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IDENTIFYING MONOPOLISTS' ILLEGAL CONDUCT UNDER THE SHERMAN ACT

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Upon surveying antitrust enforcement pursuant to Section 2 of the Sherman Act, Thomas Piraino concludes that the standard for determining violations has become muddled and confusing. He proposes a new standard to assist courts in distinguishing beneficial from harmful conduct, one that focuses on the monopolist's substantive competitive purpose. Under that standard, conduct should be illegal under Section 2 if it makes no economic sense other than as a means of perpetuating or extending monopoly power. Piraino illustrates the benefits of this proposed standard by applying it to the Microsoft litigation.

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Introduction

The most significant antitrust cases of the last century have been brought under Section 2 of the Sherman Act (Section 2), which makes it illegal for a firm to "monopolize, or attempt to monopolize," interstate commerce.[1] In cases involving the Standard Oil Company, the Aluminum Company of America (Alcoa), IBM, AT&T, and Eastman Kodak, the federal courts have established certain basic principles of monopoly regulation. Decisively rejecting the notion that monopolies should be deemed illegal in and of themselves, the courts have found monopolists liable under Section 2 only when they have engaged in predatory conduct.[2] The courts have failed, however, in their efforts to address the more critical issue in monopolization cases: identifying the types of anticompetitive conduct necessary to establish a Section 2

[1] 15 U.S.C. § 2 (1994).
[2] See infra notes 94-117 and accompanying text (describing history of Section 2 enforcement through 1969).

violation.[3] As a result, Section 2 is now regarded as the "most elusive of the antitrust laws,"[4] and Section 2 litigation has provided firms with little guidance as to how to comply with the law.[5]

The analytical problem in Section 2 cases stems from the fact that there is a thin line between beneficial and adverse competitive conduct by large firms. One commentator has explained that "[a]ggressive *competitive* conduct by a monopolist, which is beneficial to consumers, and aggressive *exclusionary* conduct by a monopolist, which is deleterious to consumers, look alike."[6] Viewed from different perspectives, the same conduct by a monopolist can appear either to benefit or to harm consumers. For example, the federal government, nineteen states, and the District of Columbia are currently alleging that the Microsoft Corporation violated Section 2 by, among other things, integrating its Internet browser into its Windows operating system.[7] The District Court for the District of Columbia recently concluded that such conduct hurts consumers by making competing browsers less available.[8] However, Microsoft has repeatedly argued that the integration of its browser into Windows constitutes a technical advance that benefits consumers.[9]

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[3] A recent *New York Times* opinion column asked: "When does the legitimate attempt to capitalize on victory in a competitive race become an illegal abuse of market power? So far, nobody has laid down the ground rules." Paul Krugman, Master of the Game, N.Y. Times, Jan. 16, 2000, § 4 (Week in Review), at 17.

[4] Stanley D. Robinson, Recent Antitrust Developments—1979, 34 Rec. Ass'n B. City N.Y. 671, 671 (1979) (discussing cases in late 1970s and development of meaning of monopolization).

[5] See infra notes 130-95 and accompanying text (describing courts' confusing Section 2 standards).

[6] Roger D. Blair & Amanda K. Esquibel, Some Remarks on Monopoly Leveraging, 40 Antitrust Bull. 371, 372 (1995).

[7] See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139); see also Complaint at *19, *Microsoft III* (No. Civ.A.98-1232), available in 1998 Extra Lexis 89 (stating that Microsoft's actions "deter innovation, exclude competition, and rob customers of their right to choose among competing alternatives").

[8] In *Microsoft III*, Judge Thomas Penfield Jackson concluded that Microsoft's conduct "harmed consumers in ways that are immediate and easily discernible." *Microsoft III*, 84 F. Supp. 2d at 111 (findings of fact).

[9] See, e.g., Letter from Bill Gates to Customers, Partners, and Shareholders of Microsoft, reprinted in Wall St. J., Nov. 8, 1999, at A13 ("At the heart of this case is whether a successful American company can continue to improve its products for the benefit of consumers. This is precisely what Microsoft did by developing new versions of the Windows operating system with built-in support for the Internet."). Commenting on the decision by the district court, a Microsoft spokesman recently argued that "[t]he judge indicates that including technology at no extra cost is somehow anticompetitive. Yet the marketplace has clearly demonstrated that this is not the case." John R. Wilke et al., The Row Ahead: Microsoft Judge Faces Demands of Market and of Monopoly Law, Wall St. J., Apr. 4, 2000, at A1.

One observer has concluded that "the Microsoft dispute will define Washington's attitude toward monopolies in the twenty-first century in much the same way that the Standard Oil case did at the beginning of [the twentieth]."[10] Indeed, the federal courts are now at a critical juncture in their approach to Section 2 standards. Current economic conditions pose an enormous risk to courts attempting to regulate high-technology monopolies. Technological advances have been responsible for the surge in productivity that has caused a "once-in-a-generation shift in inflation expectations" in the 1990s.[11] Some economists believe that "computers and the Internet are generating the long-term efficiencies that in the past came with the spread of railroads, the invention of electricity and the proliferation of cars and trucks."[12] It is clear that monopolists such as Microsoft have helped to promote technological advances in such industries. Thus, undue regulation of these firms could put in jeopardy many of the economic achievements of the late twentieth century. However, these companies also may put future innovation at risk, because, in today's high-technology economy, they can more easily achieve and retain control over essential gateways to particular markets.[13] Microsoft already holds such dominance over computer operating systems.[14] Amazon and Yahoo! dominate the Internet business, and AT&T and America Online (together with its recently announced merger partner, Time Warner (AOL-Time Warner)) are vying for control over the broadband networks which consumers must access for high-speed Internet connections.[15] The current case against Microsoft signals the govern-

[10] John Cassidy, Rich Man, Richer Man, The New Yorker, May 11, 1998, at 98; see also Beltway on Top, Wall St. J., June 9, 2000, at A18 ("This has become a case not only about Microsoft, but about the future of antitrust.").

[11] David Wessel, Muddied Waters: New Inflation Report Makes Fed's Debate over Rates Tougher, Wall St. J., June 17, 1999, at A1.

[12] Louis Uchitelle, Big Increases in Productivity by Workers, N.Y. Times, Nov. 13, 1999, at C1.

[13] As one commentator recently pointed out, "[i]n the New Economy, monopoly is becoming the rule, not the exception." Alan Murray, Changing Code: For Policy Makers, Microsoft Suggests Need to Recast Models, Wall St. J., June 9, 2000, at A1.

[14] Microsoft controls over 90% of the market for computer operating systems. See Thomas A. Piraino, Jr., An Antitrust Remedy for Monopoly Leveraging by Electronic Networks, 93 Nw. U. L. Rev. 1, 8 (1998). Dominant firms are also the norm in other high-technology markets. "Quicken has 80% of the financial-software market. Netscape once boasted of having 90% of the browser business. Intel still clings to 76% the [sic] microprocessor business. America Online, Lotus Notes and Oracle all dominate their respective markets." Alan Reynolds, The Monopoly Myth, Wall St. J., Apr. 9, 1999, at A12.

[15] As a commentator on the AOL-Time Warner merger recently pointed out, "[t]he danger for the consumer comes when big companies control key economic bottlenecks, and use them to garner extraordinary profits at the consumer's expense." Alan Murray, In the New Economy, You've Got Scale, Wall St. J., Jan. 17, 2000, at A1. With its ownership of Time Warner's cable systems, AOL-Time Warner "will control the screen you see on

ment's determination not to allow such high-technology monopolies to achieve a stranglehold over the critical gateways to the digitized economy.

The federal courts' challenge in the new century will be to develop an effective means of determining when such monopolists' conduct is beneficial or harmful. High-technology firms, antitrust practitioners, and the public are all searching for an approach that will deter monopoly conduct harmful to consumers without discouraging firms from continuing to innovate in ways that benefit consumers. This Article sets forth a new standard for Section 2 conduct that will achieve such goals. Part I of the Article explains the economic effects of monopolies that should guide the development of a new Section 2 standard. Part II summarizes the inconsistent Section 2 standards adopted by the federal courts to date. Part III sets forth a proposed approach to Section 2 that will distinguish more effectively between beneficial and harmful monopolistic conduct. Part IV explains how the approach would apply to specific types of monopolistic conduct. Part V describes the types of remedies that the courts should adopt under the proposed approach, and Part VI explains how the proposed approach would resolve the government's current Section 2 case against Microsoft.

I
THE ECONOMIC EFFECTS OF MONOPOLIES

The search for a new approach to Section 2 must begin with an understanding of the economic effects of industrial concentration in today's economy. Monopoly power has been defined as "the power to control prices or exclude competition."[16] The existence of monopoly power "ordinarily may be inferred [when a defendant has] the predominant share of the market."[17] A market share in excess of seventy percent has typically been deemed sufficient to support an inference of monopoly power.[18] Firms that hold such dominant positions in

your computer and your television set as you enter the digital world." Id. Similarly, with its purchase of the cable systems of TCI and Media One, AT&T has "essentially bet its future on using its own cable systems as a high-speed Web channel into consumers' homes." Martin Peers et al., Media Blitz: AOL, Time Warner Leap Borders to Plan a Mammoth Merger, Wall St. J., Jan. 11, 2000, at A1; see also Bob Davis & Gerald F. Seib, Policing a Wildfire: Technology Will Test a Washington Culture Born in Industrial Age, Wall St. J., May 1, 2000, at A1.

16 United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 391 (1956); see also Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 272 (2d Cir. 1979).

17 United States v. Grinnell Corp., 384 U.S. 563, 571 (1966).

18 See *E.I. du Pont de Nemours*, 351 U.S. at 379, 391 (inferring monopoly power from 75% market share); Heatransfer Corp. v. Volkswagenwerk, A.G., 553 F.2d 964, 981 (5th

their markets have a unique ability to affect competition in both beneficial and harmful ways.

A. *Harmful Effects of Monopolies*

From the days of early English common law, monopolies have been considered harmful because they raise prices, reduce output and eliminate diversity of choice.[19] Modern economists emphasize that monopolies misallocate and waste economic resources.[20] Since monopolists can price products in excess of the level that would prevail in a competitive market, they are able to bring about a transfer of wealth from consumers to themselves.[21] Furthermore, a "deadweight loss" occurs in monopoly markets because a monopolist has the ability unilaterally to reduce output in order to increase prices.[22] Since the monopolist makes no profit on the output it does not produce, a portion of the wealth taken away from consumers is not transferred to the monopolist, but is simply "lost."[23]

Economists have identified "rent-seeking" as another adverse effect of monopolies.[24] Firms are willing to spend a certain amount of resources to obtain, maintain, or expand a monopoly. A large amount

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Cir. 1977) (noting that 71% to 76% market share supports inference); United States v. Aluminum Co. of Am., 148 F.2d 416, 424 (2d Cir. 1945) (stating that 90% market share supports inference); Illinois ex rel. Hartigan v. Panhandle E. Pipe Line Co., 730 F. Supp. 826, 902 (C.D. Ill. 1990) (observing that for market shares over 70%, "courts have simply inferred the existence of monopoly power without specifically examining . . . control over prices [or] competition").

19 In Darcy v. Allin, 77 Eng. Rep. 1260 (K.B. 1603), which involved the monopolization of the playing card market, Lord Coke concluded that the vices of monopoly were that:

> [First,] the price of the . . . commodity will be raised, for he who has the sole selling of any commodity, may and will make the price as he pleases . . . .
> [Second,] the [quality of the] commodity is not so good and merchantable as it was before: for [he who has] the sole trade, regards only his private benefit, and not the common wealth[; and
> Third,] [i]t tends to the impoverishment of [those] who before, by the labour of their hands in their art or trade, had maintained themselves and their families, who now will of necessity be constrained to live in idleness and beggary . . . .

Id. at 1263.

20 See Herbert Hovenkamp, Antitrust's Protected Classes, 88 Mich. L. Rev. 1, 6 (1989) (describing wealth transfer from consumers to monopolists and traditional "deadweight loss" from monopoly).

21 See id.

22 See id.

23 See id. at 14 (describing "wealth that is taken away from consumers but which is not given to the monopolist"). Some economists argue that society as a whole is not harmed by the mere transfer of wealth from consumers to monopolists, because there is no efficiency loss. The only loss to society occurs from the deadweight loss, which eliminates wealth that would otherwise be generated if resources were allocated more efficiently. See id. at 14.

24 See id. at 15.

of such rent-seeking is inefficient and represents a wasted resource.[25] For example, the costs incurred by a monopolist in coercing its customers to purchase a less desirable product "tied" to a monopoly product generate no efficiency gains.[26] Similarly, a monopolist's costs in forcing customers not to purchase competing products from other firms represent a net economic loss to society.[27]

Many antitrust commentators believe that monopolists have less incentive to engage in innovative product development than firms which lack such market power. Judge Learned Hand emphasized in *United States v. Aluminum Co. of America (Alcoa)*[28] that monopoly "deadens initiative, discourages thrift and depresses energy; . . . [and] that the spur of constant stress is necessary to counteract an inevitable disposition to let well enough alone."[29] Some economic studies have indicated that monopolists engage in less research and development than firms in competitive markets and that new products are developed more efficiently by smaller firms.[30] Many economists have concluded that competition in innovation is more critical to long-term economic efficiency than is price competition.[31] Continuous innovation expands output, reduces prices, improves quality and productivity, and increases the range of goods available to consumers. Thus, the adverse effect of monopolies on innovation should be of greatest antitrust concern. For example, in the government's current case against Microsoft, the critical issue is not monopoly pricing (for Microsoft has foregone price increases in order to maintain its monop-

[25] See id. at 16 (describing how monopolists "spend at least part of their anticipated monopoly returns in the enterprise of creating or retaining the monopoly itself").

[26] See infra notes 148-80 and accompanying text (describing judicial approach to tying arrangements).

[27] See infra notes 145-47 and accompanying text (describing courts' approach to exclusive dealing arrangements).

[28] 148 F.2d 416 (2d Cir. 1945).

[29] Id. at 427.

[30] See Douglas H. Ginsburg, Antitrust, Uncertainty, and Technological Innovation, 24 Antitrust Bull. 635, 649 (1979) ("Studies have indicated . . . that small firms are more efficient than larger ones in conducting research."); Mark Green, Have the Antitrust Laws Promised Too Much and Accomplished Too Little? Answer: Yes, 46 Antitrust L.J. 752, 755 (1977) ("The best studies of size and innovation demonstrate that moderate sized firms are the most innovative—not our largest firms who like to coast with a comfortable status quo.").

[31] The economist Joseph Schumpeter concluded that price competition

> is not that kind of competition which counts but the competition from the new commodity, the new technology, the new source of supply, the new type of organization . . . —competition which commands a decisive cost or quality advantage and which strikes not at the margins of the profits and the outputs of the existing firms but at their foundations and their very lives.

