

## UNITED STATES V. MICROSOFT CORP.

By Samuel Noab Weinstein

Microsoft's Windows operating system is the sun in the solar system of the information economy. With tens of millions of users worldwide, Windows is the most significant platform for continued software innovation. As Windows has matured, its interoperability has increased. Functions once considered distinct, such as disk de-fragmentation and memory management, have become part of the Windows system. While this interoperability offers advantages to consumers, it also raises serious antitrust concerns. The most pressing worry is that Microsoft will use its monopoly power in operating systems to quash innovation in other software markets by "integrating" formerly competitive functions into Windows. This tension, between the advantages of interoperability and the threat to competition, was at the core of the D.C. Circuit's decision in *United States v. Microsoft*.<sup>1</sup>

The verdict in this case was much anticipated. This anticipation grew both out of Microsoft's unique position in the American economy, and out of a desire to see a clear resolution of the complicated antitrust issues implicated in the case. As to Microsoft's fate, despite some press reports painting the decision as a victory for the software king,<sup>2</sup> the holding was a mixed result. Although the circuit court overturned both the breakup remedy and tying liability, remanding both for reconsideration, it firmly upheld liability for monopolization under section 2 of the Sherman Act.<sup>3</sup> Microsoft's real victories may have come later, when the Department of Justice announced that it would drop the tying charge and no longer pursue the breakup of the company,<sup>4</sup> and in the settlement agreement.<sup>5</sup>

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1. *United States v. Microsoft Corp.*, 253 F.3d 34 (D.C. Cir. 2001) ("*Microsoft III*"). For the sake of convenience, this Note refers to the 1998 D.C. Circuit decision as "*Microsoft II*." The more recent Microsoft litigation, encompassing both the 2000 district court decision and the 2001 D.C. Circuit decision, is referred to as "*Microsoft III*." "*Microsoft I*," the consent decree decision of 1995, plays only a minor role in this Note.

2. See, e.g., *Microsoft Marches On*, S.F. CHRON., June 29, 2001, at A24; John Hendren, *Microsoft Ducks Bullet, Again Talks About Deal*, SEATTLE TIMES, June 29, 2001, at A1.

3. *United States v. Microsoft Corp.*, 253 F.3d at 51.

4. Justice Department Informs Microsoft of Plans for Further Proceedings in the District Court, [http://www.usdoj.gov/atr/public/press\\_releases/2001/8981.htm](http://www.usdoj.gov/atr/public/press_releases/2001/8981.htm) (Sept. 6, 2001).

With regard to antitrust law, the holding does little to resolve the tension between interoperability and protection of competition. This failure is reflected in the decision's tying analysis. This Note focuses on that analysis and concludes that while the court's economic reasoning and its rejection of the current Supreme Court tying regime were substantially correct, its proposed rule provides too little guidance to courts and technology firms, and will result in uncertainty in this critical area of antitrust law. A new tying rule is necessary to strike the proper balance between a monopolist's ability to innovate through integration and the need to maintain competitive markets. Judges and scholars have proposed a number of candidates for this role. This Note will evaluate these proposals and conclude that a structured rule of reason test is the preferred solution.

## I. BACKGROUND

In order to understand this complex decision, it is useful to lay out the principal antitrust doctrines implicated by the case and to discuss some of the economics of antitrust.

### A. Antitrust Doctrine

The *Microsoft* case implicates a number of areas within antitrust law, some settled and some in flux. The charges against Microsoft included monopolization and attempted monopolization under section 2 of the Sherman Act,<sup>6</sup> fairly settled areas of law, and tying under section 1 of the Sherman Act,<sup>7</sup> a topic that has been the subject of significant disagreement.

#### 1. Monopolization

Under section 2 of the Sherman Act, liability for monopolization requires: "(1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power" not based on "a superior product, business acumen, or historic accident."<sup>8</sup>

In applying the initial prong of the test, a court will first define the relevant antitrust market. In general, the market will encompass all prod-

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5. Department of Justice and Microsoft Corporation Reach Effective Settlement on Antitrust Lawsuit, [http://www.usdoj.gov/atr/public/press\\_releases/2001/9463.htm](http://www.usdoj.gov/atr/public/press_releases/2001/9463.htm) (Nov. 2, 2001). The terms of the settlement can be found at <http://www.usdoj.gov/atr/cases/f9400/9495.htm> (Nov. 6, 2001).

6. 15 U.S.C. § 2 (1994).

7. 15 U.S.C. § 1 (1994).

8. *United States v. Grinnell Corp.*, 384 U.S. 563, 570-71 (1996).

ucts “reasonably interchangeable by consumers for the same purposes.”<sup>9</sup> Once the market is defined, the court will decide whether the defendant has monopoly power in that market, with monopoly power defined as “the power to control prices or exclude competition.”<sup>10</sup> Direct proof of monopoly power is rarely available, so courts typically rely on circumstantial evidence, such as market share combined with barriers to entry.<sup>11</sup>

If a court finds that monopoly power exists, it will determine whether the defendant has acquired or maintained that power through exclusionary conduct. A four-part test is used: (1) did the defendant’s conduct have anticompetitive effect?<sup>12</sup> (2) did the defendant’s actions in fact injure competition?<sup>13</sup> (3) if the plaintiff can demonstrate anticompetitive effect, does the monopolist have a “procompetitive justification” for its conduct?<sup>14</sup> and (4) if the plaintiff cannot rebut the procompetitive justification, can the plaintiff show that the “anticompetitive harm of the conduct outweighs the procompetitive benefit”?<sup>15</sup>

If the court finds both monopoly power and exclusionary conduct, the defendant will be liable under section 2.

## 2. *Attempted Monopolization*

In order to establish liability for attempted monopolization under section 2 of the Sherman Act, the evidence must prove that (1) the defendant engaged in “predatory or anticompetitive conduct” with (2) “a specific intent to monopolize” and (3) “a dangerous probability of achieving monopoly power.”<sup>16</sup> Just as in a monopolization analysis, a court must define the relevant antitrust market in order to rule on the third prong.<sup>17</sup>

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9. *United States v. E.I. DuPont de Nemours & Co.*, 351 U.S. 377, 395 (1956).

10. *Id.* at 391.

11. *See Rebel Oil Co. v. Atl. Richfield Co.*, 51 F.3d 1421, 1434 (9th Cir. 1995). Barriers to entry are factors that prevent potential competitors not currently in the market from quickly responding to an increase in price above the competitive level by entering the market. *See S. Pac. Communications Co. v. AT&T*, 740 F.2d 980, 1001-02 (D.C. Cir. 1984).

12. A court will find anticompetitive effect when the defendant’s actions “unfairly tend[ed] to destroy competition.” *Spectrum Sports, Inc. v. McQuillan*, 506 U.S. 447, 458 (1993).

13. *See generally Brooke Group v. Brown and Williamson Tobacco Corp.*, 509 U.S. 209, 225-26 (1993).

