I have been a strong supporter of the Bush Administration and its Antitrust Division. But I am also a strong supporter of the Court of Appeals decision in this case, and even if I were not, the legal conclusions and factual findings sustained in that opinion must be treated as authoritative for this Tunney Act proceeding. In my view, it would set a terrible precedent contrary to the public interest if a unanimous en banc opinion that found the most important firm in our economy committed repeated serious antitrust violations lacking any procompetitive or technological justification, as the opinion here did, received only the largely meaningless enforcement provided by the proposed settlement between Microsoft and the United States.

I submit this Tunney Act comment as a professor of antitrust law and because of my interest in the proper development of antitrust law. I have not been paid by anyone else to work on the Microsoft case, and do not submit this comment on behalf of any other party. I am instead submitting this filing pro bono, on behalf of the public interest. I am a Professor of Law at Harvard Law School, where I teach antitrust law, but submit these comments in my personal capacity, and the views expressed here are not offered on behalf of, nor intended to express the views of, Harvard University.

The key finding of the district court, which I think has not received enough attention, is that, to foreclose its rivals, Microsoft engaged in technological bundling of other software into its operating system that not only had no procompetitive or technological justification, but actually worsened the technological performance of its own products. The district court found Microsoft’s technological integration made its product work more slowly:

“[A]ccording to several standard programs used by Microsoft to measure system performance, the removal of Internet Explorer by the prototype program slightly improves the overall speed of Windows 98. Given Microsoft's special knowledge of its own products, the company is readily able to produce an improved implementation of the concept illustrated by

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2 The points addressed in this memo apply both to the initial proposed settlement, and the revised proposed settlement to which nine states have agreed.
Felten's prototype removal program. In particular, Microsoft can easily identify browsing-specific code that could be removed from shared files, thereby reducing the operating system's memory and hard disk requirements and obtaining performance improvements even beyond those achieved by Felten.”

Nor was this reduction in speed compensated for by increased stability or security. To the contrary, the district court found that Microsoft’s technological bundling made its operating system both more prone to crashing and more susceptible to virus infections.

“Microsoft has harmed even those consumers who desire to use Internet Explorer, and no other browser, with Windows 98. To the extent that browsing-specific routines have been commingled with operating system routines to a greater degree than is necessary to provide any consumer benefit, Microsoft has unjustifiably jeopardized the stability and security of the operating system. Specifically, it has increased the likelihood that a browser crash will cause the entire system to crash and made it easier for malicious viruses that penetrate the system via Internet Explorer to infect non-browsing parts of the system.”

A fortiori, the district court found that those who did not want Internet Explorer suffered worsened technological performance from Microsoft’s bundling because they were saddled with “an operating system that runs more slowly than if Microsoft had not interspersed browsing-specific routines throughout various files containing routines relied upon by the operating system” and that meant “performance degradation, increased risk of incompatibilities, and the introduction of bugs.”

The district court also found that, in addition to conferring no technological benefit on its own products, Microsoft’s bundling degraded the technological performance of rival products. The court concluded that Microsoft’s:

“actions forced OEMs either to ignore consumer preferences for Navigator or to give them a Hobson’s choice of both browser products at the cost of increased confusion, degraded system performance, and restricted memory. . . . Microsoft forced those consumers who otherwise would have elected Navigator as their browser to either pay a substantial price (in the forms of downloading, installation, confusion, degraded system performance, and diminished memory capacity) or content themselves with Internet Explorer. . . . None of these actions had pro-competitive justifications.”

Microsoft was further found guilty of other technological manipulation that inflicted

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4 Id. at 54 (emphasis added).
5 Id. at 53 (emphasis added).
6 Id. (emphasis added).
7 Id. at 111.
technological degradation on other products.

“Microsoft went beyond encouraging ICPs [Internet Content Providers] to take advantage of innovations in Microsoft's technology, explicitly requiring them to ensure that their content appeared degraded when viewed with Navigator rather than Internet Explorer.”

Indeed, the district court even found that Microsoft engaged in efforts that resulted in technological degradation for software users generally.