Joseph A. Schumpeter, Capitalism, Socialism and Democracy 84 (3d ed. 1950).

oly power in computer operating systems),[32] but the extent to which Microsoft has used such power to stifle innovation in operating systems and their related applications.[33]

B. *Beneficial Effects of Monopolies*

The federal courts have found it difficult to regulate monopolies because monopolies can have beneficial as well as adverse economic effects. Some markets, in fact, owe their very existence to the efficiencies made possible by monopolies. This is particularly true in "network" industries. A network includes any system "that structures and facilitates the exchange of information, money, goods, or services among individuals or firms."[34] Examples include computer operating systems, stock exchanges, real estate multiple listing services, and ATM and credit card networks.[35] When a single network dominates a market, it can establish uniform standards of interchange to be followed by all members of the network. Thus, a monopoly network can ensure that all users are able to "plug in" and use the network's services in the same manner. As one commentator has pointed out, "the optimal number of 'Internets' in a free market economy is one."[36]

Monopolies do not always cause consumer prices to increase. In some cases, monopolies actually make price reductions more likely. When economies of scale are high, monopolists can reduce their costs as their output expands.[37] Some studies have demonstrated that increases in firm size are associated with reductions both in unit cost

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32 See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 110-11 (D.D.C. 1999) (findings of fact) ("The inclusion of Internet Explorer with Windows at no separate charge . . . reduced the cost to the public. . . . These actions thus contributed to improving the quality of Web browsing software, lowering its cost, and increasing its availability, thereby benefiting consumers."), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

33 See Steve Lohr, Open Windows: The New Math of Monopoly, N.Y. Times, Apr. 9, 2000, § 4 (Week in Review), at 1 ("[I]nnovation, much more than price, is what the Microsoft case is about.") (quoting Daniel Rubinfeld, chief economist of Department of Justice's Antitrust Division until 1998).

34 William H. Pratt et al., Refusals to Deal in the Context of Network Joint Ventures, 52 Bus. Law. 531, 533 (1997).

35 See Piraino, supra note 14, at 1.

36 Mark A. Lemley, Antitrust and the Internet Standardization Problem, 28 Conn. L. Rev. 1041, 1045 (1996).

37 See Lawrence A. Sullivan, Monopolization: Corporate Strategy, the IBM Cases, and the Transformation of the Law, 60 Tex. L. Rev. 587, 616 (1982) (pointing out that leading firm's costs may "decrease significantly faster than the costs of others in the industry as it increases its total output").

and in price.[38] Thus an aggressive enforcement policy against monopolies could have the perverse effect of raising production costs and, consequently, consumer prices.

Some economists have argued that the excess returns generated by monopolies promote innovation. Joseph Schumpeter believed that the potential for superior returns gives firms an incentive to develop new products in their quest for monopoly power; furthermore, the fear of losing such power guarantees that firms will continue to engage in innovation even after they have achieved a monopoly. The incentives to obtain and retain monopoly power, Schumpeter argued, more than offset the social cost of the higher prices that monopolists can charge.[39] The quest for monopoly power has a particularly beneficial effect in "winner-take-all" high-technology industries, in which the first company to commercialize an innovation often obtains the greatest market share. As one commentator explained recently, "[l]ike purchasers of lottery tickets, companies seem even more eager to compete when they know the winner will take all. Instead of competing on price, they compete by innovating, and trying to leapfrog old technologies."[40] Other commentators have pointed out that the process of innovation includes the entire range of activities from the initial generation of an idea by an inventor through its ultimate commercialization.[41] That process often requires long-term capital investments that can be made only by monopolists who have the pricing power to obtain higher financial returns.

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38 See Harold Demsetz, The Trust Upon Which Antitrust Stands, 46 Antitrust L.J. 818, 821 (1977) ("My studies indicate that large firms in concentrated industries have lower cost than medium and small firms in those industries . . . .").

39 See Schumpeter, supra note 31, at 81-106 (discussing process of creative destruction as well as monopolistic practices); see also United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 26 (D.D.C. 1999) (findings of fact) ("[A]lthough Microsoft could significantly restrict its investment in innovation and still not face a viable alternative to Windows for several years, it can push the emergence of competition even farther into the future by continuing to innovate aggressively."), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139); William J. Kolasky, Jr. & William F. Adkinson, Jr., Single Firm Conduct: Who's Big? What's Bad?, Presentation Before the American Bar Association Section of Antitrust Law 30 (Apr. 15, 1999) (on file with author) ("If the ultimate market outcome is likely to be a monopoly of the surviving firm, with the opportunity to earn substantial rents, competition among firms to be the survivor will be intense.").

40 See Murray, supra note 13, at A1.

41 See, e.g., Ginsburg, supra note 30, at 647 ("The process of innovation . . . may embrace a range of activities from the generation of an idea by an inventor to its subsequent commercialization by an entrepreneur.").

Many commentators have asserted that monopoly power is simply a reflection of a firm's ability to meet consumer demand.[42] Firms will gain market share at the expense of their rivals, and they will discourage new entry, if they offer "a good product at a price that other firms are unable to beat."[43] There is, in fact, a body of empirical work suggesting that industrial concentration occurs because of large firms' superior efficiency.[44] Robert Bork has stated that "any size a company achieves by internal growth is the most efficient size for that company .... If consumers choose to purchase more from one company than from its rivals, that firm is, precisely to that degree, the most efficient in the market."[45] Judge Easterbrook has pointed out that "[t]he more successful a firm is at reducing the cost of its product or making that product more attractive to consumers, the more it sells. In the end a very successful firm will wind up with the whole market."[46] Ford Motor Company's success in the early twentieth century is a good example of this effect. Ford's market share expanded because it was able to reduce the price of the Model T to a point where it became a "mass consumer object."[47] The price of the car fell from $950 in 1910 to $360 in 1916. By 1924, the cost of a Model T had fallen to $290, and a farmer could buy the car for less than the cost of a good team of horses. As a result, Ford ultimately achieved a ninety-six percent share of the relevant automobile market.[48]

C. The Persistence of Monopoly Power

In adopting a new Section 2 standard, the courts must take into account the extent to which monopolies are likely to persist after they have been achieved. If monopolies were relatively transitory, the

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[42] See, e.g., John G. McGee, Why Not "Deregulation" for Antitrust?, 46 Antitrust L.J. 777, 785 (1977) ("Antitrust's threat to consumers is greatest precisely when the superiority of performance is greatest .... Superior firms are being 'turned on when they win.'").

[43] Id.

[44] See Yale Brozen, Concentration and Structural and Market Disequilibria, 16 Antitrust Bull. 241, 248 (1971) ("Concentrated industries are concentrated because that, apparently, is the efficient way to organize those industries."); Harold Demestz, Industry Structure, Market Rivalry, and Public Policy, 16 J.L. & Econ. 1, 7 (1973) (arguing that large firms in concentrated industries "seem better able to produce at lower cost than their competitors").

[45] Robert H. Bork, Antitrust and the Theory of Concentrated Markets, 46 Antitrust L.J. 873, 878 (1977).

[46] Frank H. Easterbrook, On Identifying Exclusionary Conduct, 61 Notre Dame L. Rev. 972, 973 (1986).

[47] Sir Peter Hall, Cities in Civilization 413 (1998).

[48] See id.

courts would not need to be concerned with Section 2 enforcement.[49] Competition in price and innovation occurs while firms are vying for monopoly power, and as long as a firm feels that its market power can be challenged, it will continue to seek efficiency gains even after it achieves a monopoly.[50] However, when a monopoly is well entrenched, a firm may not feel compelled to continue to pursue efficiency gains.[51] Such firms are more likely to engage in the most harmful monopolistic conduct, including raising prices, rent seeking, deferral of innovation, and reductions of output that result in deadweight economic losses.

Most economists have concluded that the natural workings of the market eventually will overcome monopolies. Joseph Schumpeter argued that capitalist markets are characterized by periodic "waves" associated with the rise of new technologies. Firms can acquire monopoly power temporarily when they control a new technology at the beginning of each wave, but ultimately their monopoly rents will disappear as innovations diffuse more widely among other firms in the market.[52] Schumpeter termed this process, in which monopoly power rises and falls, "creative destruction."[53] More recent "chaos" and "entropy" theories similarly emphasize that large organizations become more resistant to change as they mature and thus are less able to respond to new competitive pressures.[54] Thus, monopoly power ultimately may be self-defeating. Mature monopolists may price their products at a level that yields the highest short-run profit but encourages new entry on a long-term basis.[55] Such firms may also fail to recognize new technologies in time to respond with their own product

49 As the Tenth Circuit stated in Reazin v. Blue Cross & Blue Shield of Kansas, Inc., 899 F.2d 951, 968 (10th Cir. 1990), "[t]o be meaningful for antitrust purposes, [monopoly power] must be durable."

50 See 2 Phillip Areeda & Donald F. Turner, Antitrust Law § 505 (1978) ("The significance of market power depends not only on its degree but also on its durability.").

51 See Beltway on Top, supra note 10, at A18 ("The only incentive to produce anything is the possession of *temporary* monopoly power."(emphasis added)).

52 See Hall, supra note 47, at 296-97 (describing "Schumpeterian" explanation of process in which "temporary monopoly rents" decline over time).

53 Schumpeter, supra note 31, at 83.

54 See Butler Shaffer, In Restraint of Trade: The Business Campaign Against Competition, 1918-1938, at 41-42 (describing how self-preservation becomes driving concern for large institutions).

55 See Lawrence A. Sullivan, Economics and More Humanistic Disciplines: What Are the Sources of Wisdom for Antitrust?, 125 U. Pa. L. Rev. 1214, 1225 (1977) (describing prices that yield "the highest short run monopoly profit, but also do[ ] the most to attract entry").

innovations.[56] A monopolist's power is particularly threatened in today's economy, in which worldwide competition stemming from the opening of new markets has accelerated technological change.[57]

However, even if the market eventually will displace a monopoly, the courts must be concerned with the length of the destructive process. Consumer welfare can be harmed significantly during the period in which a monopoly persists.[58] Certain network industries now pose special antitrust risks because of their ability to maintain their monopoly power for an extended period. Networks tend to vest a durable form of monopoly power in their owners. Once a network standard becomes accepted, it is difficult to convince consumers to take a chance on moving to another network, even if it is technically superior.[59]

The monopoly advantages of networks are referred to as "network externalities."[60] Network externalities occur when the value of a

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56 Thus, U.S. Steel's market share fell from 62% in 1901 to 40% by 1920, and International Harvester's share fell from 85% in 1902 to 64% in 1918. See Shaffer, supra note 54, at 45.

57 See David Balto & Robert Pitofsky, Antitrust and High-Tech Industries: The New Challenge, 43 Antitrust Bull. 583, 585 (1998) ("Industry leaders may have a relatively precarious and temporary hold on large market shares when product generations are measured in only a few years and whole new industries can be created at any time."); Thomas L. Friedman, A Manifesto for the Fast World, N.Y. Times, Mar. 28, 1999, § 6 (Magazine), at 40 (describing how globalization leads to integration of information technology). Several antitrust commentators have pointed out that the marketplace can remedy the problem of monopoly more effectively than the judicial system. Harold Demsetz has stated that "competition is considerably less prone to make mistakes in this disciplining process than are the courts of the land." Demsetz, supra note 38, at 820. Judge Easterbrook has explained that "[a] practice once condemned is likely to stay condemned, no matter its benefits. A monopolistic practice wrongly excused will eventually yield to competition, though, as the monopolist's higher prices attract rivalry." Frank H. Easterbrook, The Limits of Antitrust, 63 Tex. L. Rev. 1, 15 (1984).

58 As one commentator has pointed out, "[t]o say . . . that automobiles eventually replaced horses is to ignore the impact to welfare of innovation delayed." Willow A. Sheremata, Barriers to Innovation: A Monopoly, Network Externalities, and the Speed of Innovation, 42 Antitrust Bull. 937, 963 (1997). U.S. Steel, for example, dominated the American steel industry for more than 75 years. See Walter Adams & James W. Brock, Areeda/Turner on Antitrust: A Hobson's Choice, 41 Antitrust Bull. 735, 742-43 (1996).

59 See John E. Lopatka & William H. Page, Microsoft, Monopolization, and Network Externalities: Some Uses and Abuses of Economic Theory in Antitrust Decision Making, 40 Antitrust Bull. 317, 336 (1995) (explaining how consumers can become "locked in" to technologically inferior products); Sheremata, supra note 58, at 954 ("[T]here is every reason to believe that consumers will get 'locked into' the first product that appears on a new platform, even when the product is technologically inferior.").

60 See, e.g., Sheremata, supra note 58, at 952 ("Direct network externalities exist when the value of a good to any user is a function of network size."). Some antitrust enforcers and commentators have argued that, despite network externalities, the rapid change that occurs in high-technology industries today is likely to displace network monopolies rather quickly. Indeed, the Federal Trade Commission's (FTC) proposed consent order in Intel Corp., Trade Reg. Rep. (CCH) ¶ 24,575 (Aug. 3, 1999), acknowledges that "[t]he computer

product is positively correlated with the number of people who use it.[61] Telephone and cable systems, computer networks, Internet access services, and credit card and ATM systems all become more efficient as they increase in size. Because the necessary infrastructure is already in place, the incremental cost of adding a new member is less than the incremental benefit of having an additional user of the network. As a network expands, its users can communicate with a greater number of other users. A telephone system is more valuable if it is connected to a larger number of telephones. An ATM system is more attractive to consumers if several different charge cards can be used at a single access point. Consumers subscribe to a dominant Internet access provider such as AOL because they want to be able to communicate with the widest range of other users.[62] In the case of credit card systems, "the more cardholders in the system, the more attractive the system is to merchants .... [T]he more merchants in the system, the more attractive the card is to cardholders."[63] Network externalities are particularly potent in Internet markets, which link thousands or millions of users. Companies such as eBay Inc. dominate consumer markets on the Internet simply because they allow sellers to reach the most buyers and buyers reach the most sellers: "Business-to-business exchanges will tend to work in the same way, with the largest player quickly becoming dominant."[64]

A network allows its owner to develop common standards for communication among its members.[65] Once established, network standards become so pervasive that they are very difficult to dislodge.

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industry is characterized by short, dynamic product cycles, which are generally measured in months." Some commentators have claimed that network externalities can be surmounted and that new systems may ultimately displace monopolies such as Microsoft's or "coexist with them in equilibrium." Lopatka & Page, supra note 59, at 349; see also, e.g., Sheremata, supra note 58, at 962 (citing Lopatka & Page, supra note 59, at 321, 370).

61 See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 20 (D.D.C. 1999) (findings of fact) ("A positive network effect is a phenomenon by which the attractiveness of a product increases with the number of people using it."), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139); Mark A. Lemley & David McGowan, Legal Implications of Network Economic Effects, 86 Cal. L. Rev. 481, 483 (1998); Sheremata, supra note 58, at 952.

62 See Murray, supra note 15, at A1 ("Network businesses often become more valuable to their customers the bigger they get. Adolescents want AOL so they can chat with their buddies."). Treasury Secretary Lawrence Summers recently used the example of a fax machine to describe network externalities: "If there is only one, 'it is best used as a doorstop.' But if there are 100,000, 'that is 10 billion possible connections.'" Murray, supra note 13, at A1.

63 National Bancard Corp. v. VISA U.S.A., Inc., 596 F. Supp. 1231, 1260 (S.D. Fla. 1984), aff'd, 779 F.2d 592 (11th Cir. 1986).

