thus, it makes no logical sense to assume that the illegal conduct failed to have its intended anticompetitive effects.

Fifth, we know that Microsoft has used the past six years to entrench the monopoly power of the Windows operating system and gain greater control over computing in the new Internet paradigm. In Section II, we noted that Microsoft's new OS, Windows XP, has technologically bound key Internet-gateway applications such as Windows Media Player to the operating system and its various browsers. In this way, Microsoft discourages software developers from writing their programs to competing middleware platforms. This also makes it harder for operating system competition to emerge.

Sixth, we know that as Microsoft's monopoly has become more entrenched, no alternative middleware threat has yet emerged that can match the significance of the threats posed by Navigator and Sun's Java in 1995. And, as we noted in Section II, the next middleware threat will face an even more imposing applications barrier now that Microsoft controls APIs and other standards, such as those for handheld computers, applications and platforms in browsing,

Java and multimedia. Independent software developers are now even less likely to write to non-Microsoft platforms than at the close of the trial record. A new platform entrant must now be able to overcome an applications barrier for these additional applications as part of the process of overcoming the applications barrier for the desktop OS.

All in all, there is ample reason to believe that Microsoft's actions had substantial anticompetitive effects. By holding a remedy hearing, these effects can be made part of the record.

D. The Need for an Effective Remedy

In this environment, the *RPFJ* cannot restore the competition lost as a result of Microsoft's exclusion. That is because the potent threats that existed in 1995—most importantly, those posed by Navigator and Sun's Java—are no longer competitive factors and Microsoft's monopoly has become entrenched and its power more pervasive. As Professor Romer has observed:

> There is no way to revive the threat posed by the specific technologies that Netscape and Sun were developing, nor to recover the innovative efforts that were deterred by Microsoft over the last five years. The market has moved on.[92]

To repair the loss in competition and deter future anticompetitive conduct, a remedy must restore the degree of competition that would have existed today but for Microsoft's exclusionary conduct. As stated by another one of the DOJ's economic experts on remedy, Professor Shapiro, the remedy should operate:

> … first, to prevent a recurrence in the future of conduct by Microsoft akin to its past anti-competitive behavior, and second to affirmatively bolster competition, which Microsoft has stifled…Given the goal of enabling, but not compelling, competition to Windows in the market for operating systems, it is important to identify, as best we can, the likely sources of such competition in the foreseeable future, both to make sure that Microsoft cannot blockade operating systems

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[92] Romer Declaration ¶7.

rivals, and to inform any remedial provisions <u>designed positively to foster</u> operating system competition.[93]

Contrary to the DOJ's wishful thinking, the *RPFJ* cannot simply turn back the clock to 1995 and rerun history again, this time with Microsoft obeying the antitrust laws. To serve the public interest, the remedy must restore the degree of competition that would have existed today in the absence of Microsoft's anticompetitive conduct since 1995. To evaluate this loss in competition that must be repaired, the court must hold a remedial hearing, not simply accept the assertions of Microsoft and the DOJ that the loss in competition has been minimal, irrelevant or unknown.

We believe that after such a hearing, the court will conclude that a more effective remedy also is needed to provide deterrence against a recurrence of anticompetitive conduct by Microsoft. Under the DOJ standard, if Microsoft quickly squashes a nascent middleware competitor when it comes on the scene, the antitrust penalty will be small because of the small impact that competitor has achieved at the time of its demise. This rule will not deter but rather will simply encourage an even more rapid anticompetitive response to new entry. The more quickly Microsoft acts, the lower will be the implied penalty, because the more likely it is that the squashed rival would not yet have had any significant competitive effect. This remedial framework would create a vicious cycle of anticompetitive conduct and monopoly entrenchment. In the end, it would swallow up the liability standard and destroy deterrence, as monopolists find that they have little to fear from antitrust remedies.

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[93] Shapiro Declaration at 3 (emphasis added).

VI.   More Effective Alternative Remedies

In the Amicus Brief that we filed with this court,[94] we offered the court our views on the most effective remedy to the anticompetitive harms resulting from Microsoft's illegal actions. While the DC Circuit only partially affirmed this court's decision -- in particular, the core of the Section 2 violations -- it still is our view that the panoply of illegal efforts of Microsoft to maintain its OS monopoly power requires the structural remedy we previously suggested.