“Finally, by pressuring Intel to drop the development of platform-level NSP software, and otherwise to cut back on its software development efforts, Microsoft deprived consumers of software innovation that they very well may have found valuable, had the innovation been allowed to reach the marketplace. None of these actions had pro-competitive justifications.”

The findings that, to foreclose rivals, Microsoft engaged in technological integration that had no procompetitive or technological justification were fully vindicated by the Court of Appeals. That Court concluded:

“Microsoft proffers no justification for two of the three challenged actions that it took in integrating IE into Windows--excluding IE from the Add/Remove Programs utility and commingling browser and operating system code. Although Microsoft does make some general claims regarding the benefits of integrating the browser and the operating system, it neither specifies nor substantiates those claims. Nor does it argue that either excluding IE from the Add/Remove Programs utility or commingling code achieves any integrative benefit. . . . Microsoft failed to meet its burden of showing that its conduct serves a purpose other than protecting its operating system monopoly.”

Further, the Court of Appeals also repeatedly found that Microsoft engaged in a series of other anticompetitive acts that foreclosed the freedom to choose the best technology and had no procompetitive justification or technological benefit whatsoever. The Court of Appeals found that Microsoft's primary justification for its exclusive contracts with Original Equipment Manufacturers “borders upon the frivolous,” and that with one narrow exception, “all the OEM license restrictions at issue represent uses of Microsoft's market power to protect its monopoly, unredeemed by any legitimate justification.”

The Court of Appeals similarly found that Microsoft’s exclusive contracts with Internet Access Providers had no procompetitive justification, that “Microsoft . . . offered no procompetitive

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8 Id. at 91.
9 Id. at 11.
11 Id. at 63-64 (emphasis added).
12 Id. at 71.
justification for its exclusive dealing arrangements with the ISVs [Independent Software Vendors],”\(^{13}\) that “Microsoft offers no procompetitive justification for the exclusive dealing arrangement” with Apple,\(^{14}\) and that “Microsoft offered no procompetitive justification for the default clause that made the First Wave Agreements exclusive as a practical matter.”\(^{15}\) The Court of Appeals also found 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 . . . Microsoft offers no procompetitive explanation for its campaign to deceive developers.”\(^{16}\) Finally, the Court of Appeals found: “Microsoft does not . . . offer any procompetitive justification for pressuring Intel not to support cross-platform Java.”\(^{17}\)

True, the Court of Appeals did not specifically pass on the district court’s findings that in fact Microsoft’s efforts at technological and nontechnological foreclosure had adverse technological effects on the performance of its own products. But the Court of Appeals statements repeatedly sustaining the district court findings that Microsoft’s bundling and actions had no procompetitive or technological justification whatsoever imply approval of those more specific findings as well. In any event, none of the district court findings that Microsoft’s efforts at technological and nontechnological foreclosure had adverse technological effects was reversed as clearly erroneous by the Court of Appeals, and thus each of them remains the binding law of the case.\(^{18}\)

These prior findings cannot be second-guessed at this stage, and frame the Tunney Act question. The Court of Appeals decision is authoritative on lower courts, and all prior district court findings of fact that were not reversed by the Court of Appeals are also binding under the law of the case. Nor would a Tunney Act proceeding be an appropriate forum for second-guessing the accuracy of the findings in prior opinions since such a proceeding does not purport to redo the fact finding process. To be sure, neither the Court of Appeals nor the prior district court judge ever reviewed the proposed settlement or made any Tunney Act ruling about whether it was in the public interest. But my point is not that these prior findings settle the

\(^{13}\) Id. at 72 (emphasis added). The Court of Appeals did not reach the question whether Microsoft’s dealings with Internet Content Providers had a procompetitive justification because the appellate court concluded the trial court had not found an anticompetitive effect from this conduct. Id. at 71.

\(^{14}\) Id. at 74 (emphasis added).

\(^{15}\) Id. at 76 (emphasis added).

\(^{16}\) Id. at 77 (emphasis added).

\(^{17}\) Id. at 77 (emphasis added).

\(^{18}\) Id. at 117-118 (sustaining the district court findings of facts except for those few that the court of appeals held were clearly erroneous).
Tunney Act question. My point is rather that any Tunney Act ruling must assume the correctness of these findings.