64 See Murray, supra note 13, at A8.

65 See supra notes 34-36 and accompanying text (describing how networks operate).

Such standards create a "winner-take-all" effect.[66] Indeed, because of the standardization effect, many networks in high-technology markets constitute "natural monopolies."[67] In their markets, it is not feasible for more than one network to operate effectively. The tendency of network markets to coalesce around a single standard is often referred to as the "tipping" effect.[68] Once a particular standard gains enough acceptance to be perceived by most consumers as the ultimate technological winner, the market "tips" and consumers migrate to that standard en masse.[69] In the video recording market, the VHS format achieved such an advantage over the Beta format,[70] and in computer operating systems, Microsoft prevailed over IBM, Apple Computer, and Novell.[71]

Networks also benefit from indirect externalities, which occur when complementary products are used in connection with a network. This effect is apparent in the market for computer operating systems. With over ninety percent of the computer operating system market,[72] Microsoft has an installed base which encourages independent

[66] See Lohr, supra note 33, § 4, at 1 (observing that network markets "tend to naturally evolve toward one or two dominant companies (think Cisco in routers for Internet data and eBay in online auctions). They control the technology standards in their markets.").

[67] "In industries characterized by networks, even monopoly is seen by some observers as inevitable and merely an accommodation to consumer demand for a compatible technical standard." Balto & Pitofsky, supra note 57, at 604.

[68] See Sheremata, supra note 58, at 958.

[69] See id. (describing how "[o]ne standard eventually dominates" in network markets); Paul Krugman, Rights of Bill, N.Y. Times, Apr. 9, 2000, § 4 (Week in Review), at 17 ("High-tech competition naturally and necessarily looks like a series of winner-take-all tournaments, in which 'all' means a temporary monopoly that lasts until something dramatically better comes along.").

[70] See Sheremata, supra note 58, at 958 (pointing out that "VHS dominated Beta formats").

[71] See Robert Prentice, Vaporware: Imaginary High-Tech Products and Real Antitrust Liability in a Post-Chicago World, 57 Ohio St. L.J. 1163, 1229 n.270 (1996). The tipping effect is particularly strong in Internet markets. The Internet has been referred to as a "land grab," in which the first dominant player in a particular market "walks off with most of the booty." Bernard Wysocki Jr., No. 1 Can Be Runaway Even in a Tight Race, Wall St. J., June 28, 1999, at A1. As one commentator has pointed out, "[i]t's all about being the lead player, and success breeds success. . . . This process is self-reinforcing, so the strong get stronger." Id. (comments of Robert H. Frank). Furthermore, the number one player in Internet markets often reaps the greatest stock market valuations, giving it an advantage over its competitors in pursuing acquisitions to consolidate its market power. Id. Some consultants refer to the competitive difficulties of secondary players in Internet markets as "the plight of the silver medalist." Id.

[72] See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 19 (D.D.C. 1999) (findings of fact) (stating that:

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

software vendors to write compatible programs for applications such as databases, games, spreadsheets, word processing, electronic mail, and Internet browsers.[73] Programmers do not want to spend a lot of time and money developing applications for operating systems that do not have a large installed base, because demand for such applications is low. Thus, Windows users are unlikely to switch to other systems, not simply because they would have to invest the time to learn a new program, but also because Windows allows them to choose from among a much larger number of compatible applications.[74] Since the "switching costs" for consumers in network markets are so high, they are, in a very real sense, "locked in" to their current network. The result is a "positive feedback" process in which more and more applications are written for a dominant operating system such as Windows.[75] Consumers are then even more attracted to the system because of its compatibility with so many applications. "This, in turn, encourages more developers to write programs, which attracts more customers, and so on."[76]

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87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

73 See United States v. Microsoft Corp. (*Microsoft II*), 147 F.3d 935, 938 (D.C. Cir. 1998) (reversing grant of preliminary injunction prohibiting Microsoft from requiring computer manufacturers to license its Internet browser as well as its operating system).

74 An established network standard also has an advantage over new standards because consumers expect the established standard to continue to prevail. They are therefore reluctant to invest the time and financial resources necessary to switch to a different standard. See Lemley, supra note 36, at 1050-51.

75 As the Department of Justice pointed out in *Microsoft III*, "the durability of Microsoft's monopoly is in large measure due to network effects that cause users to demand a ubiquitous operating system and that induce applications developers to write for that platform." Memorandum of the United States in Support of Motion for Preliminary Injunction at *145, *Microsoft III* (No. Civ.A.98-1232), available in 1998 Extra Lexis 92.

76 Piraino, supra note 14, at 17 (internal quotation marks omitted); see also *Microsoft III*, 84 F. Supp. 2d at 20 (findings of fact) (stating that:

> The main reason that demand for Windows experiences positive network effects, however, is that the size of Windows' installed base impels [independent software vendors] to write applications first and foremost to Windows, thereby ensuring a large body of applications from which consumers can choose. The large body of applications thus reinforces demand for Windows, augmenting Microsoft's dominant position and thereby perpetuating [independent software vendors'] incentives to write applications principally for Windows.).

Other network operators are attempting to create their own applications barriers to entry. Palm Inc., for example, is trying to turn the Palm hand-held computer "into the standard for all hand-held devices, much as Microsoft's operating system became a standard partly because so many developers created applications for it." Pui-Wing Tam, Army of Programmers Helps Palm Keep Its Edge, Wall St. J., June 1, 2000, at B1.

D. *Monopoly Leveraging*

Monopoly leveraging occurs when a firm is able to extend its market power from the monopolized market to a related market. A monopolist may, for example, "tie" the purchase of a secondary product (the tied product) to a monopolized product (the tying product).[77] By requiring customers to purchase both products, the monopolist can extend its market power from the tying to the tied product market. Consider a computer operating system such as Windows that serves several different applications markets. By tying certain of its own applications into Windows, Microsoft can ensure that customers do not purchase competing applications. Thus, in its current antitrust suit against the company, the government has claimed that Microsoft has integrated its Internet browser into Windows in order to leverage its monopoly in operating systems into the market for Internet browsers.[78] A monopolist can also engage in monopoly leveraging by denying its competitors access to a resource essential to effective competition in a related market. Such monopoly leveraging occurs frequently in network markets. When a network holds monopoly power, potential users often cannot compete in a related market without access to the network. Various applications programs, for example, cannot operate without access to the Windows operating system. Since Microsoft dominates the computer operating system market,[79] it can exclude its competitors from the applications markets, and extend its own monopoly power into those markets, simply by refusing to grant competitors access to Windows.

E. *A Judicial Standard That Accounts for Monopolies' Economic Effects*

The requisite principles for a new Section 2 standard emerge from a consideration of monopolies' economic effects. Because monopolies are often achieved for efficiency reasons, they should not be deemed illegal on their face.[80] To punish a firm simply because it has

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77 For a discussion of tying arrangements, see infra notes 148-61 and accompanying text.

78 See infra notes 173-75 and accompanying text.

79 "A computer operating system is the basic program that controls the operations of a personal computer and coordinates the interaction between the computer's memory and attached devices such as the keyboard, display screens, disk drive, and printer." Piraino, supra note 14, at 8.

80 See California Computer Prods., Inc. v. IBM Corp., 613 F.2d 727, 742 (9th Cir. 1979) ("[IBM] was entitled to maintain its . . . dominant position in the market . . . through 'business acumen' . . . . Where the opportunity exists to increase or protect market share profitably by offering equivalent or superior performance at a lower price, even a virtual monopolist may do so."); Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 281 (2d

achieved a monopoly is to discourage superior business performance.[81] Thus, the mere acquisition of monopoly power through aggressive competition should not suffice for Section 2 liability.[82] There is nothing wrong with the intentional achievement of monopoly power; what is wrong is the *misuse* of monopoly power to preclude competition.[83]

Monopolists misuse their power when they take affirmative steps to exclude competitors either from the monopolized market itself or from a related market to which they are attempting to extend their monopoly power. Many monopolists (such as those in network industries) already possess a durable form of market power, and they should not be permitted to use that power to artificially extend the period of their dominance.[84] Monopolists also should not be allowed to use their considerable leverage to extend their monopoly power from one market to another. In such cases monopolists could acquire dominance in a new market, not because of their superior efficiency,

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Cir. 1979) ("[A] monopolist is permitted, and indeed encouraged, by [Section] 2 to compete aggressively on the merits . . . ."); Telex Corp. v. IBM Corp., 510 F.2d 894, 927 (10th Cir. 1975) ("[T]echnical attainments [by a monopolist] were not intended to be inhibited or penalized by a construction of Section 2 of the Sherman Act to prohibit the adoption of legal and ordinary marketing methods already used by others in the market . . . .").

81 See McGee, supra note 42, at 786 (stating that:

> [T]he quest for superior performance requires, and merits, the incentive of prospective gain. . . . A rule of law that punishes such superiority, or demands that those who are responsible cannot gain from it, will fatally blunt the incentive to excel. . . . [It would instruct business people that] the safest course would be to degrade service, convenience, and product; let costs rise; pull punches; subsidize and pray for competitors; go soft; and shrink.).

82 No market is unlimited, and every business knows that by increasing its market share it is excluding competitors from a portion of the market. "Thus, there is a built-in likelihood that he who succeeds will have done something along the way which can, by hindsight, fairly be dubbed a conscious acquisition of power." Maxwell M. Blecher & Consuelo S. Woodhead, Bigness and Badness: A Review of the Requirement of "Deliberateness" in Monopolization, 10 Sw. U. L. Rev. 121, 125 (1978).

83 Some commentators have argued, however, that persistent monopolies should be precluded regardless of their conduct. See Phillip Areeda, Monopolization, Mergers, and Markets: A Century Past and the Future, 75 Cal. L. Rev. 959, 961 (1987); Raymond A. Noble, "No Fault" Monopolization: Requiem or Rebirth for *Alcoa*?, 17 New Eng. L. Rev. 777, 799-800 (1982) (noting support for "no-fault" approach to regulating persistent monopolies); Donald F. Turner, Reflections on Antitrust and Related Economic Policies, in Antitrust & Trade Regulation Annual 453, 457-58 (Robert B. Haynes ed., 1970) ("My concern . . . is with the company whose monopoly position has been legitimately obtained, but which seems likely to be invulnerable to effective competition for the foreseeable future unless the company permits the entry and growth of competitors by deliberately holding back."); see also In re E.I. du Pont de Nemours & Co., 96 F.T.C. 653, 751 n.42 (1980) ("If a monopoly results that proves impervious to competitive inroads and is unjustified by scale economies or other efficiencies, antitrust action in this or some other forum may be warranted, even in the absence of abusive conduct.").

84 See supra notes 60-76 and accompanying text.

but simply by virtue of their pre-existing power. Hence the courts should preclude monopolists from engaging in conduct whose sole purpose is either to perpetuate their power in a current market or to extend such power into a new market. If monopolists were precluded from such conduct, they would remain subject to the market forces that would guarantee their continued efficiency. The threat of losing power in the monopolized market would constrain monopolists from unduly raising prices and would give them a continuing incentive to engage in innovation in order to stay a step ahead of potential competitors. In related markets, monopolists would be forced to acquire market share through the same superior business practices that caused their success in the monopolized market.

Unfortunately, the federal courts have not yet been able to articulate such an approach to Section 2 conduct. Part II describes the confusing and inconsistent standards adopted by the courts since the passage of the Sherman Act in 1890.

II
The Courts' Failure to Develop an Effective Section 2 Standard

A. *Sources of the Courts' Difficulty*

The federal courts' difficulty in distinguishing between legitimate and illegal Section 2 conduct reflects Americans' ambivalence toward industrial concentration.[85] A debate has been ongoing since the country's formation between those who, like Thomas Jefferson, have mistrusted large institutions and preferred a nation of small independent entrepreneurs (the Jeffersonians), and those who, like Alexander Hamilton, have believed that centralized organizations can most effectively solve society's problems (the Hamiltonians).[86]

The Sherman Act represented a compromise between the Hamiltonian and Jeffersonian views. In passing the Act,[87] Congress subscribed to the Hamiltonian notion that a national policy was necessary to regulate the trade practices of the trusts that had come to dominate the oil, meatpacking, cotton, and tobacco industries in the latter

[85] See Sullivan, supra note 37, at 587 ("[Americans] may admire the solidity and oft-proclaimed efficiency of the great corporations, yet they distrust the corporations' power and sometimes suspect their intentions.").

[86] See Stanley Elkins & Eric McKitrick, The Age of Federalism 18-29 (1993); Forrest McDonald, The Presidency of Thomas Jefferson 18-21 (1976).

[87] Sherman Antitrust Act, ch. 647, 26 Stat. 209 (1890) (codified as amended at 15 U.S.C. §§ 1-7 (1994)).

part of the nineteenth century.[88] The objective of the Act, however, was to preserve a Jeffersonian society in which small entrepreneurs would be able to compete free of undue restrictions from such trusts.[89]

The Sherman Act encouraged firms to compete aggressively by lowering prices, developing new products, and expanding output. The federal courts soon discovered how difficult it would be to determine when vigorous competition by a monopolist benefits or harms consumers. On one hand, monopolists had the power to prevent innovative new firms from entering the relevant market. On the other hand, many monopolists were already providing consumers with a broad range of products at low prices. The courts thus became understandably reluctant to censure aggressive competitors.[90] They recognized that overly zealous Section 2 enforcement could deter firms from engaging in the types of conduct that the antitrust laws were designed to encourage. As Judge Hand explained in *United States v. Aluminum Co. of America (Alcoa)*,[91] "[t]he successful competitor, having been urged to compete, must not be turned upon when he wins."[92]

In order to avoid unfairly penalizing successful firms, the courts developed a synthesis between the Hamiltonian and Jeffersonian views. They accepted the argument that economic size itself is not evil and, in fact, may benefit consumers by promoting efficiency. However, like the Jeffersonians, the courts insisted on preserving a system of competition in which smaller firms have a fair opportunity to compete. Thus, the synthesis: Firms should not be precluded from ob-

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88 See Walter Adams & James W. Brock, The Sherman Act and the Economic Power Problem, 35 Antitrust Bull. 25, 26-28 & 26 n.3 (1990).

89 See, e.g., Sullivan, supra note 37, at 588 ("Antitrust law proceeds on the assumption that by imposing limited constraints on market conduct and structure, the economy can be maintained as a self-regulating mechanism that limits corporate power in the public interest.").

90 One commentator has described the courts' dilemma as follows:

> [T]he recurring risk [is] that antitrust weapons will be used—perhaps inadvertently, perhaps intentionally—to curb efficiency in the name of "competitive equality." When this happens, less efficient competitors may be better off, but costs and consumer welfare suffer. We depend on the wisdom of the courts, and the discretion of the public prosecutors, to assure that it does not happen too often. Nowhere is this risk greater than in the monopoly area—for here, by definition, government enforcers and judges are dealing with proven market success.

Donald I. Baker, Government Enforcement of Section Two, 61 Notre Dame L. Rev. 898, 927 (1986).

91 148 F.2d 416 (2d Cir. 1945).