14. *See United States v. Microsoft Corp.*, 253 F.3d 34, 59 (D.C. Cir. 2001).

15. *Id.*

16. *Spectrum Sports*, 506 U.S. at 456.

17. *See id.* at 455-56.

### 3. *Tying*

Under current law a firm is liable for a tying violation if four conditions are met. First, there must be two separate products involved. Second, the defendant must not have allowed customers to purchase the tied product without the tying product. Third, the arrangement must affect a significant volume of interstate commerce. Fourth, the defendant must have market power in the tying product.<sup>18</sup> This is a *per se* test—if all four elements are satisfied, liability is automatic.<sup>19</sup> Most tying litigation focuses on the first and fourth elements, and in technological innovation cases the question of whether one product or two is involved has become a very difficult doctrinal issue.<sup>20</sup>

The Supreme Court laid out the standard test for determining whether a combination of goods or services represents one product or two in *Jefferson Parish Hospital District No. 2 v. Hyde*.<sup>21</sup> The Court held that the question of whether there are two products involved turns “not on the functional relation between them, but rather on the character of the demand for the two items.”<sup>22</sup> In other words, if there is “sufficient demand” for the purchase of one product “separate from” the second product, then there are two products for the purpose of tying analysis.<sup>23</sup>

#### **B. The Evolving Economics of Antitrust**

The Sherman Act, the first and most significant American antitrust law, is a famously imprecise piece of legislation. It includes general prohibitions on illegal monopolization and contracts or combinations in restraint of trade, but it does little to define specific violations.<sup>24</sup> It has been left up to the courts to fill in the meaning of the Act and to create detailed

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18. *Eastman Kodak Co. v. Image Technical Servs., Inc.*, 504 U.S. 451, 461-62 (1992); *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 12-18 (1984).

19. *Northern Pac. Ry. Co. v. United States*, 356 U.S. 1, 5 (1958).

20. See Michael Katz & Carl Shapiro, *Antitrust in Software Markets*, in *COMPETITION, INNOVATION, AND THE MICROSOFT MONOPOLY: ANTITRUST IN THE DIGITAL MARKETPLACE* 29, 72-73 (Jeffrey A. Eisenach and Thomas M. Lenard eds., 1999); Renato Mariotti, *Rethinking Software Tying*, 17 *YALE J. ON REG.* 367, 368-69 (2000); J. Gregory Sidak, *An Antitrust Rule for Software Integration*, 18 *YALE J. ON REG.* 1, 26 (2001).

21. 466 U.S. 2, 19 (1984).

22. *Id.*

23. *Id.* at 21.

24. Section one outlaws “[e]very contract, combination in the form of trust or otherwise, or conspiracy, in restraint of trade or commerce among the several States, or with foreign nations,” while section two penalizes any “person who shall monopolize or attempt to monopolize, or combine or conspire with any other person or persons, to monopolize any part of the trade or commerce among the several States, or with foreign nations.” 15 U.S.C. §§ 1-2 (1994).

antitrust guidelines. These guidelines have changed as courts have gained economic sophistication in the century or so since the Act's passage. Perhaps the most important overall impact of economic theory on antitrust law has been a general move away from per se rules, which declare certain arrangements to be illegal without exception, and toward the more general use of the "rule of reason," which requires courts to measure a practice's anticompetitive effect against its procompetitive benefits. This shift occurred as a result of a growing understanding among economists of the efficiency benefits of a number of activities that courts had previously deemed suspect.<sup>25</sup> These activities include nonstandard contracts, such as vertical exclusive distribution agreements,<sup>26</sup> and expansion to achieve economies of scale and scope.<sup>27</sup>

### 1. *The Economics of Technologically Dynamic Markets*

In recent years economists have gained a more nuanced understanding of the characteristics of high-technology markets. Many economists agree that these markets have three important defining characteristics: strong economies of scale, the presence of network effects, and the tendency toward a lock-in effect for successful technologies.<sup>28</sup>

Most high-technology industries involve products that are knowledge-intensive, rather than labor-intensive. Knowledge, especially the kind of knowledge needed to develop software, biotechnology, and other types of high-tech products, is generally expensive to produce. Once these products are developed, however, they are usually cheap to reproduce. This means that these industries tend to be characterized by high fixed costs and low marginal costs, and as a result average costs are reduced as output increases.<sup>29</sup> Thus, there are strong economies of scale on the supply side in many high-technology markets.

Strong "network" effects are a second key characteristic of high-technology markets. Network effects occur when the value of owning a good or service increases in relation to the number of consumers who al-

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25. See Richard Gilbert & Oliver Williamson, *Antitrust Policy*, in THE NEW PALGRAVE DICTIONARY OF ECONOMICS AND THE LAW 83-85 (Peter Newman ed., 1998).

26. In *Continental T.V. v. GTE Sylvania* 433 U.S. 36 (1977), the Supreme Court held that vertical non-price restrictions were to be judged under the rule of reason, as these arrangements had potential procompetitive benefits.

27. See Gilbert & Williamson, *supra* note 25.

28. Katz & Shapiro, *supra* note 20, at 32-36; Robert Litan, *Antitrust and the New Economy*, 62 U. PITT. L. REV. 429 (2001).

29. Litan, *supra* note 28, at 429.

ready own it.<sup>30</sup> The telephone system provides a good example. As the number of individuals who own phones rises, phone ownership becomes more valuable to potential consumers.<sup>31</sup> Computer operating systems are an obvious new-economy example of a product with network effects.

Third, some high-technology products are subject to a lock-in effect. This means that once consumers are familiar with a product and are trained to use it, they are reluctant to switch to a different product.<sup>32</sup> This is true of many software products, which can be difficult and time-consuming to master.

These characteristics—supply-side economies of scale, network effects, and lock-in—combine to create important tendencies toward monopoly in high-technology markets.

## 2. *The Economics of Tying in the Software Context*

The distinctive characteristics of high-technology markets, and the software market in particular, have shaped economists' view of the proper role of tying law in these markets. A number of economic concerns animate the traditional ban on tying arrangements. First, tying reduces consumers' freedom of choice.<sup>33</sup> Under current market conditions, for instance, tying a browser to Windows leaves consumers of Intel-based PC operating systems fewer options in browser technology. In addition, tying arrangements concern economists because they have the strong potential to reduce competition on the merits in the tied product market.<sup>34</sup> There are also procompetitive reasons for manufacturers to bundle products. These include transaction costs savings, which result from economies of scale or scope in production and marketing, and quality assurance.<sup>35</sup>

Many economists argue that the traditional economics of tying do not map well onto the conditions in software markets.<sup>36</sup> This is because the innovation rate in software is much higher than in the "static" industries

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30. Katz & Shapiro, *supra* note 280 at 32-34; Robert Pitofsky, *Antitrust and Intellectual Property: Unresolved Issues at the Heart of the New Economy*, 16 BERKELEY TECH. L.J. 535, 538-39 (2001).