Further, this is not a typical case of settlement proposed before trial or appeal, where the court conducting a Tunney Act proceeding has reason to defer to government authorities on the uncertainties and costs of securing and defending a judgment of liability. Here, the trial and appeal are already over, and the findings and judgments have already been secured and successfully defended. Nor is this anything like an earlier Microsoft Tunney Act proceeding, where the judge that disapproved a proposed settlement was reversed for relying on facts he read in a book but the government’s complaint never alleged and were never tested by the adversary process and appeal.\textsuperscript{19} Here the relevant facts were alleged by the Department of Justice, found true in an adversary proceeding, and sustained by an en banc court of appeals.

Thus the Tunney Act question before this court should properly be framed as follows. Given an antitrust defendant that has been found repeatedly willing to engage in anticompetitive technological and nontechnological conduct that had no procompetitive justification at all, but indeed degraded technological performance, is it in the public interest to approve a settlement that preserves the discretion of that defendant to engage in technological bundling and design that excludes rivals and lacks any demonstrable technological benefit?

II

Bundling two products in a way that confers some positive technological benefit but also anticompetitively forecloses rivals raises very troubling issues about whether courts can really assess and weigh the magnitude of the conflicting effects. Such a case might pose serious concerns about whether efforts to remedy the anticompetitive effects would have the adverse consequence of deterring technological innovation. In prior writing with co-authors, I have been so troubled that such an antitrust inquiry might itself deter technological progress that I proposed that product bundling that confers any technological benefit (that consumers could not themselves equally achieve through their own bundling) should be deemed a single product, and thus not challengeable as illegal bundling even though any technological benefit might possibly be outweighed by greater anticompetitive effects.\textsuperscript{20} Similarly, my co-authors and I concluded that product design decisions that advantage an associated defendant product over rival products should not be deemed a technological tie unless the product design lacks any

\textsuperscript{19} See United States v. Microsoft Corp., 56 F.3d 1448 (D.C.Cir.1995).
\textsuperscript{20} See X A Reda, Elhauge & Hovenkamp, Antitrust Law ¶1746 (1996).
technological benefit.\textsuperscript{21}

This proposed test was repeatedly cited with approval and largely adopted in an earlier Court of Appeals decision that reviewed a claim that Microsoft’s conduct violated a consent decree.\textsuperscript{22} However, the en banc Court of Appeals decision in this case has interpreted antitrust liability more expansively. It decided that, for purposes of both monopolization and tying claims, a positive technological benefit from technological integration or design is not a sufficient defense, but rather must be balanced against any anticompetitive effect.\textsuperscript{23} This test \textit{a fortiori} condemns the cases without any technological benefit that would be condemned under my test, but also condemns some technological integration or design that does confer a positive technological benefit. Such a test, if adopted in a consent decree, might raise serious questions as to whether in practice enforcement would be either unfeasible or unduly deter technological progress.

But it is an entirely different matter where, as here, a firm technologically bundles or designs its products in a way that anticompetitively forecloses its rivals without any procompetitive or technological justification whatsoever, and indeed retards technological progress. Such behavior lacks any plausible justification, or even the patina of one, and must be strongly condemned and rooted out of a competitive economy. Thus, the minimum requirement that any settlement must meet before it can be said to have provided the remedies necessary to protect the public interest from the continued threat of Microsoft’s antitrust violations would be to at least restrict Microsoft from continuing to technologically bundle or design products in ways that foreclose its rivals but do not improve technological performance at all.

This proposed settlement fails this test. The bottom line is that, while the settlement provides some restrictions on various nontechnological methods of foreclosing rival applications, it does nothing effective about technological foreclosure. It does not even bar efforts to foreclose rivals with technological manipulations that