92 Id. at 430. Similarly, "Justice Holmes used to say that the theory of the [Sherman] act was that you must compete, but no one would be allowed to win the competition." Francis Biddle, In Brief Authority 275 (1962).

taining monopoly power, but they should be prevented from abusing such power by unduly excluding competitors from their markets.[93]

This synthesis, however, did not completely resolve the Hamiltonian/Jeffersonian tension. The courts remain divided over the type of conduct necessary to prove illegal monopolization. Indeed, the definition of acceptable Section 2 conduct has changed throughout the twentieth century in accordance with prevailing political currents.

B. *The History of Section 2 Enforcement*

In more than a hundred years of Section 2 litigation, the federal courts have been unable to distinguish anticompetitive from efficient conduct effectively. As commentators have explained,

> There is a genuine dilemma here. We urge everyone to try his damnedest to get to the top of the heap, but we do not genuinely want anyone to actually make it. Consequently, when someone does make it we find the courts speaking out of both sides of their mouths.[94]

As a result of the courts' confusing standards, large firms have little guidance on how to comply with Section 2. The current approach also unnecessarily complicates and delays Section 2 trials.[95] Cases brought by the government seem to take on a life of their own, often spanning the terms of several administrations and of different management teams at defendant companies.[96]

The history of Section 2 enforcement can be divided into three distinct "waves," each characterized by a different propensity to infer illegal Section 2 conduct.[97] In Wave I, which included the cases against the great trusts, beginning in 1904 with *Northern Securities Co. v. United States*[98] and ending in 1920 with *United States v. United States Steel Co.*,[99] the courts established the principle that mere possession of monopoly power is not sufficient for a Section 2 violation

[93] For a discussion of the cases in which these principles were established, see infra notes 97-180 and accompanying text.

[94] Blecher & Woodhead, supra note 82, at 129.

[95] The National Commission for the Review of Antitrust Laws, convened in June, 1978, asserted that "unclear and somewhat confused [Section 2] standards are an important contributing factor to unnecessary delay and ineffective remedies in antitrust litigation." Nat'l Comm'n for the Review of Antitrust Laws and Procedures, Report to the President and the Attorney General 143-44 (1979). One commentator has referred to the law on Section 2 conduct as a "black hole." John J. Flynn, Monopolization Under the Sherman Act: The Third Wave and Beyond, 26 Antitrust Bull. 1, 37 (1981).

[96] See Baker, supra note 90, at 899.

[97] See Sullivan, supra note 37, at 591-98 (describing three waves of antitrust enforcement against monopolies).

[98] 193 U.S. 197 (1904).

[99] 251 U.S. 417 (1920).

and that, in addition, a defendant must engage in certain predatory conduct.[100] Wave II began in the late 1930s with the filing of the *Alcoa* case[101] and ended in the early 1950s with *United States v. United Shoe Machinery Corp.*[102] Wave II was characterized by a more aggressive form of antitrust enforcement that grew out of President Roosevelt's activist "New Deal" approach to government.[103] During Wave II the federal courts often inferred the requisite improper conduct from rather benign activity by monopolists. The courts focused principally on the issue of the defendant's monopoly power.[104] Once the defendant was found to possess such power, any conduct having the purpose or effect of protecting or increasing that power was deemed illegal. It was sufficient that a defendant evidenced a general intent to attain or maintain its monopoly power, i.e., that it chose to do the acts that led to the establishment or perpetuation of its monopoly.[105] Commentators have pointed out that such a standard "is hardly a requirement at all . . . . It is almost inconceivable that [a monopolist] can possess [monopoly] power . . . without taking some volitional act that may fairly be characterized as an exercise of its power . . . ."[106]

One of the brightest of the New Deal judges was Learned Hand, who in 1945 rendered his opinion in *Alcoa*.[107] By the 1940s, Alcoa had become one of the most successful high-technology firms in America. Aluminum was a relatively new metal that could only be produced through a complex manufacturing process. Alcoa was able to take advantage of economies of scale in aluminum manufacturing

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100 See Standard Oil Co. v. United States, 221 U.S. 1, 62, 75-77 (1911) (finding that Congress intended Sherman Act to prohibit improper conduct rather than mere possession of monopoly power and that Standard Oil engaged in requisite improper conduct when it used unfair methods, such as predatory pricing, to drive competitors out of market); United States v. American Tobacco Co., 221 U.S. 106, 181-83 (1911) (focusing on defendant's wrongful conduct as basis for Section 2 violation).

101 See William E. Kovacic, Failed Expectations: The Troubled Past and Uncertain Future of the Sherman Act as a Tool for Deconcentration, 74 Iowa L. Rev. 1105, 1112, 1116 (1989).

102 110 F. Supp. 295 (D. Mass. 1953), aff'd, 347 U.S. 521 (1954).

103 Some of Roosevelt's economic advisers blamed the Depression on the domination of American industry by a small number of large corporations. See Kovacic, supra note 101, at 1117. These advisers supported the appointment of federal judges and administrators who held a Jeffersonian faith in "a world of small business, economic independence, and government action to restore and preserve free competition." Ellis W. Hawley, The New Deal and the Problem of Monopoly: A Study in Economic Ambivalence 284 (1966).

104 See infra notes 107-13 and accompanying text.

105 See id.

106 Blecher & Woodhead, supra note 82, at 123.

107 United States v. Aluminum Co. of Am. (*Alcoa*), 148 F.2d 416 (2d Cir. 1945).

by expanding its capacity continually.[108] The company maintained low profit margins and delivered quality products to customers at low prices. As a result, the company had acquired ninety percent of the United States market for aluminum ingot. Judge Hand concluded that such a market share was conclusive proof of Alcoa's market power.[109] However, Hand made it clear that his analysis could not end with a finding of monopoly power:

> It does not follow because 'Alcoa' had such a monopoly, that it 'monopolized' the ingot market.... [M]onopoly may have been thrust upon it.... A single producer may be the survivor out of a group of active competitors, merely by virtue of his superior skill, foresight and industry.... [T]he Act does not mean to condemn the resultant of those very forces which it is its prime object to foster....[110]

Ironically, after so forcefully stating the need to protect aggressive competitors from Section 2 liability, Judge Hand went on to find Alcoa liable simply for engaging in vigorous competition. Hand pointed out that Alcoa's monopoly had not been thrust upon it. The company had established its monopoly through voluntary actions, principally by adding to its capacity as it anticipated new demand for ingot.[111]

Judge Hand's approach in *Alcoa* penalizes firms whose aggressive competition benefits consumers. Any firm that drives its prices down closer to its costs will grow at the expense of less efficient rivals. Such a firm could be liable under *Alcoa* simply by continuing to expand to meet demand for its lower-priced products.[112] Indeed, a firm may

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108 See Baker, supra note 90, at 905.

109 See *Alcoa*, 148 F.2d at 424-26. Judge Hand also pointed out that it would be doubtful whether a 60% market share would be sufficient to infer monopoly power and that "certainly thirty-three percent is not [sufficient]." Id. at 424.

110 Id. at 429-30.

111 "[W]e can think of no more effective exclusion than progressively to embrace each new opportunity as it opened, and to face every newcomer with new capacity already geared into a great organization, having the advantage of experience, trade connections and the elite of personnel." Id. at 431. In finding a Section 2 violation, Hand also may have been influenced by evidence of wrongful conduct by Alcoa. There was much evidence in the lower court of Alcoa's exclusive contracts with suppliers, unfair pricing, and cartel-like activity with foreign aluminum manufacturers. See id. at 432-44; Thomas G. Krattenmaker & Steven C. Salop, Anticompetitive Exclusion: Raising Rivals' Cost to Achieve Power over Price, 96 Yale L.J. 209, 227 (1986) (describing Alcoa's "naked" exclusionary agreements with suppliers). However, Judge Hand may have been constrained from directly using such evidence because of the district court's finding in Alcoa's favor. See Noble, supra note 83, at 801-02.

112 See Baker, supra note 90, at 905-06 ("Alcoa seemed to have done what we ask of a competitor in a competitive market—keep prices and profits down, stimulate demand, and be there ready to meet that demand on reasonable terms."); McGee, supra note 42, at 786 ("[A]ny superior firm trying to drive price down to, or closer to, its own cost, runs head-on into *Alcoa* . . . .").

only be able to claim that a monopoly was "thrust upon" it under the *Alcoa* standard by shunning innovation, avoiding price reductions, and otherwise maintaining a completely "inert" competitive posture. As one commentator has pointed out, "Something is badly wrong if law prefers that such a firm ossify or shrink; raise price or ration; or otherwise somehow leave growing demand, perhaps and ultimately, to be satisfied by other firms and other capacity that does not exist."[113]

United States v. Grinnell Corp.,[114] decided in 1966, represented a transition between Waves II and III. Grinnell, a manufacturer of central station alarm services, had acquired many of its major competitors and had engaged in a series of geographic and product market allocation agreements.[115] The Supreme Court found little difficulty in inferring a Section 2 violation from such conduct.[116] However, in dicta, the Court set forth a standard that would be used extensively by defendants to avoid liability in later Wave III cases. The Court stated that Section 2 should only prohibit "the willful acquisition or maintenance of . . . [monopoly] power as distinguished from growth or development as a consequence of a superior product, business acumen, or historical accident."[117] In Wave III, the courts struggled to develop objective standards for determining whether, under the *Grinnell* standard, monopoly power resulted from improper willful conduct or from legitimate business practices.

The third wave of Section 2 litigation began in 1969, with the government's filing of its antitrust suit against IBM,[118] and it has contin-

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113 McGee, supra note 42, at 781. Other Wave II cases followed *Alcoa*'s lead in finding the requisite anticompetitive conduct from a monopolist's general intent to maintain its position in a market. See United States v. Griffith, 334 U.S. 100, 109 (1947) (finding Section 2 violation when motion picture distributors pooled their buying power to obtain lower rates and other preferential terms in their royalty agreements with motion picture producers); United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 340-45 (D. Mass. 1953), aff'd, 347 U.S. 521 (1954) (finding Section 2 violation when manufacturer of shoe machinery leased machines to customers rather than selling them). The problems with the *Alcoa* line of cases are illustrated by contrasting *Alcoa* with United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377 (1956), in which the Supreme Court failed to find DuPont liable for monopolizing the cellophane market. DuPont priced its products at a high level and, as a result, enhanced demand for cellophane substitutes. DuPont convinced the Court that the relevant market included all flexible packaging markets. Since DuPont controlled less than 25% of that broad market, it was not deemed to be a monopolist. See id. at 403-05. "The net result was that Alcoa was punished for low prices, low profits, and expansiveness, while DuPont escaped liability though it had monopolistically priced its premium product." Baker, supra note 90, at 906.

114 384 U.S. 563 (1966).

115 See id. at 566-70.

116 See id. at 570-71, 576.

117 Id. at 570-71.

118 See Kovacic, supra note 101, at 1119 (asserting that third "round of Sherman Act deconcentration initiatives" began with Justice Department's suit against IBM).

ued through the filing of the government's current case against Microsoft. In Wave III, the defendants generally were high-technology companies in the computer hardware and software, photography, telecommunications, and entertainment industries.[119] These companies were innovative producers of new products popular with consumers. Thus, the courts were presented squarely with the issue of the propriety of monopoly power achieved and maintained by efficient business methods. During Wave III, the courts became more willing to consider defendants' arguments that their aggressive competition promoted economic efficiency.[120] Unfortunately, however, the courts have not been able to develop a consistent description of the type of monopolistic conduct that should be permitted because of its beneficial effect.

The government has been less active in prosecuting Section 2 cases in Wave III than in Waves I and II, and it has achieved a mixed record in the cases it has chosen to pursue. In 1969, on the final day of the Johnson Administration, the government filed a suit proposing that IBM be broken up into several independent companies.[121] After thirteen years of fruitless litigation, the government finally dismissed the case in 1982.[122] Deconcentration initiatives also occurred in the Nixon and Ford Administrations against the petroleum[123] and breakfast cereal[124] industries, the domestic tire manufacturers[125] and AT&T.[126] Only in the AT&T case did the government achieve its structural objectives. In 1982, the government and AT&T entered into a consent decree under which the Bell operating companies were divested from AT&T's equipment supply and long-distance transmission businesses and were confined to providing local telephone service.[127] Following *AT&T*, the government did not bring any significant monopoly cases until the Clinton Administration. How-

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119 See infra notes 136-44, 153-56, 164-80 and accompanying text.

120 See infra notes 136-95 and accompanying text.

121 See Kovacic, supra note 101, at 1119.

122 See Baker, supra note 90, at 909-11 (describing procedural history of case between 1969 and 1982).

123 See In re Exxon Corp., 98 F.T.C. 453 (1981).

124 See In re Kellogg Co., 99 F.T.C. 8 (1982).

125 See United States v. Goodyear Tire & Rubber Co., and United States v. Firestone Tire & Rubber Co., [1970-1979 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 45,073 (N.D. Ohio 1973).

126 See United States v. AT&T Co., [1970-1979 Transfer Binder] Trade Reg. Rep. ¶ 45,074 (D.D.C. 1974).

127 See United States v. AT&T Co., 552 F. Supp. 131, 140-42 (D.D.C. 1982), aff'd sub nom. Maryland v. United States, 460 U.S. 1001 (1983). The goal of the divestiture was to eliminate the Bell companies' incentive to favor AT&T's long-distance transmission services over those of AT&T's competitors. See Baker, supra note 90, at 916.

ever, beginning in 1994, the Department of Justice brought several monopolization cases against Microsoft,[128] and in 1998 the FTC brought a monopolization case against Intel.[129]

C. *The Principal Wave III Cases*

The principal Wave III cases have dealt with four of the primary means by which firms have attempted to perpetuate or extend their monopoly power in the late twentieth century: restricting competitors' access to essential products or services, tying arrangements, exclusive dealing arrangements, and predatory pricing.

1. *Restrictions on Access to Essential Products*

Monopolists can exclude their competitors from a market when they control products or services which such firms need in order to compete in that market. Thus many of the Wave III cases have involved the issue of a monopolist's obligation to allow competitors access to its products or services.[130] The courts' decisions in those cases have been confusing and inconsistent.[131] Indeed, one court has described such cases as among "the most unsettled and vexatious in the antitrust field."[132]

In two recent decisions, the Supreme Court required monopolists to allow competitors to access their products, but it failed to set forth a general standard defining the extent of monopolists' duty to deal. In *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*,[133] the defendant operated the ski slopes of three mountains near Aspen, and the plaintiff operated the slopes of only one mountain. The defendant had cooperated with the plaintiff in selling a single multimountain ticket allowing skiers to use any mountain's slopes for six days. The defendant then refused to allow the plaintiff to continue to market the multimountain ticket. The Supreme Court deemed this refusal to deal a violation of Section 2, pointing out that "the monopolist elected to make an important change in a pattern of distribution that had originated in a competitive market and had persisted for several

128 See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139); United States v. Microsoft Corp. (*Microsoft II*), 980 F. Supp. 537 (D.D.C. 1997), rev'd, 147 F.3d 935 (D.C. Cir. 1998); United States v. Microsoft Corp. (*Microsoft I*), 159 F.R.D. 318 (D.D.C.), rev'd, 56 F.3d 1448 (D.C. Cir. 1995).