31. See Daniel L. Rubinfeld, *Antitrust Enforcement in Dynamic Network Industries*, 43 ANTITRUST BULL. 859, 861 (1998).

32. Litan, *supra* note 28, at 430.

33. See Phillip Areeda & Louis Kaplow, ANTITRUST ANALYSIS: PROBLEMS, TEXT, CASES 687-92 (5th ed. 1997).

34. *Id.* at 686; Katz & Shapiro, *supra* note 20, at 70.

35. Katz & Shapiro, *supra* note 20, at 67-68; J. Gregory Sidak, *An Antitrust Rule for Software Integration*, 18 YALE J. ON REG. 1, 9-10 (2001).

36. See Katz & Shapiro, *supra* note 20, at 66-78; Sidak, *supra* note 35.

upon whose characteristics traditional tying law was based.<sup>37</sup> As a result it is often very difficult to determine whether a software bundle is one product or two, or whether it is anticompetitive.<sup>38</sup> This difficulty led the D.C. Circuit to craft a new tying rule for software products in *Microsoft III*.

## II. THE CASE

In May 1998,<sup>39</sup> the Department of Justice and a group of nineteen state plaintiffs filed suit against Microsoft, alleging four types of antitrust violations: unlawful exclusive dealing arrangements and unlawful tying in violation of section 1 of the Sherman Act, and unlawful monopoly maintenance and attempted monopolization under section 2.<sup>40</sup>

### A. Factual Background

The allegations against Microsoft emerged from what the plaintiffs characterized as the company's efforts to maintain its operating system monopoly by destroying threats posed by Netscape Navigator, a web browser, and Sun Java, a cross-platform programming language.<sup>41</sup> Both Navigator and Java are species of "middleware," software programs that can serve as platforms for other software applications.<sup>42</sup> According to the plaintiffs' theory, middleware posed two distinct threats to the Windows monopoly. First, because the middleware applications themselves could be used as software platforms, they competed directly with Windows.<sup>43</sup> Second, middleware designed to run on more than one operating system would allow software developers to write programs that worked on any

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37. See Sidak, *supra* note 35, at 26-27.

38. See Katz & Shapiro, *supra* note 20. In addition, because marginal costs of production are so low that a manufacturer can bundle a program for an insignificant cost, there are many situations in which bundling is efficient. *Id.* at 67.

39. The roots of this case reach back at least seven years. In 1994 the DOJ filed suit against Microsoft, charging the company with illegally maintaining its monopoly in the operating system market through anticompetitive licensing and software agreements. *United States v. Microsoft Corp.*, 56 F.3d 1448, 1451 (D.C. Cir. 1995) ("*Microsoft I*"). This issue was settled by consent decree in 1995. *United States v. Microsoft Corp.*, 56 F.3d 1448. In 1998 the DOJ brought suit against Microsoft for allegedly violating aspects of the consent decree by bundling Internet Explorer 3.0 and 4.0 with Windows 95. The D.C. Circuit held, however, that Microsoft's actions did not violate the consent decree. *United States v. Microsoft Corp.*, 147 F.3d 935 (D.C. Cir. 1998) ("*Microsoft II*").

40. Government's Complaint at 1, *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D.D.C. 2000), at <http://www.usdoj.gov:80/atr/cases/f1700/1763.wpd>.

41. *Id.* at 1-2.

42. *United States v. Microsoft Corp.*, 84 F. Supp. 2d 9, 22-23 (1999).

43. Government's Complaint at 1-2, *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D.D.C. 2000), at <http://www.usdoj.gov:80/atr/cases/f1700/1763.wpd>.

number of these systems, potentially leading to a lowering of the “applications barrier to entry,” which, plaintiffs argued, protected Microsoft’s Windows monopoly.<sup>44</sup> The plaintiffs alleged that Microsoft engaged in a number of anticompetitive acts in its efforts to destroy the threats posed by Navigator and Java. These acts included securing exclusive dealing contracts with Original Equipment Manufacturers (“OEMs”) and Internet Access Providers (“IAPs”), barring these entities from using Navigator in addition to Internet Explorer (“IE”),<sup>45</sup> and pressuring Apple Computer to drop its use of Navigator. In addition, the plaintiffs alleged that Microsoft had illegally tied IE to Windows in an effort to destroy competition in the browser market.<sup>46</sup>

### 1. *The District Court Holding*

The district court held that Microsoft had a monopoly in the market for Intel-compatible PC operating systems<sup>47</sup> and that the company had engaged in a variety of anticompetitive practices to maintain that monopoly power.<sup>48</sup> These practices were aimed at destroying the “middleware threat.”<sup>49</sup> They included an attempt to convince Netscape not to release a version of its browser that might have served as a substantial platform for applications;<sup>50</sup> exclusive contracts with OEMs, IAPs, and Apple Computer that forced these parties to favor IE over Netscape;<sup>51</sup> bundling of IE and Windows to reduce rival browser share;<sup>52</sup> and Microsoft’s creation of its own version of a Java Virtual Machine (“JVM”) and the contracts it used to force Independent Software Vendors (“ISVs”) to use this version.<sup>53</sup> Having found both monopoly power and anticompetitive conduct, Judge Jackson held that Microsoft violated section 2 by illegally maintaining its monopoly in the operating system market.<sup>54</sup>

Judge Jackson also held Microsoft liable for attempted monopolization under section 2. The judge found Microsoft’s offer to Netscape to divide

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44. *Id.*

45. *Id.* at 6, 8-12.

46. *Id.* at 7-8.

47. *United States v. Microsoft*, 87 F. Supp. 2d at 36-37.

48. *Id.* at 37-44.

49. *Id.* at 38-39.

50. *Id.* at 39.

51. *Id.* at 39-42.

52. *Id.* at 39-40.

53. *Id.* at 43-44.

54. *Id.* at 44.

the browser market sufficient to constitute a “dangerous probability” that Microsoft might achieve a monopoly in the browser market.<sup>55</sup>

As for the section 1 violations, Judge Jackson found Microsoft liable for tying but not for exclusive dealing. In his tying analysis, Judge Jackson applied the *Jefferson Parish* “separate demand” test and found that IE and Windows were separate products.<sup>56</sup> By conditioning the licensing of Windows on the purchase of IE, Judge Jackson ruled that Microsoft had created an illegal tie-in.<sup>57</sup> Judge Jackson, however, refused to find Microsoft liable for exclusive dealing because the defendant had not foreclosed a sufficient share of the market for browser sales.<sup>58</sup>

## B. The D.C. Circuit Holding<sup>59</sup>

### 1. Monopolization

The circuit court upheld the lower court’s ruling that Microsoft possessed monopoly power in the market for Intel-compatible PC operating systems.<sup>60</sup> The court rejected Microsoft’s argument that the district court had incorrectly defined the relevant market. The court also rejected Microsoft’s assertion that, because the software industry is uniquely dynamic, direct proof of market power rather than the standard circumstantial evidence was necessary.<sup>61</sup>

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55. *Id.* at 45-46.