A. The "Full Divestiture" Structural Remedy

We urged Judge Jackson to consider what we called "full divestiture" as the best means for addressing all the remedial goals in this case. We reiterate our recommendation to this court. The "full divestiture" remedy would contain two elements. First, it would divide Microsoft's businesses into two parts: the operating system and the applications, with the applications residing in a completely independent entity.[95] We have called this "functional divestiture." Second, our proposed remedy would dissolve the monopoly of the operating systems. The dissolution of the Windows monopoly would be accomplished by effectively "cloning" the current Windows division into two additional companies, so that three distinct firms would have a full license to all the intellectual property of Microsoft's current OS division. We have referred to the functional divestiture combined with the dissolution of the Windows monopoly as "full divestiture."

By placing the Microsoft applications such as Office into an entity ("AppsCo") that is financially distinct from any operating system entity, the remedy ensures that AppsCo will have the incentive to provide applications for other operating systems, such as Linux and the Mac OS.

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[94] Litan, Nordhaus and Noll, *supra* note 3.
[95] Judge Jackson's divestiture remedy involved only this functional divestiture. United States v. Microsoft Corp., 97 F. Supp. 2d 59, 64-65 (D.D.C. 2000) ("Final Judgment").

That is, Microsoft will no longer be able to ensure that its applications run only on Windows, thereby depriving Microsoft of critical means of raising and maintaining the applications barrier to entry to rival operating systems. By creating three separate operating systems entities ("WinCos"), the proposed remedy acts to ensure that at the outset, there will be competition in the sale of operating systems.

Why three OS entities? The experience of having just two competitors in a market, such as the duopoly that used to exist in the wireless telecommunications business before the number of licenses was expanded, suggests that having only two competitors in a market is not a reliable protection against monopoly. Significant price and/or quality competition does not generally appear until there are at least three firms. Moreover, in light of the significant barriers to new entry into the OS market, having three competitors provides a margin of safety. With only two competitors, if one stumbles and fails, the market would then revert back into a full-blown monopoly. In addition, with three competitors, the market is less likely to tip back to an operating system monopoly.

Full divestiture would completely meet the remedy goals in the case:

--It would immediately (upon a final verdict) create competition in the OS market. Because even a small increase in the relative price or quality by one of the Windows companies could easily have a substantial impact on its sales, the three-way company split would stimulate price and quality competition in operating systems.

--Full divestiture would essentially nullify the applications barrier to entry. The barrier would be removed because, at the outset, developers would be able to write programs for all of the WinCos simultaneously. None of the WinCos would have an initial installed base advantage.

--Full divestiture would allow the market to develop unfettered from judicial oversight or other forms of intrusive regulation that accompany a conduct decree. In a matter this complex, a conduct decree will inevitably require that the court at some point become mired in various complex claims, such as whether a particular API is really covered by one of the exceptions in the decree, or that its disclosure

is more difficult than initially contemplated, or that in any event, a waiver is justified in light of the benefits obtained. Even if the court sets deadlines, Microsoft can be expected to provide testimony from its managers claiming "unexpected" technical difficulties or that bugs have slowed the company down. It will be difficult for the court to sort out fact from exaggeration when such disputes arise. And the court will inevitably become the analog to Judge Greene's oversight of the AT&T decree, generating full employment for lawyers, economists, and software engineers.

Certain criticisms of the full divestiture option have been raised, none of which we believe should hold back implementation of full divestiture.

The first criticism is that the creation of multiple Windows companies would "fragment" what is the Windows "standard" and lead to incompatible operating systems that would raise costs to ISVs and users.[96] On closer analysis, this criticism is not compelling. At bottom, this fragmentation critique is actually an attack on any remedy that fosters OS competition. It is competition, not the structural remedy, that arguably leads to fragmentation. And the argument simply assumes that competition would lead to significant OS incompatibilities among the three WinCos. This assumption is unwarranted. In the short run, there would not be a fragmentation problem because each of the Windows companies would be using the same existing APIs. Over the longer run, the economies of scale and network externalities (i.e., the large installed base of current Windows users) would create a powerful tendency for the WinCos to maintain a high level of compatibility and interoperability, if not an absolutely unitary OS standard. This would allow applications software developers to write programs for each operating system with minimum additional porting costs. Meanwhile, to the extent innovation in operating systems occurs, it is likely that new features would be added in "modular" fashion, so that the current