129 See Intel Corp., Trade Reg. Rep. (CCH) ¶ 24,575 (F.T.C. Aug. 3, 1999).

130 See infra notes 133-44 and accompanying text.

131 See id.

132 Byars v. Bluff City News Co., 609 F.2d 843, 846 (6th Cir. 1979).

133 472 U.S. 585 (1985).

years."[134] The Court did not require any evidence of wrongful conduct beyond such change nor did it consider whether, under *Grinnell,* the defendant's monopoly over the ski slopes was a consequence of "a superior product, business acumen, or historical accident."[135]

The Court's approach in *Aspen* arguably limited *Grinnell's* Section 2 exception for a monopoly gained by business acumen. *Aspen* implies that a monopolist has an affirmative duty to assist its competitors regardless of its superior business performance. Indeed, the more effective a monopolist's product, the more essential it may be to a competitor, and the more likely a court will find a duty to deal under *Aspen.*

In its most recent Section 2 case, *Eastman Kodak Co. v. Image Technical Services, Inc.,*[136] the Court considered the legality of a refusal to deal designed to leverage a monopolist's market power into another market. Kodak manufactures and sells photocopiers as well as service and replacement parts for such equipment. The company competes with independent service organizations (ISOs) in servicing its photocopiers. The plaintiffs, eighteen ISOs, claimed that Kodak violated Section 2 by refusing to continue its prior policy of selling replacement parts to the ISOs. Because Kodak was the only possible source of the replacement parts, the ISOs could not compete in the service market when Kodak refused to sell them the parts.[137] The Court concluded that Kodak's refusal to deal possibly constituted a form of monopoly leveraging by which Kodak was attempting to extend its monopoly from the replacement parts market into the service market.[138] Citing *Aspen Skiing*, the Court concluded that Kodak should be required to prove a legitimate business justification for its conduct.[139]

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134 Id. at 603.

135 United States v. Grinnell Corp., 384 U.S. 563, 570-71 (1966).

136 504 U.S. 451, 455 (1992).

137 As a result of the policy, several independent service organizations (ISOs) were forced out of business. See id.

138 See id. at 479 & n.29. "The Court has held many times that power gained through some natural and legal advantage, such as a patent, copyright, or business acumen, can give rise to liability if a seller exploits his dominant position in one market to expand his empire into the next." Id. at 479 n.29 (internal quotation marks omitted).

139 "Liability turns ... on whether 'valid business reasons' can explain Kodak's actions." Id. at 483. The Court remanded the case to the Southern District of Texas to consider such justifications. On remand, the district court rejected Kodak's argument that its refusal to deal with the ISOs was justified by its intellectual property rights in its replacement parts, and it required Kodak to sell parts to the ISOs on nondiscriminatory terms. The Ninth Circuit later affirmed Kodak's duty to deal with the ISOs. See Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1228 (9th Cir. 1997).

A recent case involving Microsoft illustrates that, following these Supreme Court decisions, the lower federal courts remain confused over the legal standards governing monopolists' duty to deal with their competitors. In *David L. Aldridge Co. v. Microsoft Corp.*,[140] a supplier of a software program designed to improve the speed of Windows 95 claimed that Microsoft violated Section 2 by designing the operating system in a way that made it impossible for its program to run effectively. The court acknowledged that Windows "could be an essential facility for application software."[141] However, the court held that Windows could not be deemed essential for applications programs such as the plaintiff's "whose sole purpose is to improve on imperfections in the facility at issue."[142] This conclusion confused the issue of Windows' essentiality with the issue of the business justification for Microsoft's conduct. With over ninety percent of the relevant market, Windows is an essential facility for all applications programs.[143] Under the approach adopted by the Supreme Court in *Aspen Skiing* and *Kodak*, the relevant issue should have been whether Microsoft had a legitimate reason for designing Windows in a way that excluded the plaintiff's program.[144] The court, however, never reached this issue because of its misinterpretation of the duty-to-deal standard. *Aldridge* points out the need for a new standard that will define more effectively the scope of monopolists' duty to deal under Section 2.

2. *Tying and Exclusive Dealing Arrangements*

Under an exclusive dealing arrangement, a firm requires a customer or supplier to deal only with it and not to deal with its competitors.[145] For a monopolist, such an arrangement constitutes a particularly effective means of excluding its competitors from the relevant market. A monopolist has sufficient leverage to force its customers and suppliers to adhere to strict prohibitions on dealing with its competitors. By tying up a low-cost supplier or effective reseller, a monopolist can prevent actual or potential competitors from accessing the resources necessary to compete in the monopolized market or in a

140 995 F. Supp. 728 (S.D. Tex. 1998).

141 Id. at 754.

142 Id.

143 See Piraino, supra note 14, at 8.

144 In such an inquiry, the court could have considered, for example, whether the exclusion of the plaintiff was justified by Microsoft's right to improve the operation of Windows on its own rather than relying upon improvements designed by third parties such as the plaintiff.

145 See 1 Section of Antitrust Law, American Bar Ass'n, Antitrust Law Developments (Third) 169 (1992).

related market to which it is attempting to extend its monopoly power.

Despite the significant anticompetitive effects of monopolists' exclusive dealing arrangements, the courts have taken a rather permissive approach to such conduct. The courts have analyzed such arrangements under the "rule of reason," which requires the factfinder to consider all of the factors affecting their potential competitive effects, including the percent of the market foreclosed to competitors by the arrangements.[146] When less than thirty to forty percent of the suppliers or customers in a particular market have been subject to an exclusive dealing arrangement, the courts have been reluctant to find an antitrust violation.[147]

In a tying arrangement, a monopolist agrees to sell one product in which it has market power (the tying product) but only on the condition that the buyer also purchases a different (or tied) product in a market in which the monopolist has less power.[148] Like exclusive dealing, tying arrangements can be used by monopolists either to perpetuate their power in the monopolized market or to extend that power into a related market.[149] Although tying and exclusive dealing arrangements have similar competitive effects, the federal courts have applied a more stringent approach to tying arrangements.[150] The

146 See, e.g., Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 45 (1984) (O'Connor, J., concurring) ("Exclusive dealing is an unreasonable restraint of trade only when a significant fraction of buyers or sellers are frozen out of a market by the exclusive deal.").

147 See id. at 7, 32 (finding that exclusive contract which foreclosed 30% of market was not illegal); United States v. Microsoft Corp. (*Microsoft III*), No. Civ. A. 98-1232, 1998 WL 614485, at *19 (D.D.C. Sept. 14, 1998) (response to motion for summary judgment) (describing 40% threshold of illegality for exclusive dealing arrangements); Gonzales v. Insignares, No. C84-1261A, 1985 WL 2206, at *2 (N.D. Ga. June 27, 1985) (granting summary judgment for defendant when only 40% of consumers were affected by exclusive arrangement).

148 See Northern Pac. Ry. Co. v. United States, 356 U.S. 1, 5-7 (1958) (affirming summary judgment finding that defendant railroad company illegally tied sales or leases of real estate to lawyer's commitment to ship commodities on defendant's system). The Supreme Court has pointed out that the economic problems with tying arrangements stem from a defendant's ability to exploit "its control over the tying product to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms." *Jefferson Parish,* 466 U.S. at 12.

149 See, e.g., *Jefferson Parish*, 466 U.S. at 36 (O'Connor, J., concurring) (stating that tying is illegal when "power in the market for the tying product is used to create *additional* market power in the market for the *tied* product"); Smithkline Corp. v. Eli Lilly & Co., 575 F.2d 1056, 1061-62 (3d Cir. 1978) (holding that bundling of patented and nonpatented products violates Section 2).

150 Tying and exclusive dealing arrangements can be illegal under both Sections 1 and 2 of the Sherman Act. Under Section 1, such arrangements can constitute unreasonable restraints of trade, and under Section 2 they can constitute an illegal form of monopolization or attempt to monopolize. See 1 Section of Antitrust Law, supra note 145, at 133.

courts generally have found tying arrangements per se illegal when the seller has sufficient economic power in the market for the tying product to restrain trade in the tied product market.[151] Monopolists repeatedly have been found to possess sufficient market power to engage in illegal tying arrangements.[152]

Confusion in the tying area has been compounded by the fact that the courts have singled out certain types of arrangements for more permissive treatment. "Technological tying" cases involve attempts by monopolists to integrate previously independent components into a single package, thereby making competitors' components unnecessary because their functions are performed internally by the packaged product.[153] In several cases brought against IBM, Kodak, and other high-technology companies, the federal courts have rejected plaintiffs' tying claims and permitted monopolists to combine components into an integrated product.[154] In reaching this conclusion, the courts have failed to articulate a consistent standard for distinguishing illegal tying arrangements from legitimate integrations.

In certain cases, the courts have focused on the physical or functional relationship between the relevant components. Some courts have concluded that "technologically interrelated components . . . 'constitute parts of a single distinct product,'" and thus cannot be tied together illegally.[155] In other cases courts have declined to find liability when the integration of components constituted a technological advancement or improvement over an earlier product.[156] Some courts,

[151] See Fortner Enters. v. U.S. Steel Corp., 394 U.S. 495, 502-06 (1969) (reversing grant of summary judgment in favor of steel company that allegedly tied availability of credit to purchase of prefabricated houses).

[152] See, e.g., *Jefferson Parish*, 466 U.S. at 17 (stating that large market share sufficient to prove requisite economic power); International Salt Co. v. United States, 332 U.S. 392, 395-96 (1947) (requisite economic power inferred from defendant's use of patent monopoly); IBM Corp. v. United States, 298 U.S. 131, 137 (1936) (same).

[153] See M. Howard Morse, Product Improvement or Predatory Innovation: What Has Microsoft Wrought?, Presentation Before the American Bar Association Section of Antitrust Law Computer Industry Committee (Apr. 15, 1999) (on file with the *New York University Law Review*).

[154] See infra notes 155-80 and accompanying text.

[155] Innovation Data Processing, Inc. v. IBM Corp., 585 F. Supp. 1470, 1476 (D.N.J. 1984) (quoting International Mfg. Co. v. Landon, Inc., 336 F.2d 723, 730 (9th Cir. 1964)) (discussing IBM's integration of "dump/restore" utility into mainframe operating system). Accord Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 543 (9th Cir. 1983) (declining to find per se unlawful tying arrangement by virtue of Kodak's bundling of "technologically interrelated" 110 Instamatic camera, film, and developing process).

[156] See California Computer Prods., Inc. v. IBM Corp., 613 F.2d 727, 744 (9th Cir. 1979) (concluding that when integration constitutes product "improvement" it cannot be basis of antitrust violation); ILC Peripherals Leasing Corp. v. IBM Corp., 448 F. Supp. 228, 233 (N.D. Cal. 1978) (finding that IBM's integration of disk assembly into disk drive did not constitute illegal tying arrangement because it increased storage capacity of drive), aff'd

however, have used entirely different criteria in judging the legality of component integrations. In *Jefferson Parish Hospital District No. 2 v. Hyde*,[157] the Supreme Court concluded that the tying analysis should turn "not on the functional relation between [the components], but rather on the character of the demand" for them.[158] Similarly, in *Klamath Lake Pharmaceutical Ass'n v. Klamath Medical Service Bureau*,[159] the Ninth Circuit found that products sold in combination may constitute illegally tied products if consumers would prefer to buy them individually: "It is the relationship of the producer's selling decision to market demand, not the physical characteristics of the products alone, that determines the existence of legally separable products."[160] The consumer demand standard set forth in *Jefferson Parish* and *Klamath Lake* is vague and subjective. It will be difficult for judges and juries to determine the circumstances under which consumers are likely to prefer to purchase components separately. In the absence of objective standards, it will be easy for plaintiffs to obtain an expert's opinion that will allow them to reach a jury in tying cases.[161] The risks associated with such an approach are likely to deter manufacturers from combining products in synergistic ways that benefit consumers.

sub nom. Memorex Corp. v. IBM Corp., 636 F.2d 1188 (9th Cir. 1980); Telex Corp. v. IBM Corp., 367 F. Supp. 258, 342 (N.D. Okla. 1973) (finding that IBM's integrations "represented technological advancements" that could not "be fairly regarded as predatory within the contemplation of antitrust policy"), rev'd on other grounds, 510 F.2d 894 (10th Cir. 1975).

157 466 U.S. 2 (1984).

158 Id. at 19; see also Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 462 (1992) (stating that tying can exist if there is sufficient consumer demand for a firm to provide two products separately). In *Microsoft III*, the Department of Justice argued that Microsoft's operating system and Internet browser should be deemed separate tied products because the products are available separately and separate market demand exists for each. See Memorandum of the United States in Support of Motion for Preliminary Injunction at *106-*123, United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139), available in 1998 Extra Lexis 92.

159 701 F.2d 1276 (9th Cir. 1983).

160 Id. at 1289; see also Multistate Legal Studies, Inc. v. Harcourt Brace Jovanovich Publications, 63 F.3d 1540, 1547-48 (10th Cir. 1995) (observing that combination of full-service bar review course with supplemental workshop could be viewed as illegal tying of two products because defendants had "marketed their full-service course and their supplemental workshop as separate products, for separate fees, for over a decade"); Caldera, Inc. v. Microsoft Corp., 72 F. Supp. 2d 1295, 1327 (D. Utah 1999) (finding tying arrangement may exist between Microsoft's Windows and MS-DOS programs based, in part, on fact that "but for the tying of Windows 95 a market would exist for other DOS products").

161 See, e.g., *Caldera*, 72 F. Supp. 2d at 1326-27 (allowing case to reach jury on basis of "expert" opinion that consumers would prefer to purchase Windows and DOS programs separately).

Technological tying has been the principal issue in a series of cases brought by the federal government against Microsoft in the 1990s. In 1994, the government first sued Microsoft in *United States v. Microsoft Corp. (Microsoft I)*,[162] charging it with a variety of illegal conduct under Section 2, including the tying of the Windows operating system to applications programs marketed by Microsoft.[163] The parties agreed to resolve *Microsoft I* in a consent decree (the Consent Decree),[164] which prohibited Microsoft from requiring computer manufacturers to purchase a license for Microsoft applications programs in order to obtain a license for the operating system.[165] In 1997, in *United States v. Microsoft Corp.* (*Microsoft II*),[166] the government charged the company with violating the Consent Decree by requiring computer manufacturers, as a condition to acquiring the right to install Windows 95, also to accept Microsoft's "Internet Explorer" browser. The government argued that by tying the two products together, Microsoft would be able to extend its monopoly in operating systems into the market for Internet browsers.[167] Microsoft countered that although the Consent Decree prohibited tying, it specifically permitted Microsoft to market an "integrated product."[168] The Internet browser was an integrated product that enhanced the functionality of Windows 95; if the browser were removed, the operating system would not function properly.[169]

The ambiguities of the Consent Decree and of tying law caused a conflict between the trial and appellate courts in *Microsoft II.* Concluding that the operating system and Internet browser were separate products, Judge Thomas Penfield Jackson entered a preliminary injunction in the District of Columbia District Court prohibiting Microsoft from requiring computer manufacturers that license its Windows 95 operating system to license its Internet browser as well.[170] The District of Columbia Circuit Court, however, reversed Judge Jackson's order, finding that Windows 95 and the Internet browser constituted a single integrated product.[171] The court concluded that the integration of the browser and operating system was permissible

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162 159 F.R.D. 318 (D.D.C. 1995), rev'd, 56 F.3d 1448, 1451 (D.C. Cir. 1995).