56. *Id.* at 48-51.

57. *Id.*

58. *Id.* at 51-53.

59. The following discussion addresses only the antitrust aspects of the case. The circuit court also considered Microsoft’s appeal of the district court’s procedural rulings with respect to both the trial and remedy phases. The circuit court brushed off Microsoft’s complaint that the district court erred in ordering an expedited trial and in agreeing to use summary witnesses, noting the lower court’s “broad discretion to conduct trials as it sees fit.” *United States v. Microsoft Corp.*, 253 F.3d 34, 98 (D.C. Cir. 2001). As to the remedy phase, the circuit court held that the district court judgment must be vacated on three separate grounds: first, the district court had erred in failing to hold a remedies-specific evidentiary hearing in the face of a factual dispute; second, the court had failed to provide adequate explanations for its remedy; and third, the circuit court’s revisions of the scope of Microsoft’s liability required a fresh look at the remedy. *Id.* at 98, 101-05. The circuit court also held that Judge Jackson’s public comments on the case, his *ex parte* contacts, and his failure to appear impartial meant that he must be disqualified from the case retroactive to the date he entered the breakup order. *Id.* at 107-16. The court refused, however, to overturn Judge Jackson’s Findings of Fact and Law, as Microsoft failed to prove that Judge Jackson’s actions rose to the level of actual bias. *Id.* at 116.

60. *Id.* at 51-59.

61. *Id.* at 56. Microsoft asserted that the district court had erred by excluding non-Intel operating systems, such as Apple, non-PC systems, such as hand-held devices, and

The court also upheld the district court's finding that Microsoft had engaged in anticompetitive conduct. This conduct included the restrictions Microsoft imposed on OEMs through licenses for Windows,<sup>62</sup> which the court held reduced the usage of rival browsers through contractual limitations rather than on the basis of a superior Microsoft product.<sup>63</sup> Other anticompetitive conduct included some of the ways in which Microsoft bundled IE with Windows,<sup>64</sup> Microsoft's exclusive contracts with IAPs,<sup>65</sup> ex-

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middleware, such as Netscape and Java from the relevant market. *Id.* at 52. The court rejected Microsoft's arguments as to the first two proposed substitutes because the company failed to challenge the district court's findings that neither type of product was a realistic substitute for Intel operating systems. *Id.* Microsoft's argument regarding middleware was potentially more persuasive than its other arguments in this area. The company pointed out that because the lower court clearly held that middleware was a threat to the Windows monopoly, it must be considered part of the market for monopoly analysis. *Id.* at 53-54. The circuit court noted, however, that the district court classified middleware as a potential *future* threat. *Id.* In order to affect the market analysis, however, middleware would have to be able to act as a substitute for Windows in the near future. *Id.* This, the circuit court ruled, was not likely, and as a result middleware was not part of the proper antitrust market. *Id.*

Microsoft next argued that even if the relevant antitrust market was Intel-compatible PC operating systems, the company did not have monopoly power in this market. The crux of Microsoft's argument was that despite Windows' 95% share of this market, the possibility of competition from new entrants prevented the company from exercising monopoly power. *Id.* at 54-55. As a necessary corollary, Microsoft also challenged the existence of the "applications barrier to entry." *Id.* at 55-56. The circuit court agreed that the possibility of new entrants may affect the monopoly power analysis, but held that no such effect existed in this situation. *Id.* at 54-55. The court concurred with the lower court's conclusion that the applications barrier would keep competitors out. *Id.* at 55-56.

62. *Id.* at 59-64. These licenses prohibited the OEMs from (1) removing any desktop icons, folders, or "Start" menu entries; (2) altering the initial boot sequence; or (3) otherwise altering the appearance of the Windows desktop. *Id.* at 61. The court found each of these restrictions anticompetitive. The court did hold that OEMs that had altered the operating system so that the Windows desktop never appeared had engaged in a "drastic alteration of Microsoft's copyrighted work." *Id.* at 60. The court ruled that the harm of this alteration outweighed the anticompetitive effect of preventing OEMs from inserting a different interface that would appear upon completion of the boot sequence. *Id.*

63. *Id.* at 62, 64.

64. *Id.* at 67. In particular, the court ruled that the exclusion of IE from the "Add/Remove Programs" utility and the commingling of browser code with other code so that a user trying to get rid of IE would destroy the entire system were anticompetitive. *Id.* The court held that Microsoft was not liable for a third aspect of the bundle, the fact that under certain circumstances Windows would override the user's choice of a default browser. The court noted that the plaintiffs had not rebutted Microsoft's justification for this feature. *Id.*

65. *Id.* at 67-71. Under the terms of these contracts, Microsoft furnished easy access to the IAPs from the Windows desktop in return for an agreement to promote IE to the

clusive dealing arrangements with ISVs, and Microsoft's deal with Apple in which Apple bundled IE with its operating system and made it the system's default browser.<sup>66</sup>

Turning to Microsoft's involvement with the Java technology, the court held that Microsoft's "First Wave Agreements" with ISVs, which offered Windows technical information in exchange for a promise to exclusively promote Microsoft's version of Java, were anticompetitive because they reduced the distribution of Navigator and foreclosed a substantial portion of the Java Virtual Machine market.<sup>67</sup> Microsoft had also deceived ISVs by promising them that programs created on Microsoft's JVM would run on Sun's version, when in fact they would not.<sup>68</sup> The court held that this deception was also anticompetitive.<sup>69</sup> In addition to these actions, Microsoft had threatened Intel that if it did not give up its efforts to create a cross-platform JVM, Microsoft would begin to support Intel's main competitor, Advanced Micro Devices.<sup>70</sup> The court found that this coercion, too, was anticompetitive.<sup>71</sup>

Thus, while the circuit court did overturn some of the lower court's findings of anticompetitive behavior, it ruled nonetheless that Microsoft had engaged in a long list of anticompetitive acts. These acts, combined with Microsoft's monopoly power, led the court to uphold the finding of section 2 violations for monopoly maintenance.

## 2. *Attempted Monopolization*

The D.C. Circuit overturned the district court's finding of liability for attempted monopolization on the grounds that the Government had not made a sufficient showing that Microsoft's conduct raised a "dangerous

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exclusion of other browsers and to limit the number of Netscape browsers they shipped to consumers. The court held that because these contracts ensured that most IAP users were offered IE either as a default browser or as the only browser, the contracts helped maintain Microsoft's monopoly. *Id.* at 71. The circuit court overturned the district court's finding of liability as to other aspects of these contracts. Specifically, the court found that offering IE at no cost to IAPs, offering IAPs a payment for each customer recruited to use IE, and creating and giving IAPs a free kit that allowed them to customize IE were not anticompetitive practices. *Id.* at 67-68.