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[96] See, for example, Stan Liebowitz, *A Fool's Paradise: The Windows World after the Forced Breakup of Microsoft* (February 24, 2000) (http:wwwpub.utdallas.edu/~liebowit/msstuff/newact.htm).

core aspects of the operating system would retain their common APIs.[97] In any event, if

innovation is the "price" for fragmentation, then that is a *good* outcome because it will be

competition at work.

The second criticism is that the break up of a unitary company like Microsoft would be

disruptive and lead to redundancy in operating units. We agree that some disruption would be

involved in the divestiture and that there would be some redundancy among the WinCos.[98]

However, we believe that the resulting increase in competition and elimination of the ongoing

need for the court to monitor, if not regulate, Microsoft makes these costs worth bearing. In any

event, Microsoft has likely exaggerated these costs. For example, a writer for the *Wall Street

Journal* reported that "at least a dozen top managers" at Microsoft are of the view that the

company should be reorganized into smaller, competing units as a way of fostering more rapid

innovation.[99] In addition, relative to other firms, divestiture here is easier to implement because

Microsoft's key assets are embodied in its intellectual property, which can be shared rather than

divided. This issue can be examined in more detail at the remedy hearing.

A related criticism might be that while the intellectual property may be easy to divide

among the WinCos, allocating the employees to the three entities in a way that will maintain

their viability would be more problematic. Here, too, these concerns overstate the realistic

difficulties of implementing this remedy. The critical employees may be higher-level managers,

among whom there is enough shared knowledge about the development and deployment of new

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[97] A more extensive discussion of the flaws of the fragmentation claim can be found in Robert J. Levinson, R. Craig Romaine and Steven C. Salop, *The Flawed Fragmentation Critique of Structural Remedies in the Microsoft Case*, ANTITRUST BULLETIN (Spring 2001) at 135-162.

[98] There would not be significant redundancy between the AppsCo and the operating system companies because the way in which Microsoft is organized along functional lines. See Brier Dudley, *Microsoft Does Its Usual Spring Shuffle*, Seattle Times (Apr. 6, 2001) at C1.

[99] David Bank, Breaking Windows: How Bill Gates Fumbled The Future Of Microsoft (Free Press 2001), at 182-183.

operating systems to permit them to manage the new companies. Further, there is likely to be enough lead time between adoption of the remedy and its implementation to ensure symmetry in knowledge among the managers of the WinCos. Finally, we suspect that other companies, notably the remaining major middleware, netware and applications firms, are likely to jump at the chance to acquire a license on reasonable terms for the current version of Windows. At a minimum, before the divestiture remedy is written off for this reason, an inquiry into the willingness of others to license Windows ought to be made.

We continue in any event to believe that a structural remedy of the kind just described is most capable of repairing the competitive harm resulting from Microsoft's illegal behavior. That remedy is much more likely to result in a reduction in the applications barrier to entry confronting new operating systems than a conduct remedy. This is so because it would immediately introduce competition into the OS market. Thus, ISVs would automatically be writing applications that are compatible with multiple OS competitors' products. By introducing real competition into the OS market, the structural remedy will be much more self-enforcing than would a conduct remedy.

B. Litigating States' Proposed Remedy

If the court rules out the "full divestiture" remedy, the conduct remedy recently proposed by the Litigating States certainly surpasses the Justice Department *RPFJ* by an order of magnitude and offers the promise of real competitive benefits. The LS proposal addresses all the antitrust violations and closes the gaping loopholes in the *RPFJ*. The LS proposal reduces the applications barrier to entry to a level closer to what would have occurred in the absence of Microsoft's exclusionary behavior. The LS proposal also greatly improves the mechanism for

effectively enforcing the decree and increases Microsoft's incentives to comply. Comparing the

LS proposal to the *RPFJ* demonstrates why the *RPFJ* is not in the public interest.