163 See id. at 322.

164 The Consent Decree is detailed in *Microsoft I*, 159 F.R.D. at 324.

165 See id.

166 980 F. Supp. 537 (D.D.C. 1997), rev'd, 147 F.3d 935 (D.C. Cir. 1998).

167 See id. at 539.

168 Id. at 540-41.

169 See id. at 543.

170 See id. at 545.

171 See *Microsoft II*, 147 F.3d at 947-52.

because Microsoft could make a plausible claim that it represented a technical advance for consumers.[172]

Technological tying is also an issue in the government's current monopolization case against Microsoft. In *United States v. Microsoft Corp. (Microsoft III)*,[173] the federal government, nineteen states and the District of Columbia charged Microsoft, inter alia, with illegally tying its Internet browser to its operating system by failing to make available a version of Windows without the Microsoft browser. Microsoft's conduct has allegedly made it difficult for competing browsers, such as Netscape's Navigator, to compete against Microsoft's Web browser.[174] In April 2000, Judge Jackson concluded that Microsoft violated Sections 1 and 2 of the Sherman Act by tying its Internet browser to its operating system.[175] Judge Jackson opined that, in denying the tying allegations in *Microsoft II*, the District of Columbia Circuit Court merely was construing the parties' contractual intent under the Consent Decree rather than interpreting substantive tying law.[176] Furthermore, he accused the Circuit Court of demonstrating a "lack of confidence in the ability of the courts to distinguish . . . improvements . . . made for anticompetitive purposes."[177] According to Judge Jackson, the Circuit Court erred in concentrating on whether Microsoft could make a "plausible claim" that the integration of the browser and operating system represented a technical advance. Instead, the relevant test, as articulated by the Supreme Court in cases such as *Jefferson Parish*, was whether there was separate consumer demand for the two products.[178] Judge Jackson concluded that the operating system and browser are separate products because consumers base their choice of browsers on their specific browsing characteristics rather than upon their functionality in conjunction with an operating system.[179] Microsoft had no quality-related justifications for integrating those products and was simply attempting to "quash innovation that threatened its monopoly position."[180]

Judge Jackson's decision in *Microsoft III* leaves the law on technological tying more confused than ever. Until the courts develop a

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172 See id. at 950-51.

173 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

174 See Complaint at *19, *Microsoft III* (No. 98-1232), available in 1998 Extra Lexis 89.

175 See *Microsoft III*, 87 F. Supp. 2d 30 (D.D.C. 2000) (conclusions of law).

176 See id. at 47.

177 Id.

178 See id. at 48, 50.

179 See id. at 50.

180 Id. at 40.

consistent standard, high-technology companies cannot be certain how their integration of previously separate products will be judged under Section 2. Will it be sufficient that the two products are functionally related, or that they represent a plausible technical advance over a prior configuration, as the circuit court concluded in *Microsoft II*? Or must a defendant demonstrate, as in *Microsoft III*, that consumers preferred to purchase the integrated products as a unit and not as separate components?

3. *Predatory Pricing*

Predatory pricing occurs when a firm lowers its prices in order to eliminate a current competitor in the relevant market or to prevent new firms from entering the market.[181] Predatory prices can be designed to drive would-be competitors not only out of the monopolized market, but also out of a related market to which a monopolist is attempting to extend its market power. For example, in its suit against AT&T in the early 1980s, the government alleged that the company could subsidize lower prices in the long-distance telephone market as a result of the monopoly prices that it was able to charge in local telephone markets.[182]

Predatory pricing has been difficult for the courts to analyze because it involves the core means of competition that the Sherman Act was designed to protect and encourage.[183] Price reductions obviously benefit consumers in a direct way. However, in certain rare cases, lower prices can be designed to achieve predatory purposes that, in the long run, will harm consumers. A monopolist may lower its prices in order to destroy a rival or to convince it that entry into the relevant market would be unprofitable. After the rival exits or declines to enter the market, the monopolist can recoup profits in excess of the losses it incurred in driving the rival from the market.[184]

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181 See Phillip Areeda & Donald F. Turner, Predatory Pricing and Related Practices Under Section 2 of the Sherman Act, 88 Harv. L. Rev. 697, 697 (1975).

182 See John R. Bittner, Law and Regulation of Electronic Media 304 (2d ed. 1994) (describing basis for Department of Justice's suit against AT&T for its Bell System monopoly).

183 See California Computer Prods., Inc. v. IBM Corp., 613 F.2d 727, 742 (9th Cir. 1979) (stating that price competition is "a part of the very competitive process the Sherman Act was designed to promote").

184 See Areeda, supra note 83, at 965 (concluding that, to be predatory, price must "discipline or destroy rivals such that the predator thereafter gains sustained excess . . . profits far larger than those lost during the rival-bashing period"). As the Supreme Court has pointed out, "[f]or the investment to be rational, the [monopolist] must have a reasonable expectation of recovering, in the form of later monopoly profits, more than the losses suffered." Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 588-89 (1986). Because it is so costly to drive out rivals by charging a low price, some courts have argued

In recent years, courts and commentators have attempted to develop an objective means of identifying predatory pricing schemes. In an influential 1975 law review article, Professors Areeda and Turner argued that the courts should concentrate on the relationship between a monopolist's prices and its costs.[185] Under their view, a price should be considered per se lawful (i.e., nonpredatory) if it equals or exceeds the marginal cost of producing the product, while it should be deemed per se illegal (predatory) if it is below a firm's marginal cost.[186] The rationale for this approach is that a firm that makes a profit, however small, on each additional product does so because it is efficient; however, a company that incurs losses on the sale of each additional product is presumably doing so for anticompetitive reasons.[187]

Some federal courts have adopted the Areeda-Turner thesis in its entirety.[188] However, not all federal courts and enforcement agencies have embraced every aspect of the Areeda-Turner approach.[189] They remain divided not only over the specific level at which a lowered price should be deemed predatory but also over what additional factors should be relevant to an ultimate finding of a Section 2 violation.[190] As a result, both monopolists and their potential rivals miscalculate. Monopolists cannot be certain of the extent to which they can lower prices in response to threats from new entrants, and potential entrants in monopoly markets remain unaware of the extent of their rights to challenge below-cost pricing.

Some commentators have criticized the Areeda-Turner approach for failing to recognize that a dominant firm may exclude rivals even if it does not reduce prices below its marginal cost. Because of its relative economy of scale advantages, a monopolist often can prevent entry by pricing its products at a point above marginal cost but below average total cost.[191] Since a new entrant's fixed costs are likely to be

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that "predatory pricing schemes are rarely tried, and even more rarely successful." Id. at 589.

185 See Areeda & Turner, supra note 181.

186 Recognizing that business records rarely reflect marginal costs of production, Areeda and Turner suggest the use of variable cost as an evidentiary surrogate. See id. at 712 n.37.

187 See id. at 711-12.

188 See, e.g., *California Computer Prods.*, 613 F.2d at 743 (9th Cir. 1979) (finding that IBM did not engage in predatory pricing when it sold products at level above marginal cost).

189 See infra notes 193-95 and accompanying text.

190 See id.

191 See Richard A. Posner, Antitrust Law: An Economic Perspective 188-92 (1976); Frederick M. Scherer, Predatory Pricing and the Sherman Act: A Comment, 89 Harv. L. Rev. 869, 871 (1976) (explaining that "monopolist may be able to discourage new competition without breaking the Areeda-Turner rules"). Average total cost includes both fixed and variable cost and is thus always greater than average variable cost. See Transamerica

high, such a monopolist's prices will often be lower than the entrant's fixed costs. As one commentator has pointed out, "[a] rule that allows the monopolist to dispatch entrants quickly, before they do their own learning or increase their volume sufficiently to reduce their fixed costs, can impose great costs upon the public."[192] Thus, in certain cases, the Federal Trade Commission has drawn the line at prices below average total cost, deeming them to be predatory even though they exceed average marginal cost.[193]

Some courts have rejected the conclusive presumptions of legality afforded to certain levels of pricing under the Areeda-Turner approach. They have adopted a more detailed approach that takes into account defendants' motivation for lowering their prices. For example, the court in *Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litigation)*[194] concluded that when a firm's prices are below average total cost and above marginal cost, the courts should not deem the prices conclusively lawful, as under Areeda-Turner, but should inquire further to confirm whether a monopolist has a reasonable explanation for the prices.[195]

The vigor of current and future competition in monopoly markets is dependent upon a monopolist's willingness to share essential products and services with other firms, to keep distribution channels open to competition, to minimize its costs and prices, and to engage in continuous efforts to develop more efficient products. However, in each of these critical areas, the federal courts have failed to provide monopolists and potential entrants with guidance as to the type of conduct that will be deemed acceptable. The courts need to adopt a clearer Section 2 standard which will encourage conduct that reduces prices and promotes innovation while deterring conduct that perpetu-

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Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965, 988 (N.D. Cal. 1979). "Variable costs typically include such items as materials, fuel, labor, maintenance, licensing fees, and depreciation occasioned by use . . . . Fixed costs generally include management expenses, interest on bonded debt, the rate of return necessary to attract and maintain equity investment, irreducible overhead and depreciation occasioned by obsolescence." Northeastern Tel. Co. v. AT&T Co., 651 F.2d 76, 86 (2d Cir. 1981).

192 Sullivan, supra note 37, at 627. Some commentators have pointed out that, in network industries such as software, the marginal costs of new products are "virtually zero," and thus the Areeda-Turner average marginal cost test would permit pricing at "any nonnegative level." Kolasky & Adkinson, supra note 39, at 30.

193 See, e.g., Borden, Inc., [1976-1979 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 21,490 (discussing Borden's monopolization of concentrated lemon juice market and finding prices above marginal cost to be predatory).

194 481 F. Supp. 965 (N.D. Cal. 1979).

195 See id. at 996.

ates or extends monopoly power. The next Part proposes a new standard that meets these objectives.

III
A Proposed Approach to Section 2 Conduct

The courts should continue to recognize, as they have since the beginning of Wave III, that monopoly power itself does not violate Section 2. Since monopolies often represent the triumph of the most efficient firm in a particular market, competitors should not be discouraged from attempting to achieve monopoly power. Thus, the willful acquisition or maintenance of monopoly power should not suffice for a Section 2 violation. It should, however, be illegal for a monopolist to abuse its market power.

There are two general types of abusive conduct with which the courts should be concerned. First of all, monopolists should not be permitted to engage in conduct that artificially extends the duration of their monopoly power. If a monopolist can perpetuate its power beyond the point at which it would have been eroded by the market, it will be less likely to fear competition and more likely to raise prices, reduce output, and engage in other inefficient economic conduct in the monopolized market.[196] Secondly, monopolists should not be allowed to employ means of extending their market power from the monopolized market to a related market. When a monopolist is able to leverage its market power from one market to another, it can exact monopoly profits in the new market without providing consumers any compensating efficiency benefits. Such conduct should be deemed illegal under Section 2 as an attempt to monopolize the related market.[197]

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196 See supra notes 49-76 and accompanying text (describing adverse economic effects of persistent monopolies).

197 In order to prove an attempt to monopolize, the plaintiff must show that: "(1) . . . the defendant has engaged in predatory or anticompetitive conduct with (2) a specific intent to monopolize and (3) a dangerous probability of achieving monopoly power." Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 456 (1993). The requisite intent in attempt cases is "inferred from objective evidence such as predatory conduct." United States v. Microsoft Corp. (*Microsoft III*), No. 98-1232, 1998 WL 614485, at *24 (D.D.C. Sept. 14, 1998) (citing *Spectrum Sports*, 506 U.S. at 459) (response to motion for summary judgment). Thus the principal focus in attempt cases is on the conduct required to prove a Section 2 violation. See Plaintiffs' Joint Proposed Conclusions of Law at *39, United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139) ("The principal focus [in attempted monopolization cases] is on the character of the conduct . . . .").

There are a myriad of ways in which firms can perpetuate or extend their monopoly power. In fact, "'[a]nticompetitive conduct' can come in too many different forms, and is too dependent upon context, for any court or commentator ever to have enumerated all the varieties."[198] The courts can, however, adopt a single unifying standard for all Section 2 conduct. The courts should concentrate not on the outward form of allegedly anticompetitive conduct, but upon its substantive competitive purpose. Conduct should be illegal under Section 2 *if it makes no economic sense other than as a means of perpetuating or extending monopoly power.*[199] Once a court determines that but for such purpose, a monopolist would not engage in particular conduct, it can condemn the behavior without fear of deterring legitimate competitive conduct. By focusing on a monopolist's purpose for its conduct, such an approach ensures a consistent analysis of all Section 2 behavior and avoids the conflicting standards adopted by the federal courts in Waves I, II, and III.

A few courts have alluded to the advantages of a purpose-based approach to Section 2.[200] In *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*,[201] the Supreme Court approved jury instructions stating that a Section 2 violation would occur if the defendant acquired, maintained, or used its monopoly power for "anticompetitive or exclusion-

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198 Caribbean Broad. Sys., Ltd. v. Cable & Wireless PLC, 148 F.3d 1080, 1087 (D.C. Cir. 1998).

199 See William Inglis & Sons Baking Co. v. ITT Continental Baking Co., 668 F.2d 1014, 1030-31 (9th Cir. 1981) (analyzing claim of attempted monopolization according to whether "it makes sense only because it eliminates competition"); Plaintiffs' Joint Proposed Conclusions of Law at *10, *Microsoft III* (No. Civ.A.98-1232) (advocating approach that considers "whether the conduct's costs to the defendant are ultimately inexplicable except on the basis of the monopoly returns expected as a result of the conduct's creation or maintenance of a monopoly"); Carlton A. Varner, The Microsoft Case: Exclusionary Innovation 7 (Dec. 4, 1998) (unpublished materials for 1999 Annual Seminar for Corporate Counsel, Sheppard, Mullin, Richter & Hampton LLP, on file with the *New York University Law Review*) (stating that monopolistic conduct should be illegal "where it would be economically irrational but for its adverse impact in competition").

200 Many commentators have argued, however, that intent should not be a decisive factor in antitrust cases, because it is difficult for courts to distinguish between a defendant's benign and anticompetitive purposes. As Professor Areeda has pointed out, "[a]n expression of a procompetitive intention to prevail in the marketplace often sounds much like an expression of an anticompetitive predatory purpose." Areeda, supra note 83, at 963. Professor Hovenkamp has stated that "[i]ntent to 'exclude' is consistent with both efficient practices (research and development) and inefficient ones (predatory pricing)." Herbert Hovenkamp, Federal Antitrust Policy 252 (1994); see also Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 232 (1st Cir. 1983) (Breyer, J.) ("'[I]ntent to harm' without more offers too vague a standard in a world where executives may think no further than 'Let's get more business[ ]' . . . ."); Lopatka & Page, supra note 59, at 358 ("It should be obvious that liability cannot turn on whether the firm's intent was to inhibit its rivals' sales, because all competition hurts competitors in this way.").