66. *Id.* at 72-74. The court overturned the lower court's decision that Microsoft's deals with Internet Content Providers ("ICPs") were anticompetitive, as the plaintiffs had failed to show that these deals had a substantial effect on competition. *Id.* at 71.

67. *Id.* at 74-76.

68. *Id.* at 76-77.

69. *Id.*

70. *Id.* at 77-78.

71. *Id.*

probability of achieving monopoly power" in the browser market.<sup>72</sup> The opinion noted that generally under these conditions the court would remand the case so that the district court could properly define the market in question. The court ruled that remand was unnecessary here, however, because the plaintiffs did not provide enough information on the defining characteristics of browsers and possible substitutes for the district court to perform the analysis.<sup>73</sup>

### 3. *Tying*

The D.C. Circuit overturned the district court's holding that Microsoft's bundling of Internet Explorer and Windows was per se unlawful.<sup>74</sup> Ignoring Supreme Court precedent squarely on point, the court announced a new tying rule for situations "involving platform software products."<sup>75</sup> Rather than judging these arrangements under the per se rule, as required by *Northern Pacific* and *Jefferson Parish*, the court held that the rule of reason is the appropriate test and remanded the case to the district court for judgment under this standard.<sup>76</sup>

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72. *Id.* at 80-81. The court held that both the plaintiffs and the district court had committed the fundamental error of assuming that liability for attempted monopolization of the browser market was an automatic outgrowth of Microsoft's section 2 liability for monopolization of the operating system market. *Id.* at 80-81. As a result, the Government failed to demonstrate that the browser market could in fact be monopolized, a showing which in turn would have required the Government to define the market, and prove that substantial barriers to entry protect that market. *Id.* The circuit court held that the Government failed on both these fronts and that the district court ignored these failures. *Id.* at 81-82.

73. *Id.* at 81-82. The analysis might have ended there, because lack of market definition carries the day, but the circuit court went on to overturn the district court's holding on barriers to entry. Specifically, the circuit court held that pointing to the proposed deal between Microsoft and Netscape to split the browser market as a barrier to entry was "far too speculative." The circuit court admitted the possibility that a showing of network effects in the browser market might have been sufficient to demonstrate a barrier to entry, but held that the district court failed to find either that these network effects existed in the browser market or that a barrier to entry on the basis of network effects would confer monopoly power. These failings were directly related to the fact that the Government did not provide sufficient evidence on either point. *Id.* at 82-84.

74. Part III *infra* offers a detailed analysis of this part of the holding.

75. *United States v. Microsoft Corp.*, 253 F.3d at 84.

76. *Id.* The court suggested that to prevail on remand, the plaintiffs must show that "Microsoft's conduct unreasonably restrained competition." *Id.* at 95. In other words, the plaintiffs would have to prove that the anticompetitive effects of Microsoft's bundling outweighed whatever procompetitive justifications the company offered.

### III. RECONSIDERING TYING LAW

The tying allegations against Microsoft raised the most challenging and important legal issues to emerge from the case. At the heart of the tying controversy is the delicate balance between the advantages of high-technology product integration and the serious risk of anticompetitive forced buying. There is sharp disagreement among judges and scholars about the type of tying rule best able to achieve this balance.

This disagreement is reflected in the D.C. Circuit's remarkable abrogation of Supreme Court tying precedent. The circuit court carved out a special exception to the law of the land for tying as stated in *Northern Pacific* and *Jefferson Parish*<sup>77</sup> and held that "the rule of reason, rather than per se analysis, should govern the legality of tying arrangements involving platform software products."<sup>78</sup>

In order to understand what drove the D.C. Circuit to reject relevant Supreme Court precedent, the following analysis starts with a discussion of the economics of tying in high-technology markets and then examines the incongruity between current economic theory and the legal rules governing tying. The next section argues that while the D.C. Circuit was right to displace *Jefferson Parish*, its new rule is too open-ended. The *Jefferson Parish* rule and the D.C. Circuit's rule of reason are at opposite ends of a jurisprudential spectrum stretching from the overly formalistic to the dangerously formless. The final section of this Note reviews a number of proposed tying tests that occupy the middle ground along this spectrum and concludes that a structured rule of reason test is the preferred approach.

#### A. The Economics of Tying

For many years courts have viewed tying arrangements as necessarily anticompetitive and judged them under a per se standard.<sup>79</sup> This approach is based on the assumption that tie-ins never result in efficiencies. In recent years, however, economists have demonstrated that tying arrangements can be efficient and procompetitive in certain circumstances.<sup>80</sup> For instance, tie-ins may provide transaction cost savings resulting from economies of scope and scale in production, distribution, and marketing.<sup>81</sup> In addition, when two components are used together in a system, a tying arrangement can provide quality assurance. The tie-in allows the monopo-

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77. See *supra* Part I.A.3.

78. *United States v. Microsoft Corp.*, 253 F.3d at 84.

79. PHILIP AREEDA, IX ANTITRUST LAW 267 (1991).

80. Katz & Shapiro, *supra* note 280, at 67-69.

81. *Id.* at 67-68.

list in product A to ensure that lower quality versions of product B do not reduce A's performance.<sup>82</sup> Naturally, tying arrangements can have anticompetitive results as well. Specifically, tie-ins are anticompetitive when they are designed to foreclose competition. Foreclosure can occur in two ways. The tie-in can directly eliminate competition in the tied product market by forcing consumers to purchase the monopolist's version of the tied product.<sup>83</sup> The tie-in can also foreclose competition by forcing competitors to enter both the tied and tying markets simultaneously. This "two-stage entry" problem makes it difficult for competitors to emerge.<sup>84</sup>

Current economic analysis thus indicates that tying arrangements can be either pro- or anticompetitive, depending upon their particular characteristics and design. An effective tying rule must therefore be able to differentiate between pro- and anticompetitive tie-ins. Current tying law fails at this task.

### **B. The Need to Rethink *Jefferson Parish***

As noted above, the current Supreme Court test for tying requires a court to determine whether the arrangement in question involves one product or two. In *Jefferson Parish* the Supreme Court held that two products exist for the purposes of tying law if there is "sufficient demand for the purchase" of the products separately.<sup>85</sup> As the D.C. Circuit observed, the *Jefferson Parish* test is a "prox[y] for net efficiency."<sup>86</sup> In other words, it is a relatively simple way of determining whether a particular tying arrangement increases consumer welfare. The logic here is that separate demand for products will exist when the benefits of product choice outweigh the efficiencies of a particular product integration.<sup>87</sup> The question is whether this test is a useful proxy, and the answer is that it is in some, but not all cases. This is because, while it is true that consumers tend to understand the market they are in, they are not always able to judge the efficiencies of a particular product integration.<sup>88</sup> It is not difficult to imagine a

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82. *Id.* at 68-69.

83. *Id.* at 70.