1. Addressing All Violations, Eliminating Exceptions and Closing Loopholes

The Litigating States proposal addresses all the violations found by the DC Circuit,

unlike the *RPFJ*. The LS proposal directly remedies the commingling violation by proscribing

the binding of any middleware code to the Windows code (or alternatively, by requiring that

Microsoft to make available an otherwise identical version of Windows that does not include the

middleware). More generally, the LS definitions make it more difficult for Microsoft to define

middleware as part of the Windows OS. The proposal also requires Microsoft to include a Sun-

compliant version of Java in Windows.

Further, the LS proposal eliminates the most serious exceptions and closes the most

egregious loopholes in the *RPFJ*. For example, we noted previously that the *RPFJ* permits

Microsoft to terminate an OEM's license for Windows on 30 days notice. In the LS proposal,

Microsoft must provide 60 days notice, provide the licensee with the reason for the termination,

and provide the OEM with the opportunity to cure the problem. In addition, unlike the *RPFJ*, the

LS proposal applies to third-party packagers as well as OEMs, thus further restricting the

avenues by which Microsoft can harass distributors of rival middleware.

The LS proposal acts to prevent Microsoft from using the same exclusionary strategies to

entrench its monopoly power by the newest type of Internet middleware. For example, the entire

".Net strategy" of Microsoft—by which XP users are directed to the Internet to use a variety of

Microsoft applications—will be defined as middleware by the LS proposal. As a result, OEMs

(and others) will have the option of licensing the Windows OS without the default direction to

the Microsoft applications. Similarly, under the terms of the LS proposal, Microsoft must offer a

version of Windows to OEMs and others that does not bind Windows Media Player and

Windows Messenger to the Windows OS. In this way, developers of this kind of web-centric software that could develop into middleware will not face the same distributional hurdles that Microsoft placed in Navigator's way.

2. Reducing the Applications Barrier to Entry

Unlike the *RPFJ*, the LS proposal actually acts to repair the competitive harm by including four provisions that would reduce the applications barrier to entry. This is very important because only by reducing the applications barrier to entry can the loss in competition be repaired.

First, the proposal requires that Microsoft license the source code for IE. This means that third parties can transform IE into a true independent middleware platform to replace Netscape Navigator, while helping to repair the loss in competition caused by Microsoft's destruction of Netscape Navigator. This is a much more effective remedy than simply hoping that another middleware platform will appear, as the *RPFJ* does.

Second, the LS proposal requires that Microsoft distribute a Sun-compliant version of Java with Windows and with IE. This provision will help to repair the loss in competition caused by Microsoft's anticompetitive conduct towards Java that was affirmed by the DC Circuit. Although this remedy does not offset the loss in momentum suffered by Java from Microsoft's exclusionary conduct, it will help Java to become better established as a middleware platform. As a result, it will encourage software developers to write applications in Sun's Java.

Third, the LS proposal requires that Microsoft license its Office suite of applications to other vendors, who then could port Office to competing operating systems. This provision should also reduce the applications barrier to entry by giving rival operating systems access to this important application. This porting provision also will prevent Microsoft from repeating its

efforts to compel Apple to withhold support for competing middleware by threatening to terminate the production of Office for the Mac OS.

Fourth, the LS proposal requires that upon a release of a new version of its operating system, Microsoft must continue to license and support the predecessor versions of the OS. This provision will prevent Microsoft from raising the applications barrier to entry by withholding the mandatory timely disclosure of APIs to would-be middleware contenders. In the absence of this provision, Microsoft could frequently offer new, slightly modified versions of the OS that render the middleware based on the predecessor APIs unworkable with the new version. Middleware developers would be discouraged if they knew that Microsoft could raise their costs simply by slightly revising the operating system code in a way that requires the middleware to be significantly modified. The LS proposal constrains the effect of this conduct by permitting the OEMs to continue to offer the previous version of the OS that is compatible with the rival middleware product.

3. Improving the Enforcement Process

The LS proposal also adds teeth to the enforcement process. Importantly, the proposal streamlines the indefinite and laborious process of investigating violations of the remedy. Of particular significance is the requirement that a Special Master be appointed to conduct investigations in response to complaints and propose resolutions on an expedited basis. Moreover, the findings of the Special Master may be used by the complainants in other proceedings, unlike any findings by the Technical Committee in the *RPFJ*.