201 472 U.S. 585 (1985).

ary purposes."[202] Courts are particularly qualified to determine defendants' motivations for their conduct. Judge Jackson stated during the trial in *Microsoft III*, "You know, judging intent is what we do every day. Juries are called on to do it all the time."[203] In his dissent in *Business Electronics Corp. v. Sharp Electronics Corp.*,[204] Justice Stevens explained that "in antitrust, as in many other areas of the law, motivation matters and factfinders are able to distinguish bad from good intent."[205] The Supreme Court has also recognized that there is a correlation between economic purpose and effect. In *Broadcast Music, Inc. v. Columbia Broadcasting System, Inc.*,[206] the Court pointed out that the purpose of the parties in antitrust cases "tends to show effect[s]" of anticompetitive behavior.[207]

It should be relatively easy for the courts to determine when a monopolist's conduct makes no economic sense other than as a means of perpetuating or extending monopoly power. In order to raise a presumption of illegality under Section 2, a plaintiff should have the initial burden of proving that a monopolist had such an anticompetitive purpose. The plaintiff can meet its burden by demonstrating that a monopolist incurred short-term costs in order to drive a rival from the relevant market.[208] Consider, for example, the most common

[202] Id. at 596. The Court also stated that the question of intent is relevant to both actual and attempted monopolization. See id. at 602; see also United States v. Corn Prods. Ref. Co., 234 F. 964, 1013 (S.D.N.Y. 1916) ("[T]he intent of the combination so often appears in the cases as the determining factor in illegality.").

[203] Joel Brinkley, Microsoft's Final Antitrust Case Witness Stumbles a Bit, N.Y. Times, June 22, 1999, at C2.

[204] 472 U.S. 717 (1985).

[205] Id. at 754 (Stevens, J., dissenting).

[206] 441 U.S. 1 (1979).

[207] Id. at 19; see also United States v. United States Gypsum Co., 438 U.S. 422, 436 n.13 (1978) ("[C]onsideration of intent may play an important role in divining the actual nature and effect of the alleged anticompetitive conduct . . . ."); U.S. Healthcare, Inc. v. Healthsource, Inc., 986 F.2d 589, 596 (1st Cir. 1993) ("Motive can, of course, be a guide to expected effects . . . ."). One commentator has referred to the "common insight that a purpose to avoid competition by disposing of competitors is likely to lead to competitive injury." Sullivan, supra note 55, at 1229. But see Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965, 1003 (N.D. Cal. 1979) ("[T]he law against monopolization is much more concerned with the effect of conduct rather than with its purpose.").

[208] Some courts have recognized that such proof raises an inference of illegal Section 2 conduct. See Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585, 610-11 (1985) (pointing out that defendant "elected to forego . . . short-run benefits" in refusing to deal with plaintiff and thus was "willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival"); Advanced Health-Care Servs. v. Radford Community Hosp., 910 F.2d 139, 148 (4th Cir. 1990) ("[I]f a plaintiff shows that a defendant has harmed consumers and competition by making a short-term sacrifice in order to further its exclusive, anticompetitive objectives, it has shown predation by that defendant.").

types of monopolistic conduct: restricting access to monopoly products or services, tying arrangements, exclusive dealing, predatory pricing, and fraudulent trade practices such as false product preannouncements or sham litigation. Each of these types of conduct appears irrational on its face because it is likely to inflict losses upon a monopolist. Access restrictions limit the potential market for a monopolist's products or services. Tying arrangements generate ill will with customers who are forced to purchase unwanted products. Exclusive dealing arrangements waste bargaining leverage that a monopolist could have used to obtain concessions on price, delivery, and other terms of sale from its customers and suppliers. Predatory pricing requires a monopolist to forego profits on each product that it sells. Finally, a monopolist wastes its own resources when it makes false announcements about future products or pursues baseless litigation.

No firm, however, intentionally engages in conduct that will harm it in the marketplace. There must be another explanation for monopolists' willingness to incur losses in implementing access restrictions, tying and exclusive dealing arrangements, predatory pricing, or fraudulent trade practices. The only rational explanation is that the monopolist anticipates a long-term benefit that will outweigh such losses. A firm would not want to forego profits, irritate its customers, reduce its sales, or waste scarce resources unless it perceived a payback that compensated for such losses. In the case of a monopolist, the payback often comes from its ability to exclude competitors that might threaten its monopoly position in its current market or in a new market to which it is attempting to extend its monopoly power.

Once the plaintiff makes an initial showing of a defendant's likely anticompetitive purpose, the defendant should have an opportunity to rebut by proving that it had a legitimate business justification for the conduct at issue. A defendant may have incurred short-term losses not to drive a rival from the market but to enhance its long-term efficiency. An ostensible tying arrangement, for example, may constitute a technically valuable integration of previously separate products, and an access restriction may be designed to ensure that a third party is qualified to use a monopolist's resources. Shifting the burden to the monopolist to prove such benign intent is fair because the monopolist is the party with access to the evidence that will prove its legitimate competitive purpose. Documentary evidence should be particularly helpful in establishing a monopolist's intent. Most large corporations engage in considerable strategic planning concerning their competitors. Formal strategic plans, memoranda, internal correspondence and minutes of meetings often will reveal a monopolist's purpose for a particular course of conduct.[209]

IV
APPLYING THE PROPOSED APPROACH TO SPECIFIC TYPES OF CONDUCT

The following Part describes how the courts can apply the proposed approach to the five most prevalent types of monopolistic conduct. This discussion demonstrates how the new purpose-based standard would resolve the inconsistencies in Section 2 cases and give both monopolists and their potential rivals clearer guidance on the types of conduct that will be permitted or precluded.

A. Restricting Access to Monopoly Products

1. The Adverse Purpose and Effects of Access Restrictions

Access restrictions pose a particularly serious threat to competition in today's high-technology economy. As one commentator recently pointed out, monopolists are more likely to persist in new "information-centered" markets, such as "microprocessors (Intel), operating system (Windows), various software applications (e.g., Word), browser (Explorer), Internet service (America Online), search engine (Yahoo!), and various e-commerce and content applications (e.g., Amazon)."[210] Such firms can extend or perpetuate their monopoly power by denying competitors access to their products or services. The proposed approach will eliminate this threat to competition by ensuring that all competitors have an equal right to use such essential resources.

When access to a monopoly product is necessary for effective competition in a related market, a firm can extend its monopoly power into that market by imposing restrictions that deny its competitors access to the monopoly product. In *Kodak*, for example, the company used its refusal to sell replacement parts to ISOs as a means of leveraging its monopoly from the replacement parts market into the market for the repair and service of photocopiers.[211] Microsoft has been accused of restricting access to Windows in order to leverage its

[209] See Sullivan, supra note 37, at 634 ("The end products of corporate strategic planning can provide solid evidence of corporate intent . . . .").

[210] Peter Huber, The Microsoft Ruling: Is a Breakup Next? Not Likely, Wall St. J., Apr. 4, 2000, at A26.

[211] See supra notes 136-39 and accompanying text.

monopoly power from the computer operating system market into various applications markets.[212]

A monopolist can also use access restrictions to perpetuate its market power in the monopolized market. In certain cases, competition in a related market may represent a threat to a firm's current monopoly power. This is particularly true in high-technology markets in which certain peripheral products work in conjunction with a monopolized product. In such cases the peripheral product may be capable of evolving to perform the functions performed by the monopolized product. Thus, a firm in a peripheral market may be a potential competitor of a monopolist in its primary market. The monopolist would then have an incentive to use access restrictions to ensure that such a firm is never able to enter the monopolized market.

Such motivations are evident in the actions taken by Microsoft to counter the competitive threat to its operating system monopoly posed by certain peripheral software. The term "middleware" has been used to describe software such as Netscape's "Navigator" Internet browser and Sun Microsystems's "Java" software, which have the capability to serve as platforms for the operation of applications programs.[213] As such software becomes capable of supporting a growing number of applications, it ultimately could enable other operating systems to compete with Microsoft's Windows program.[214] In *Microsoft III*, Judge Jackson concluded that Microsoft's monopoly in operating systems is sustained in large part by what he called the "applications barrier to entry,"[215] that is, the "fact that a vastly larger number of applications are written for Windows than for other PC operating systems attracts consumers to Windows, because it reassures them that their interests will be met as long as they use Microsoft's

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212 See Complaint at *43-*50, United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139), available in 1998 Extra Lexis 89 (alleging that Microsoft used restrictions on alterations to Windows boot-up screen in order to leverage its Windows monopoly into applications markets); Piraino, supra note 14, at 3-4.

213 See *Microsoft III*, 84 F. Supp. 2d at 17, 26, 28 (findings of fact).

214 See id. at 28, 29, 31. Judge Jackson concluded that "Microsoft early on recognized middleware as the Trojan Horse that, once having, in effect, infiltrated the applications barrier, could enable rival operating systems to enter the market for Intel-compatible PC operating systems unimpeded. Simply put, middleware threatened to demolish Microsoft's coveted monopoly power." *Microsoft III*, 87 F. Supp. 2d at 38 (conclusions of law). As Robert Bork recently explained, "[t]he primary charge against Microsoft . . . involves the tying of a product that is a potential *substitute* for the monopoly product . . . . A Web browser can become an alternative platform for which applications are written, and then it would not matter what operating system underlay it." Robert H. Bork, A Predatory Monopolist, Wall St. J., Nov. 8, 1999, at A50.

215 *Microsoft III*, 84 F. Supp. 2d at 19 (findings of fact).

product."[216] Middleware such as Netscape's Internet browser and Sun Microsystems's Java software pose a threat to Microsoft's monopoly because they undermine the applications barrier to entry. Since various applications can run independently on middleware, such software systems have the potential to become substitutes for the Windows operating system.[217] Judge Jackson concluded that Microsoft denied such middleware access to the Microsoft desktop and to critical distribution channels in order to protect the applications barrier to entry.[218]

Access restrictions can take several different forms. A monopolist may adopt a bald rule forbidding its competitors from using the relevant resource, or it may impose more subtle restrictions on its competitors. The access terms may be so onerous that it is impossible for a competitor to use a monopolist's products or services effectively. A monopolist may, for example, charge its competitors a price so much higher than its price to other parties that it "has the same effect on the rival as a pure refusal to deal."[219] By imposing postsale restrictions, monopolists can implement indirect restrictions on access to their essential resources. For example, Microsoft has prohibited computer manufacturers from making the icons for competing applications more prominent than Microsoft's own applications on the "boot-up" screen that users first see when they activate their computers.[220]

In certain cases, the redesign of a monopoly product can constitute a type of access restriction. A monopolist may change its product in a way that makes it incompatible with competitors' peripheral components that previously had been interchangeable with the product. If the monopolist markets a peripheral product itself, the redesign could be intended to exclude the monopolist's competitors from the peripherals market.[221]

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216 Id. at 20.

217 See id. at 17-18.

218 See id. at 49, 53, 105, 106; *Microsoft III*, 87 F. Supp. 2d at 39, 44 (conclusions of law).

219 Janusz A. Ordover & Robert D. Willig, An Economic Definition of Predation: Pricing and Product Innovation, 91 Yale L.J. 8, 33 (1981).

220 See *Microsoft III*, 84 F. Supp. 2d at 59, 61 (findings of fact). Judge Jackson found that the company imposed "stringent limits on the freedom of OEMs (original equipment manufacturers) to reconfigure or modify Windows 95 and Windows 98 in ways that might enable OEMs to generate usage for Navigator." *Microsoft III*, 87 F. Supp. 2d at 39 (conclusions of law).

221 IBM, for example, has been accused of redesigning the central processing unit (CPU) of its computers to make the unit incompatible with peripheral products competing with IBM's own components. The plaintiffs alleged that the purpose of the redesign was to extend IBM's monopoly from the computer to the peripherals market. See Telex Corp. v. IBM Corp., 510 F.2d 894 (10th Cir. 1975) (per curiam); Innovation Data Processing, Inc. v. IBM Corp., 585 F. Supp. 1470 (D.N.J. 1984); Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965 (N.D. Cal. 1979); see also C.R. Bard, Inc. v. M3 Sys., Inc., 157 F.3d 1340, 1382 (Fed. Cir. 1998) (finding that

In order to meet its initial burden of proof in access cases, a plaintiff merely should have to demonstrate that a defendant implemented a restriction that prevented it from using a monopolized product or service. Such a low hurdle for plaintiffs is appropriate because access restrictions, on their face, are contrary to a monopolist's economic interests. A monopolist, like any other firm, should be motivated to maximize the return on its assets. In the ordinary course, therefore, a monopolist should want the largest possible number of firms to purchase its products or services. When a monopolist adopts a restrictive access policy, it is more likely than not acting to perpetuate or extend its monopoly power. Thus, the monopolist should have the burden of proving that it had a legitimate purpose for limiting access to its products or services and was not pursuing an anticompetitive objective.[222]

Such an approach is consistent not only with *Aspen* and *Kodak*, in which the Supreme Court placed the burden on monopolists to prove a legitimate business justification for refusing to deal with competitors,[223] but also with a long line of "essential facility" cases dating back to 1912. In those cases, the Supreme Court recognized that a monopolist can gain an unfair advantage in the relevant market by denying its competitors the right to access a resource required to engage in effective competition in that market.[224] The Court thus required monopolists to make their products and services equally available to all qualified parties.[225]

changes in defendant's biopsy device, which allowed its own replacement needles to be used more effectively with device than plaintiff's needles, violated Section 2 because changes had no effect on performance and were designed for sole purpose of injuring competitors in replacement needle market), cert. denied, 526 U.S. 1130 (1999).

222 In Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985), for example, the Supreme Court concluded that, in refusing to cooperate in marketing the multimountain ticket, the defendant was sacrificing "short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival." Id. at 611. Thus it was appropriate to require the defendant to prove that its conduct was actually motivated by efficiency concerns. See id. at 610-11.

223 See Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 483 (1992) ("Liability turns, then, on whether 'valid business reasons' can explain Kodak's actions."); *Aspen*, 472 U.S. at 602-05 (holding that monopolist's right to refuse to deal with competitors is not absolute and exists only if there are legitimate competitive reasons for refusal).

224 See Otter Tail Power Co. v. United States, 410 U.S. 366, 377 (1973) (requiring electric utility to provide wholesale power to cities that had established their own power companies); Lorain Journal Co. v. United States, 342 U.S. 143, 152-57 (1951) (requiring newspaper to sell advertising to patrons of radio station that competed with newspaper in local media market); United States v. Terminal R.R. Ass'n, 224 U.S. 383, 394-97 (1912) (requiring open access to railroad terminals that controlled only means of access to two bridges leading across Mississippi River to St. Louis).