84. *Id.* at 70-71.

85. *Jefferson Parish*, 466 U.S. at 22.

86. *United States v. Microsoft Corp.*, 253 F.3d 34, 87-88 (D.C. Cir. 2001).

87. *Id.*

88. One commentator has suggested that relying on consumer demand is problematic because consumer perception of products is significantly affected by marketing and packaging. In other words, there is the risk that consumers will believe that browsers and operating systems are not separate products simply because Microsoft promotes an integration of the two as a unified product. The ability of software designers to adjust code to make what might be two distinct products appear unified on the desktop heightens this

situation in which separate consumer demand continues to exist after the creation of an efficiency-enhancing integration because consumers are slow to recognize the efficiencies. If the other elements of a tying charge were met, a court relying on *Jefferson Parish* would find such an integration illegal. This type of ruling would not advance the goals of antitrust law, which exists not to quash innovation, but to prevent forced buying.

### C. “Not All Ties Are Bad”: The D.C. Circuit’s Dilemma

In *Microsoft III*, the D.C. Circuit confronted a situation in which the logic of the relevant Supreme Court precedent was no longer supported by current economic theory. The tying portion of the opinion is propelled by this incongruity. Noting that “not all ties are bad,”<sup>89</sup> the court relied upon current economic theory for the idea that tying arrangements can produce transaction costs savings and economies of scale and/or scope.<sup>90</sup> The court also noted that the *Jefferson Parish* test cannot always differentiate good ties from bad.<sup>91</sup>

At this point in the opinion, the court appeared ready to reject the *Jefferson Parish* test on its own terms. Because the circuit court could not directly overturn the Supreme Court’s test, however, the opinion was forced to take a circuitous route to get out from under *Jefferson Parish*. To do so, the court appealed to more general Supreme Court precedent on the applicability of per se rules. Repeating the Supreme Court’s admonition that per se rules are only appropriate “after considerable experience with certain business relationships,”<sup>92</sup> the D.C. Circuit concluded that “technological integration of added functionality into software that serves as a platform for third-party applications” is not such a familiar business relationship.<sup>93</sup>

This argument collapses upon the slightest scrutiny. The Supreme Court has already held that tying arrangements *as a category* are a type of business relationship that experience has shown always hurts competition

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risk. Renato Mariotti, *Rethinking Software Tying*, 17 YALE J. ON REG. 367, 377-79 (2000).

89. *United States v. Microsoft Corp.*, 253 F.3d at 87.

90. *Id.*

91. *Id.* at 89.

92. *Id.* at 84 (quoting *Broadcast Music, Inc. v. CBS*, 441 U.S. 1, 9, 60 (1972)).

93. *Id.* The D.C. Circuit also held that a rule of reason analysis is necessary here because tying in software markets produces efficiencies that courts are not yet trained to recognize and that are not accounted for by the per se rule. *Id.* at 93. The court noted that the course of product development is very difficult to predict in technologically dynamic markets and that the efficiencies of new arrangements are often difficult to understand. *Id.* at 94.

and therefore are illegal per se. Reliance upon more general statements about the conditions under which per se rules should apply cannot overcome Supreme Court precedent that is directly on point.

Nonetheless, the court remanded the tying charge for consideration under the rule of reason.<sup>94</sup> The court provided very little guidance as to how the test should be administered, however. The opinion states only that the district court should balance the bundle's "benefits against the costs to consumers."<sup>95</sup>

#### D. The D.C. Circuit's Unstructured Rule of Reason Test

The D.C. Circuit decision yanks tying law from reliance on the overly formalistic *Jefferson Parish* rule to the opposite end of the jurisprudential spectrum, creating a rule that provides little guidance to courts about how to identify anticompetitive tying arrangements. While its requirement of thorough analysis and its open-ended character are reasons to favor the D.C. Circuit's rule of reason, the test also has significant drawbacks.

The first and most significant drawback of the unstructured rule of reason is that it provides much less predictability to innovating firms whose actions may brush up against the antitrust laws. With evaluation of net efficiency left to the courts, firms would have very little idea how a trial might turn out. This uncertainty might chill innovation or embolden monopolists.<sup>96</sup> Because the D.C. Circuit's rule of reason test provides no guidelines at all, it is not even clear which economic variables courts will consider. Potential litigants and their lawyers are likely to have little ability to predict how courts will view new tying arrangements.<sup>97</sup>

The second problem with the D.C. Circuit test is that it is questionable whether courts are equipped to make these sorts of determinations. The D.C. Circuit itself has stated that "[c]ourts are ill-equipped to evaluate the

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94. *Id.*

95. *Id.*

96. For evaluation of the difficulties created by the unstructured rule of reason test, see Philip Areeda, *Antitrust Law as Industrial Policy: Should Judges and Juries Make It?*, in ANTITRUST, INNOVATION, AND COMPETITIVENESS 29 (Thomas M. Jorde & David J. Teece eds., 1992); Frank H. Easterbrook, *Ignorance and Antitrust*, in ANTITRUST, INNOVATION, AND COMPETITIVENESS, *supra*, at 119; Gregory J. Werden, *Antitrust Analysis of Joint Ventures: An Overview*, 66 ANTITRUST L.J. 701, 734 (1998) ("Sorting out the facts of actual cases under the rule of reason is apt to be difficult and subject to significant error.").

97. Professor Areeda has warned that "[a] rule that cannot be consistently applied invites confusion and quixotic results contrary to the statutory purpose." PHILLIP AREEDA, ANTITRUST LAW 396 (1986).

benefits of high-tech product design.”<sup>98</sup> There is merit to this criticism. What sort of evidence would courts rely upon to determine whether an integration’s efficiencies outweigh the loss of consumer choice? The D.C. Circuit does not suggest any.

The drawbacks to both the *Jefferson Parish* and unstructured rule of reason tests prompt the question of whether a balanced alternative exists. Is there a test that demands a more thorough analysis than that required by *Jefferson Parish* but is not so open-ended that courts have no useful guideposts for evaluating tying arrangements in technologically dynamic markets? A number of candidates already exist.

### E. Other Points on the Spectrum: Alternative Tying Tests

These candidates themselves range from the highly structured to the more open-ended. At the structured end is the D.C. Circuit’s rule from *Microsoft II*. In that case the court rejected *Jefferson Parish* because it failed to distinguish “an upgrade from a separate product.”<sup>99</sup> To overcome this problem, the D.C. Circuit held that any “genuine technological integration” should be treated as one product, “regardless of whether elements of the integrated package are marketed separately.”<sup>100</sup> The court defined “genuine technological integration” as any “product that combines functionalities . . . in a way that offers advantages unavailable if the functionalities are bought separately and combined by the purchaser.”<sup>101</sup> The D.C. Circuit set an extremely low bar for determining whether a product meets this test. All the defendant has to show is “a plausible claim” that the combination “brings some advantage.”<sup>102</sup>

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98. *United States v. Microsoft*, 147 F.3d 935, 952 (D.C. Cir. 1998). The most recent D.C. Circuit opinion flailed in its attempt to explain away this earlier statement, asserting that “[t]o the extent that [*Microsoft II*] completely disclaimed judicial capacity to evaluate ‘high-tech product design,’ . . . it cannot be said to conform to prevailing antitrust doctrine (as opposed to resolution of the decree-interpretation issue then before us).” *United States v. Microsoft*, 253 F.3d 34 at 92.