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\item \textsuperscript{21} \textit{See} X Areeda, Elhauge & Hovenkamp, \textit{Antitrust Law} \textsuperscript{1747} (1996) (offering analysis and collecting cases).
\item \textsuperscript{22} United States v. Microsoft, 147 F.3d 935, 948-51 (D.C. Cir. 1998). I was, however, of the view that the Court of Appeals misapplied this test because it considered technological benefits that could equally be obtained by consumer bundling. \textit{See} Elhauge, “The Court Failed My Test,” The Washington Times, A-19 (July 10, 1998). The Court of Appeals did so because it mistakenly thought that otherwise the test could not distinguish the case of an integrated operating system distributed on three diskettes, but the test does in fact distinguish this case when properly combined with the threshold test that consumers desire the unbundled product. \textit{Id.}; X Areeda, Elhauge & Hovenkamp, \textit{Antitrust Law} \textsuperscript{1743} (1996). This threshold test should be applied before a court reaches any of the five grounds under which a defendant might prove that two items that meet this threshold test nonetheless constitute a single product. \textit{Id.} at \textsuperscript{1744-50} (laying out the five grounds).
\item \textsuperscript{23} 253 F.3d at 59, 65-67, 95.
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affirmatively harm the performance of Microsoft products.

Nothing in the proposed settlement prevents Microsoft from anticompetitively foreclosing rivals by simply selling its operating system with other Microsoft software included, even if such bundling confers no technological benefit whatsoever or even harms performance. Nor does the proposed settlement even bar Microsoft from purposefully designing its operating system in ways that confer no technological benefit but make rival software work poorly. In both respects, the settlement deletes restrictions the trial judge had previously ordered as necessary remedies during any period Microsoft was not broken up. Given the judicial findings of a repeated past willingness to subordinate technological performance to the goal of anticompetitively foreclosing rivals, it is hard to see how it can be in the public interest to leave Microsoft unrestricted in these ways. The proposed settlement leaves Microsoft free to harm competition at the cost of technological progress in precisely the ways it was found to have done so in the past.

Indeed, in both respects the proposed settlement actually worsens this problem. First, the proposed settlement not only fails to prohibit, but appears to sanctify bundling despite the lack of any technological justification by providing that Microsoft has the “sole discretion” to decide what to include in its operating system. Second, the proposed settlement not only fails to prohibit, but gives Microsoft affirmative incentives to design its operating system in ways that work poorly with rival products because that would create a “functionality” problem that

24 See United States v. Microsoft, 97 F.Supp.2d 59, 68 (D.D.C. 2000) (“Microsoft shall not, in any Operating System Product distributed six or more months after the effective date of this Final Judgment, Bind any Middleware Product to a Windows Operating System unless: (i). Microsoft also offers an otherwise identical version of that Operating System Product in which all means of End-User Access to that Middleware Product can readily be removed (a) by OEMs as part of standard OEM preinstallation kits and (b) by end users using add-remove utilities readily accessible in the initial boot process and from the Windows desktop; and (ii) when an OEM removes End-User Access to a Middleware Product from any Personal Computer on which Windows is preinstalled, the royalty paid by that OEM for that copy of Windows is reduced in an amount not less than the product of the otherwise applicable royalty and the ratio of the number of amount in bytes of binary code of (a) the Middleware Product as distributed separately from a Windows Operating System Product to (b) the applicable version of Windows.”); id. at 67 (“Microsoft shall not take any action that it knows will interfere with or degrade the performance of any non- Microsoft Middleware when interoperating with any Windows Operating System Product without notifying the supplier of such non-Microsoft Middleware in writing that Microsoft intends to take such action, Microsoft’s reasons for taking the action, and any ways known to Microsoft for the supplier to avoid or reduce interference with, or the degrading of, the performance of the supplier’s Middleware.”)

25 Indeed, the prior district court remedies would seem to constitute the law of the case of what remedies are necessary to remedy the antitrust violations that were inflicted through technological bundling and design.

26 Revised Proposed Final Judgment VI.U.
justifies express exclusion of rival products under the proposed settlement.\textsuperscript{27}

True, the proposed settlement does impose some restrictions. It would prohibit Microsoft from using agreements or threats to prevent computer makers or software developers from dealing with Microsoft's rivals. It would also prohibit Microsoft from making it impossible for computer makers or buyers to customize their operating system to add or substitute rival software. And it requires Microsoft to disclose the interface codes or server protocols necessary to design rival software to run on its operating system.