In addition, the penalty for a violation is not merely an extension of the term of a settlement (as in the *RPFJ*) that offers little in the way of constraints on Microsoft's behavior to begin with. In the LS proposal, if a violation involves Microsoft middleware, the court can order

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Microsoft to license the source code of that middleware. In the case of a pattern of violations, Microsoft also could be ordered to pay substantial civil penalties.

C. Recommended Modifications

If the court feels constrained to adopting a conduct remedy, then the proposal of the Litigating States clearly is far superior to the *RPFJ*. However, we think that it could be improved further by making several modifications.

First, although the more severe penalties in the LS proposal will increase Microsoft's incentives to comply relative to the *RPFJ*'s compliance incentives, we prefer a more significant and definitive penalty for a pattern of material non-compliance: one that would require the court to order a "full divestiture" in the event of a pattern of material non-compliance. We favor this stronger "stick" because the rapid pace of change in the computer industry means that a failure of the remedy to fully deter anticompetitive conduct can result in substantial and ongoing harm to competition and innovation.

Second, we would strengthen the enforcement mechanism by requiring MS to self-certify compliance every six months. This self-certification procedure adds teeth to Microsoft's antitrust compliance program. It will increase Microsoft's incentives to comply with the order because false certification would justify more severe penalties.

Third, in recognition of the rapid pace of change and the strength of network effects, the term of the decree should be left open. After five years, the decree should be reviewed to see whether it can be terminated or, alternatively, needs to be modified to make it stronger and more effective. Our concern is that if the conduct remedy fails to lead Microsoft to fully comply and compete on the merits, its current monopoly position will only become more entrenched over time. If the review concludes that the LS remedy has not been effective, the court could then

extend the term, modify the conduct provisions in some way, or order a divestiture.

Alternatively, if robust competition has become established, the decree could be terminated.

VII.   Conclusion

Antitrust history contains important cautionary signals about the efficacy of conduct

remedies, most notably, United Shoe itself. The government successfully challenged the

practices of United Shoe, leading to a conduct decree in 1922.[100] When that decree proved

ineffectual, the government successfully challenged United Shoe for maintaining its illegal

monopoly.[101] This time, the government sought to divide United Shoe into three different

companies.[102] Judge Wyzanski in the main disagreed, instead ordering extensive and intrusive

conduct remedies requiring on-going judicial oversight.[103] Over time, it became clear that the

conduct remedies failed to generate a more competitive marketplace and the government asked

the court to break United Shoe up into two independent companies.[104] When Judge Wyzanski

refused, the government appealed, and in 1968, the Supreme Court intervened and unanimously

made clear that a structural remedy was the preferred remedy for monopolization cases.[105]

In United Shoe, the conduct remedy failed to restore competition for decades after the initial

finding of monopolization. In the interim, consumers lost the benefits that more decisive action

would have generated.

Given the rapid pace of change in the computer industry, a long time lag between the

initial detection of the problem and its ultimate resolution will impose substantial costs on

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[100] United Shoe Mach. Corp. v. United States, 258 U.S. 451 (1922).
[101] United States v. United Shoe Mach. Corp., 110 F. Supp. 295 (D.Mass. 1953), aff'd, 347 U.S. 521 (1954).
[102] 110 F. Supp. at 348.
[103] Id. at 347-348.
[104] 266 F. Supp. 328 (D. Mass. 1967).
[105] 391 U.S. 244.

consumers in terms of higher prices and lost innovation. Worse, unlike manufacturing

industries, over time Microsoft's monopoly power will become even more entrenched (as a result

of network effects, the applications barrier to entry, and consumer lock-in) if the LS proposal

fails to reinvigorate competition. This will make it all the more difficult to implement an

effective remedy in the future. At a minimum, an automatic 5-year review of the efficacy of the

LS proposal will help ensure that the courts and consumers do not become victims of the passage

of time if the conduct remedy fails.

Ultimately, however, it is vital that the court weigh alternative remedies before signing

off on an adequate remedy that fails to protect the interests of consumers in this industry, and

indeed because of the importance of this industry to overall economic growth, of the economy as

a whole.

Respectfully submitted,

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