99. *Microsoft II*, 147 F.3d at 947.

100. *Id.* at 948.

101. *Id.*

102. *Id.* at 950. It is important to note that the D.C. Circuit was careful to say that all it was doing in *Microsoft II* was interpreting the Consent Decree that governed Microsoft’s behavior. *Id.* at 946. The court was also quite clear, however, that it believed its definition of integration was “consistent with the antitrust laws” and the tone of the opinion suggests the court’s belief that this rule was the proper one for settling the two-product question as an antitrust matter. *Id.* at 948. In any event, the genuine technological integration rule has been treated as one potential substitute for the current tying rule and therefore should be considered in that light. *See Sidak, supra* note 35, at 34-37.

This test provides clear guidelines for deciding the separate-product question; any plausible claim of advantage wins the day for the defendant. As a result, the “genuine technological integration” test heavily favors potential innovation over protection of competition. The advantage of the test is that courts can avoid the mistake, possible under *Jefferson Parish*, of finding a truly procompetitive bundling arrangement illegal simply because separate demand continues to exist for the elements of the bundle. The great (and probably fatal) disadvantage of this test, however, is that it opens the door to increased anticompetitive behavior by monopolists.<sup>103</sup> Under the test, for instance, Microsoft may link any feature to Windows and survive antitrust scrutiny simply by making claims of some potential benefit.<sup>104</sup> These benefits may never accrue, or they may be so slight as to be far outweighed by the anticompetitive effect of the tie-in. In either case, the arrangement would survive under the “genuine technological integration” test.<sup>105</sup>

### 1. *Market Practices Tests*

While the *Microsoft II* test focused on the attributes of the product itself, “market practices” tests rely on the behavior of market participants for clues about whether a tying arrangement is anticompetitive.<sup>106</sup> Professor Phillip Areeda has proposed a well-known example of this type of test. His proposal concentrates on whether bundling is universal in a competi-

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103. *United States v. Microsoft*, 147 F.3d 935, 956-57 (D.C. Cir. 1998) (Wald, J., dissenting) (arguing that the majority rule creates “too safe a harbor with too easily navigable an entrance”).

104. *Id.* at 957. See also Mariotti, *supra* note 88, at 386-389.

105. Professor Lawrence Lessig proposed a useful variation on this test in his amicus brief submitted in *Microsoft III*. Brief of Lawrence Lessig as Amicus Curiae, *United States v. Microsoft Corp.*, 87 F. Supp. 2d 30 (D.D.C. 2000). Professor Lessig argued that courts should begin with the presumption that a software integration is one product rather than two and that a showing of special anticompetitive concern should be necessary to overcome this presumption. *Id.* at 40. Professor Lessig noted that anticompetitive concerns are raised by particular market conditions. For instance, if the bundled products are partial substitutes for each other, and the defendant has monopoly power in the tying product, then the bundle may be a way to ensure that the tied product does not become a competitive threat to the tying product monopoly. *Id.*

This rule is an improvement over the *Microsoft II* rule. While both rules favor potential innovation over protection against anticompetitive conduct, the Lessig rule makes it more likely that anticompetitive bundles will be rooted out. Professor Lessig’s analysis openly acknowledges the risk that a low bundling bar will allow monopolists to engage in “strategic bundling” with anticompetitive effect. *Id.* The rule also provides some guidance for courts to recognize when this type of strategic bundling is taking place.

106. See Mariotti, *supra* note 88, at 374-77.

tive market or, if the market in question is not competitive, in analogous markets.<sup>107</sup> Universal bundling, according to Areeda, indicates one of three things: consumers prefer the bundle to the stand-alones, producing the bundle creates cost savings that appeal to consumers more than freedom of product choice, or the bundle provides an improvement in quality that outweighs loss of product choice.<sup>108</sup> If the market in question is not competitive, analogous markets can be used to perform the analysis.<sup>109</sup> If bundling is predominant rather than universal, the Areeda test would still find one product rather than two.<sup>110</sup>

The primary problem with the Areeda test is that because of network effects, economies of scale, and lock-in, software markets are often not competitive.<sup>111</sup> This means that “analogous markets” will need to be found in order to perform the test. It is not clear, however, which markets are analogous to those implicated in *Microsoft*. Geographical analogues are not available because the market for Windows is worldwide and there are very few consumers who are not locked-in. Thus, while the theory behind the Areeda test makes sense, it appears to be unworkable in practice.<sup>112</sup>

Despite the problems with the Areeda test, market practices tests are a promising avenue for reform. A well-structured test relying on both manufacturer and consumer behavior in the relevant antitrust market has the potential to provide clear rules for courts to follow while also successfully differentiating between anti- and procompetitive ties.<sup>113</sup>

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107. PHILLIP AREEDA ET AL., X ANTITRUST LAW 196 (1996).

108. *Id.* at 197.

109. Analogues may include similar markets in different geographic regions; historical markets, and markets for buyers who are not “locked in.” *Id.* at 198-200.

110. Predominant bundling occurs when less than ten percent of the tying items are sold unbundled. *Id.* at 202.

111. *See supra* Section II.B.1.

112. For a detailed discussion of these problems with the Areeda test see Renato Mariotti, *Rethinking Software Tying*, 17 YALE J. ON REG. 367, 374-377 (2000).

113. The basis for such a test can perhaps be found in *United States v. Jerrold Elecs. Corp.* 187 F. Supp. 545 (E.D. Pa. 1960), *aff'd per curiam*, 365 U.S. 567 (1961). *Jerrold* concerned a community television antenna system that had four components. The defendant had market power in one of the components and was bundling it with the others. In order to decide the two-product question, the judge looked at a variety of factors including the behavior of other companies in the market, the fact that Jerrold charged customers per component rather than per system, and the fact that some customers wanted to purchase the entire system rather than the separate elements. *Id.* at 559. While the dispositive evidence was that the Jerrold system was initially unstable and needed to be sold as a unit, the way in which the opinion evaluated the behavior of market participants on both sides of the transaction was instructive.