But none of these restrictions matter if Microsoft is free to engage in technological foreclosure. If the computer makers and consumers who buy the Microsoft operating system are forced to take a technological bundle that (without any technological benefit) includes other Microsoft software, those computer makers and consumers will have little incentive to substitute rival software, even if the rival software is technologically superior. For example, suppose Microsoft and its rival both offer software that costs $10 to make, but consumers value the rival software at $15 and the Microsoft software at $10. Without bundling, computer makers or consumers would buy the rival’s superior software. But with bundling, the Microsoft software is already included in the price of the operating system. Thus the computer makers or consumers would not pay $10 to get the rival software when the improved performance is only worth $5. Computer makers or consumers will have even less incentive to use rival software that works worse because Microsoft purposefully designed its operating system in ways that confer no technological benefit but create interoperability problems for rival software. Antitrust law and settlements should not impede genuine product innovation. If Microsoft bundled software to achieve technological benefits that would not be available if buyers combined their own software choices, then bundling should be permitted. But the appeals court concluded that Microsoft failed to show any technological benefit for its technological bundling, and the proposed settlement leaves Microsoft free to repeat bundling that lacks any technological merit. Likewise, if an operating system design decision makes Microsoft software run better, Microsoft should be free to adopt it even if it hampers rivals until they make modifications to take similar advantage of the improvement. But the proposed settlement leaves Microsoft free to make design decisions that actually degrade operating system performance in order to create problems for rival software.

In another binding ruling, the Court of Appeals held that:

“The Supreme Court has explained that a remedies decree in an antitrust case must seek to ‘unfetter a market from anticompetitive conduct,’ to ‘terminate the illegal monopoly, deny to the defendant the fruits of its statutory violation,

\textsuperscript{27} Id. at III.C.1, III.H.1,
and ensure that there remain no practices likely to result in monopolization in the future.”

The proposed settlement remedies fail this obligation because they do not unfetter the market from the past anticompetitive technological bundling and product design. The proposed remedies do not terminate the illegal monopoly. The proposed remedies do not deny Microsoft the fruits of its statutory violation since Netscape and Java remain technologically foreclosed with their diminished market shares. Nor do the proposed remedies do anything to prevent Microsoft in the future from again inflicting the same anticompetitive product bundling and design that forecloses rivals but lacks any technological benefit.

III

Many have apparently been under the misimpression that the government plaintiffs could no longer pursue remedies against technological bundling because the government plaintiffs dropped their tying claim. But this decision to drop the tying claim, which I applauded, did not reduce the need or ability to restrict technological foreclosure as a remedy for the antitrust violations that the Court of Appeals found Microsoft committed. This is true for two reasons.

First, dropping the §1 tying claim did not amount to dropping all claims against technological bundling because the Court of Appeals specifically found that Microsoft’s technological integration violated Sherman Act §2. Thus, at a minimum, the prior findings require an effective remedy against technological bundling that forecloses any rival software that could pose a competitive threat to the operating system itself.

Second, it is well-established law that antitrust remedies may need to prohibit conduct beyond what would violate antitrust law in order to be effective. Indeed, if all antitrust remedies did was repeat the legal prohibitions contained in existing law, they would hardly add anything. In particular, the Supreme Court decision in Loew’s held that, when a defendant has engaged in illegal bundling, “To ensure . . . that relief is effectual, otherwise permissible practices connected with the acts found to be illegal must sometimes be enjoined.” Thus, where a defendant has been found guilty of illegal technological bundling and design to protect its monopoly power, it would be appropriate to make the remedy ban all forms of technological

28 United States v. Microsoft., 253 F.3d 34, 102 (D.C.Cir.2001) (en banc) (emphasis added) (citing Ford Motor v. United States, 405 U.S. 562, 577 (1972), and United States v. United Shoe, 391 U.S. 244, 250 (1968)).
30 253 F.3d at 64-67.
bundling and design that foreclosed rival products but lacked any technological benefit, without specifically requiring proof that the foreclosed products posed a meaningful threat to the monopoly power. After all, when a defendant engages in technological manipulation that has no technological benefit at all, the only rational reason for its conduct must be to anticompetitively foreclose rivals. Given the absence of any procompetitive virtue, there is no reason to inflict on the public the additional cost and uncertainty of proving that the foreclosure had an anticompetitive effect. That is particularly true where the tying claim was dropped for the strategic reason of getting more quickly to the imposition of remedies, and not because the tying claim was ever rejected on the merits.