## 2. *Economic Measurement Tests*

Another alternative is what I term “economic measurement” tests. Unlike market practices tests, which analyze the behavior of market participants for clues as to whether an arrangement is anticompetitive, economic measurement tests attempt to directly evaluate the costs and benefits of tying arrangements. Professors Janusz A. Ordover and Robert D. Willig have formulated one such test.<sup>114</sup> Their three-step approach applies to situations in which the defendant has “bottleneck” power in the primary market.<sup>115</sup> If such power exists, the first step is to determine whether the alleged exclusionary conduct creates a dangerous probability of a new monopoly in a “noncoincident” market.<sup>116</sup> This market must be clearly identified, and the challenged conduct must be the cause of the potential monopolization.<sup>117</sup> The second step is to measure profit from the challenged conduct versus profit from a hypothetical less-exclusionary alternative, with the assumption that the excluded rival continues to compete.<sup>118</sup> If the less-exclusionary conduct is more profitable, then the monopolist is sacrificing short-term profits in exchange for adverse effects on present and future competition.<sup>119</sup> The final step is to determine whether the exclusionary strategy is more profitable than the less-exclusionary strategy because it has led to the reduction of competition in the relevant market.<sup>120</sup> This step assumes that no rivals have survived.<sup>121</sup>

This test directly measures the costs and benefits of the arrangement to the monopolist. An arrangement offering higher costs than benefits, absent monopolization of a noncoincident market, will be anticompetitive.<sup>122</sup> While the spirit of the test is in line with current economic theory, it suf-

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114. Janusz A. Ordover & Robert Willig, *Access and Bundling in High-Technology Markets*, in *COMPETITION, INNOVATION, AND THE MICROSOFT MONOPOLY: ANTITRUST IN THE DIGITAL MARKETPLACE*, *supra* note 20, at 103.

115. Bottleneck power is defined as control over a component of a system in which the other components are independently useless. This bottleneck component is akin to an “essential facility.” *Id.* at 105.

116. *Id.* at 109-11. A “non-coincident market” is a market outside the primary market. Examples include the primary market at a future date, the primary market at another geographic location, or an entirely different market. The Microsoft case concerned the first of these possibilities, an attempt to control the primary market (operating systems) at some later date (a possible future in which middleware supplanted Windows). *Id.* at 110.

117. *Id.*

118. *Id.* at 110-11.

119. *Id.*

120. *Id.* at 111-13.

121. *Id.*

122. *Id.* at 109.

fers from the same implementation problems as the Areeda test. An analysis that requires courts to make suppositions about hypothetical markets and measure hypothetical costs will be difficult to put into practice.<sup>123</sup>

Other economic measurement tests include a number of proposed rules that would balance an arrangement's economic gains against its costs. Judge Wald's dissent in *Microsoft II* proposed one example. Judge Wald recommended a test that would balance the "synergies" generated by integrating two software products against the strength of evidence that distinct markets exist for the two products.<sup>124</sup> This test directly measures the benefits of the integration, but it suffers from the same implementation problems as the Ordovery-Willig test. How is a court to accurately measure the pertinent synergies? Judge Wald suggested using "affidavits, consumer surveys . . . as well as testimony from experts."<sup>125</sup> This method provides only marginally more structure than the unstructured rule of reason test. It is hard to disagree with the majority's statement that the test "is not feasible in any predictable or useful way."<sup>126</sup>

Other tests require similar balancing acts.<sup>127</sup> One commentator has suggested a test for technologically dynamic markets that balances increased demand or reduced costs created by the integration against losses to consumer welfare resulting from reduced competition caused by the in-

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123. As one observer noted of the Ordovery-Willig test:

[M]y major question concerns the practicability of prongs 2 and 3. Though they may be sensible in principle, how much practical guidance do they provide to antitrust policy makers? How would they help . . . decide whether Microsoft should or should not be forced to allow the PC manufacturers to delete its Explorer browser from their licensed software. How would prongs 2 and 3 help . . . decide whether Microsoft should be allowed to bundle its browser with Windows 98 or instead be required to sell the browser separately. I fear that an understanding of prongs 2 and 3 will not provide much help in addressing these questions.

Lawrence J. White, *Microsoft and Browsers. Are the Antitrust Problems Really New?*, in COMPETITION, INNOVATION, AND THE MICROSOFT MONOPOLY: ANTITRUST IN THE DIGITAL MARKETPLACE, *supra* note 20, at 137, 150.

124. *United States v. Microsoft*, 147 F.3d 935, 958-59 (D.C. Cir. 1998) (Wald, J., dissenting).

125. *Id.* at 958 n.3.

126. *Microsoft II*, 147 F.3d at 952.

127. See e.g., Renato Mariotti, *Rethinking Software Tying*, 17 YALE J. ON REG. 367 (2000) (balancing the gains in innovation and reduction in transaction costs for consumers who want both the tying and tied product against the costs to consumers who only want the tying product)

tegration.<sup>128</sup> As with Judge Wald's test, this formulation asks the right question: does the integration increase consumer welfare? But again, it is difficult to imagine the test being applied in practice. The problem with these tests is that the variables to be balanced are very difficult to measure.

Economic measurement tests are attractive because rather than using proxies to determine whether conduct is anticompetitive, they strive to directly measure competitive effect. The problem with these tests, at least those proposed to date, is that they are difficult to put into practice. This is because they require courts either to perform complicated economic analyses of purely hypothetical markets and practices, or to make measurements that may be inexact at best.

#### IV. CONCLUSION: THE PRESSING NEED TO FASHION A NEW TEST

Microsoft has already raised fresh tying concerns by bundling an instant messaging program with its new operating system.<sup>129</sup> This type of action is facilitated by the overly vague D.C. Circuit rule of reason test for tying cases. A more structured rule is needed to make the bounds of legal integration clear. While economic measurement tests closely track current economic theory, they are difficult for courts to apply. A well-designed market practices test relying on both manufacturer and consumer behavior in the relevant antitrust market provides the best chance to generate accurate, consistent, and predictable jurisprudence in this arena.

In markets that tend toward monopoly, it is likely that this will not be the last time the tying issue is litigated. Lacking a definitive standard, courts will not be able to provide consistent outcomes in these kinds of cases. Courts should move quickly to cut through the confusion left in the wake of *Microsoft III* or face continued problems with product integration.

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128. Sidak, *supra* note 35. Sidak proposes a four-part test for determining whether an integration in a technologically dynamic market violates the antitrust laws. The first step is to determine whether the market is technologically dynamic. If it is not, *Jefferson Parish* will apply. If it is, the next step is to determine whether consumers will benefit from the integration, with benefits measured by increased consumer demand, lowered costs of production, or both. These benefits are not measured in comparison with a hypothetical world in which the products have not been integrated. The only question is whether some actual benefits have been created by the integration. The third step is to determine whether the integration will preserve a monopoly over the tying product market. If it will, the fourth step is to balance the integration's consumer benefits against the losses in consumer welfare caused by any reduction in competition. *Id.* at 28-33.

129. Einer Elhague, *A Smart Move on Microsoft*, BOSTON GLOBE, Sept. 11, 2001, at C4; Joseph Menn, *Microsoft, Officials to Seek Mediator*, L.A. TIMES, Oct. 12, 2001, at 152.