In any event, even under the most narrow possible reading of the prior holdings in this case, any proposed remedies must undo the adverse effects of (and deprive Microsoft of the fruits of) the prior technological and nontechnological misconduct that the district court and Court of Appeals found specifically foreclosed Netscape Navigator and Sun Java. This would at a minimum indicate that an appropriate remedy would include an obligation that Microsoft must carry Netscape Navigator and Sun’s version of Java on its operating system, so that those products would have the opportunity to serve as a rival platform for applications, just as they could have had without Microsoft’s illegal conduct. Unfortunately, such a remedy is probably now insufficient, since the foreclosure of these products has prevented a series of technological developments that otherwise might have occurred had every computer had a rival applications platform that could access the Internet. But, at least prospectively, such a remedy would offer a nice market test of the proposition that consumers might prefer to use these rival products as their applications platform, because the remedy would afford consumers the market choice of doing so or not.

IV
Even if one got past the proposed settlement’s failure to deal with technological foreclosure, its efforts to deal with nontechnological foreclosure have problems as well. In particular, even the weak restrictions that the proposed settlement would impose have various loopholes that undermine their effectiveness. One troubling loophole delays Microsoft's obligations to make disclosure and allow removal of Microsoft middleware for up to twelve months.32 That is a lifetime in computer software development, and one wonders whether rivals, with that kind of time lag, will ever overcome it. Further, the proposed settlement permits Microsoft not to disclose code that would compromise the security of “anti-piracy, anti-virus, software licensing, digital rights management, encryption or authentication systems.”33 It is quite possible that some of this code might be vital to the

32 Revised Proposed Final Judgment III.D, III.E, III.H.
33 Id. III.J.
interoperability of rival software. Further, excluding disclosure of authentication codes may allow Microsoft to exclude rivals to Passport, its Internet authentication system, and then tie E-commerce to its authentication monopoly. The proposed settlement also leaves Microsoft free to use financial inducements to encourage computer makers to favor Microsoft applications as long as those inducements are “commensurate” with their sales of the Microsoft application or reflect “market development allowances.” Microsoft can also enter into joint ventures or contractual arrangements with software developers that bar them from dealing with rival applications if that furthers some bona fide contractual purpose, which probably will not be difficult to find.

Finally, the whole proposed settlement would only last five years, leaving Microsoft free to engage in the full range of its past anticompetitive conduct starting in 2007. The mere fact that this threat will be looming in 2007 means that, even if the proposed settlement restrictions were effective, this looming threat would likely discourage any investments in long term software development, which may take years before it results in a product and require several years of profitability after introduction to recoup the investment. Indeed, since some of the proposed settlement obligations would not kick in for a year, the proposed settlement would leave rivals with only a four year window to try to profitably recoup investments in rival products that Microsoft could foreclose. This is probably insufficient even if, contrary to fact, the restrictions did meaningfully prevent foreclosure.

V

Given the above, I am reluctantly forced to conclude that approving the proposed settlement as a final judgment would not be “in the public interest,” as the Tunney Act requires. 15 U.S.C. §16. It fails to “terminat[e] alleged violations,” the “duration” and “relief sought” are unsatisfactory, the “anticipated effects of alternative remedies” that dealt with technological foreclosure and dealt better with nontechnological foreclosure would more effectively protect the public interest, the proposed remedies are not “adequa[te]” to correct the violations found by courts, and “the impact of entry of such judgment upon the public generally and individuals alleging specific injury from the violations set forth in the complaint” would be negative. Id.

The proposed settlement should thus be modified to bar Microsoft from engaging in technological integration or design that forecloses rival products but lacks any technological benefit, and to provide more effective remedies against nontechnological methods of foreclosure by closing the various loopholes in the proposed settlement that I have described above.

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34 Id. III.A, III.B.3.
35 Id. III.F.2, III.G.
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