225 Although the essential facility doctrine originally covered physical assets such as transportation facilities, see *Terminal R.R. Ass'n*, 224 U.S. at 394-97, it was eventually ex-

In *Microsoft III,* Judge Jackson characterized Microsoft's conduct as "exclusionary" and "predatory," but he specifically did not find that Microsoft had denied its competitors access to Windows as an essential facility. Under the approach proposed in this Article, the Windows operating system, with its monopoly in the Intel-compatible PC market, would be deemed to be an essential facility, and Microsoft would be required to give all its competitors equal access to the system.[226]

The findings of fact in *Microsoft III* indicate that Microsoft has denied access to Windows in both direct and indirect ways. Microsoft's direct refusals to deal were targeted at IBM and Sun Microsystems. Microsoft declined to give IBM access to the critical pathways into its operating system (called "application programming interfaces" or APIs)[227] that IBM needed to ensure that its software

tended to cover various intangible resources, see Silver v. New York Stock Exch., 373 U.S. 341, 347-49 (1963) (requiring access to electronic connection among stock brokers); Radiant Burners, Inc. v. Peoples Gas Light & Coke Co., 364 U.S. 656, 659-60 (1961) (per curiam) (requiring that seal of approval from industry standards-setting organization be made equally available to all competitors); Associated Press v. United States, 326 U.S. 1, 21-23 (1945) (precluding members of Associated Press from denying access by their competitors to wire service news). In recent years, the lower federal courts have applied the essential facility doctrine to high-technology networks, requiring the owners of networks with monopoly power to permit competitors to use the networks on equal terms. See MCI Communications Corp. v. AT&T Co., 708 F.2d 1081, 1131-33 (7th Cir. 1983) (requiring AT&T—which at time of suit still owned local Bell telephone systems—to allow MCI, its competitor in long-distance market, to interconnect its long-distance lines with AT&T's local lines); Intergraph Corp. v. Intel Corp., 3 F. Supp. 2d 1255, 1269-70, 1277-78 (N.D. Ala. 1998) (finding that Intel's microprocessors constituted essential facility because of network of installed base of computer workstations using such microprocessors and that, consequently, Intel must provide competitor with access to microprocessors and related technical information), vacated, 195 F.3d 1346 (Fed. Cir. 1999).

226 Judge Jackson found that Microsoft possesses monopoly power in the market for Intel-compatible PC operating systems. See U.S. v. Microsoft Corp. (*Microsoft III*), 87 F. Supp. 2d 30, 36-37 (D.D.C. 2000) (conclusions of law), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139). As one commentator recently pointed out, "Windows is the gateway through which all the hardware and software used in the vast majority of personal computers must pass." Lohr, supra note 33, § 4, at 1.

227 See *Microsoft III*, 84 F. Supp. 2d 9, 12 (findings of fact) ("The operating system supports the functions of applications by exposing interfaces, called 'application programming interfaces,' or 'APIs.' These are synapses at which the developer of an application can connect to invoke pre-fabricated blocks of code in the operating system."); David P. Hamilton, Microsoft Fumes over Ruling That It Discloses "Source Code," Wall St. J., June 9, 2000, at B6 ("Microsoft typically doesn't disclose any code related to . . . interfaces, and instead characterizes them in an outline form known as 'application programming interfaces,' which many Microsoft competitors charge are often incomplete or misleading."); Steve Lohr, A Spoonful of Sugar for Microsoft's Bitter Pill, N.Y. Times, Dec. 12, 1999, § 3 (Money & Business), at 4 (describing APIs as "software hooks that enable other companies' programs, from word processors to games, to run properly on Windows computers").

was compatible with Windows.[228] Microsoft initially refused to license Windows 95 to IBM and ultimately charged IBM a discriminatorily high price for the license.[229] Microsoft also made it impossible for Sun Microsystems's version of Java to run on its operating system by designing its own Windows-compatible version of Java that lacked the cross-platform capabilities of the Sun Microsystems version.[230]

These direct restrictions on access to Windows are against Microsoft's economic self-interest and have no business justification. The Windows operating system has no inherent capacity limitations. Its value both to Microsoft and to its customers increases with the number of compatible applications programs. Thus, it is against Microsoft's legitimate interests to make it difficult for competitors such as IBM to access the Windows operating system. Microsoft has no legitimate reason to deny programmers the technical support and information they need to make their applications compatible with Windows. It can disclose sufficient information about its APIs to enable programmers to write such applications without disclosing the vital portions of the Windows source code.[231] Microsoft, in fact, already discloses such information to certain computer manufacturers.[232] Microsoft also had no legitimate reason to make Windows incompatible with Sun Microsystems's version of Java. The API changes that caused such incompatibility did not add any technical value to the operating system. In fact, they made the operating system less efficient by preventing cross-platform porting.[233]

The *Microsoft III* findings of fact indicate that Microsoft also has implemented various indirect restrictions on access to Windows. These restrictions have prevented Microsoft's competitors from accessing the critical distribution channels necessary to compete effectively in the operating systems market. Such channels include the boot-up screen that appears when the Windows program is activated as well as

228 See *Microsoft III*, 84 F. Supp. 2d at 39-40 (findings of fact). Microsoft also refused to allow IBM to self-certify its compliance with Microsoft's hardware requirements for the use of Windows. See id. at 42.

229 See id. at 39-42.

230 See id. at 104.

231 Thus Microsoft should be required to disclose "enough high-level information to satisfy the requirements of application writers without disclosing low-level kernel detail that discloses much about the implementation of the operating system. . . ." Maureen A. O'Rourke, Drawing the Boundary Between Copyright and Contract: Copyright Preemption of Software License Terms, 45 Duke L.J. 479, 513 n.150 (1995).

232 See *Microsoft III*, 84 F. Supp. 2d at 40, 42 (findings of fact).

233 See id. at 110 ("Microsoft's dedication to the goal of protecting the applications barrier to entry is highlighted by the fact that its efforts to create incompatibility between its [operating system] and others resulted in fewer applications being able to run on Windows than otherwise would have.").

the computer manufacturers (original equipment manufacturers or OEMs) and Internet access providers (IAPs) that distribute middleware to consumers.

The Windows boot-up screen has been characterized as "an increasingly important channel for online commerce."[234] Without equal access to the screen, many applications programs could not compete effectively with Microsoft's own applications. "As Microsoft recognizes in its own internal communications, consumers are likely to select whatever . . . services . . . they see the first time they turn on their PC . . . and are unlikely to go through the trouble of switching."[235] By enforcing restrictions on changes to the boot-up screen, Microsoft has prevented its customers from promoting competing applications that might be preferable to consumers.[236] The company, for example, has threatened to terminate the Windows license of any computer manufacturer that removed the icons for Microsoft's programs from the desktop screen, added icons for other applications that were more prominent than the Microsoft icons, or altered the boot-up sequence in order to promote third-party software.[237]

Consumers are most likely to use Internet browsers that are preinstalled on their computers by OEMs or are bundled with the proprietary software of IAPs such as America Online, CompuServe, and Prodigy.[238] Microsoft denied Netscape access to these critical distribution channels by using incentives and threats to induce the OEMs and IAPs to favor the Microsoft Explorer browser over Navigator.[239]

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[234] David Bank & John R. Wilke, Gates Seeks to Retake the Offensive, Wall St. J., Nov. 15, 1999, at A3.

[235] United States v. Microsoft Corp. (*Microsoft III*), No. Civ.A.98-1232, 1998 WL 614485, at *13 (D.D.C. Sept. 14, 1998) (response to motion for summary judgment).

[236] See Walter S. Mossberg, Microsoft's Quandary: It's Highly Regarded but Widely Criticized, Wall St. J., Nov. 18, 1999, at B1 (stating that Windows interface is "still very similar to the interface introduced on the Macintosh 15 years ago. Yet Microsoft has essentially barred PC makers from experimenting with new user interfaces that might be better.").

[237] See *Microsoft III*, 84 F. Supp. 2d at 59, 61 (findings of fact). Microsoft's licenses, however, do permit computer manufacturers to pre-install competing programs and to add icons of their choosing to the boot-up screen. See id. at 61, 63.

[238] See *Microsoft III*, 87 F. Supp. 2d at 39 (conclusions of law); *Microsoft III*, 84 F. Supp. 2d at 46 (findings of fact) (stating that:

> Both OEMs and IAPs are able to place browsing software at the immediate disposal of a user without any effort on the part of the user. If an OEM pre-installs a browser onto its PCs and places an icon for that browser on the default screen, or "desktop," of the operating system, purchasers of those PCs will be confronted with the icon as soon as the operating system finishes loading into random access memory ("RAM"). If an IAP bundles a browser with its own proprietary software, its subscribers will, by default, use the browser whenever they connect to the Web.).

[239] See *Microsoft III*, 87 F. Supp. 2d at 39-43 (conclusions of law).

The company, for example, reduced the Windows license fee for computer manufacturers that agreed to promote Microsoft's browser over Netscape's.[240] In order to induce IAPs to promote and distribute Microsoft's browser rather than Netscape's, the company eliminated browser license fees for IAPs, gave IAPs preferential placement on the Windows desktop free of charge, and paid IAPs a "bounty" for every subscriber converted from the Navigator to the Explorer browser.[241] Under the approach proposed in this Article, Microsoft's actions would constitute an illegal denial of access to essential resources required to compete effectively in the browser market. Microsoft was acting against its apparent economic self-interest in incurring these costs and foregoing revenues it otherwise would have received from the OEMs and IAPs. The only rational explanation for the conduct lies in Microsoft's attempt to deter the threat to its operating system monopoly posed by middleware such as Netscape's browser.

2. *Defendants' Justifications for Access Restrictions*

Once a plaintiff has shown that it was denied access to an essential product or service, the defendant should have an opportunity to demonstrate that it had a legitimate purpose for the access restrictions. As the District of Columbia Circuit stated in *Hecht v. Pro-Football, Inc.*,[242] "the antitrust laws do not require that an essential facility be shared if such sharing would be impractical or would inhibit the defendant's ability to serve its customers adequately."[243]

Owners of monopoly networks in the software, telecommunications and credit card industries often argue that they have legitimate reasons for excluding certain parties from their networks.[244] A network owner should find it easiest to uphold rules setting forth the technical qualifications for use of a network. A firm should not be allowed to use a network if it does not have the necessary technical

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240 See *Microsoft III*, 84 F. Supp. 2d at 67-68 (findings of fact).

241 See id. at 68; Complaint at *43, *Microsoft III* (No. Civ.A.98-1232), available in 1998 Extra Lexis 89. In April 1998, Microsoft waived the provisions precluding those Internet access providers and content providers from distributing competing browsers, but it continued to require them to make Internet Explorer their default browser. See *Microsoft III*, 84 F. Supp. 2d at 75 (findings of fact).

242 570 F.2d 982 (D.C. Cir. 1977).

243 Id. at 992-93.

244 For example, AT&T and AOL have been involved in a battle over access by Internet service providers to cable systems. See infra notes 265-74 and accompanying text. The members of the Visa credit card system have argued that they should be able to exclude Sears from membership. See SCFC ILC, Inc. v. VISA U.S.A., Inc., 36 F.3d 958 (10th Cir. 1994). Microsoft has argued that its customers should not be able to change the configuration of icons on the Windows desktop. See supra notes 234-37 and accompanying text.

abilities or financial wherewithal. A new user must be capable of paying any reasonable admission fees as well as its continuing share of the cost of operating a network. It must also possess the technical abilities, professional licenses, and qualifications required to participate effectively in the network.[245] A network may also require that there be a technical compatibility between its systems and those of a potential user. A network cannot operate efficiently without a smooth exchange of information. In order to achieve effective interchange, a network must be able to require new users to operate computer hardware and software that meet the network's specifications. If a bank, for example, wishes to join a national credit card system, it must ensure that its computer systems will interchange effectively with those of the credit card network.[246]

An owner of a high-technology network, however, will find it difficult to justify limits on the number of firms that can use a network. Most networks do not have inherent capacity limitations and can admit new users with minimal disruption. In fact, most networks become more valuable when the number of their users increases.[247] Thus, a network owner's decision to exclude future users is more likely to be based on a desire to limit competition than upon legitimate efficiency concerns.

A monopolist's competitors in peripheral markets may claim that it violated Section 2 by redesigning its products to make them incompatible with the competitors' products.[248] A monopolist should prevail in such cases if it can demonstrate that the applicable redesign resulted in some plausible technical improvement. In such a case, a monopolist would have a rational economic purpose for the redesign other than to extend its monopoly into a related market.[249]

245 For example, a television station must have approval from the Federal Communications Commission before it can broadcast over a cable television network, and smaller banks must have Federal Reserve Board approval to participate in certain electronic funds transfers. See Donald I. Baker, Compulsory Access to Network Joint Ventures Under the Sherman Act: Rules or Roulette?, 1993 Utah L. Rev. 999, 1081 n.312.

246 In order to be upheld, however, technical qualifications for use of a network should include objective standards that can be applied equally to all potential users. Vague and subjective standards that leave a wide latitude for interpretation should not be acceptable. In United States v. Realty Multi-List, Inc., 629 F.2d 1351 (5th Cir. 1980), for example, the Fifth Circuit voided a real estate multiple listing service's requirement that a member have a "favorable credit report and business reputation." Id. at 1381.

247 See supra notes 60-64 and accompanying text.

248 See supra note 221 and accompanying text.

249 For example, in Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965 (N.D. Cal. 1979), IBM developed a new interface between its CPU and tape drives that would not function with a rival's drives. The court declined to find IBM liable under Section 2, because the new interface had

In certain cases, however, a monopolist may not have a legitimate business justification for redesigning a product in a way that makes it incompatible with a competitor's product. Microsoft has allegedly used various means, including continual redesigns of its APIs, to make its own applications programs more compatible with Windows than its competitors' applications.[250] There is no legitimate business justification for Microsoft to redesign its API interfaces in such a manner. It is more rational, from an economic standpoint, for Microsoft to make Windows compatible with as many applications as possible, in order to ensure its broadest possible use.[251] Thus, Microsoft's only rationale for the redesigns may be to extend its monopoly power from the operating system market to the applications markets.

A monopolist may argue that a requirement that it deal with its competitors would violate its intellectual property rights. Many courts have refused to force monopolists to license their patents or copyrights to their competitors, concluding that such intellectual property rights give the owner a lawful monopoly in the relevant product.[252] In order to recognize the validity of patents or copyrights, the courts should afford a presumption of legality to a monopolist's claim that its refusal to deal was justified by its intellectual property rights.[253] A plaintiff, however, should be able to rebut the presumption by proving

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"fewer wires and connectors" than the previous version and thus was technically superior. Id. at 1004.

250 See Lopatka & Page, supra note 59, at 323-24 (describing 1990 FTC investigation finding that Microsoft allegedly used "devious means" to assure compatibility only between its own applications programs and Windows).

251 See Declaration of Rebecca M. Henderson ¶ 89, United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139), available at <http://www.usdoj.gov/atr/cases/f4600/4644.htm> ("Firms developing server-based middleware without the benefit of a PC operating system monopoly have strong incentives to support open, robust interfaces that are compatible with many applications and many kinds of clients.").

252 See Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1186 (1st Cir. 1994) ("'A patent holder who lawfully acquires a patent cannot be held liable under Section 2 of the Sherman Act for maintaining the monopoly power he lawfully acquired by refusing to license the patent to others.'" (quoting Miller Insituform, Inc. v. Insituform of N. Am., Inc., 830 F.2d 606, 609 (6th Cir. 1987))); United States v. Westinghouse Elec. Corp., 648 F.2d 642, 647 (9th Cir. 1981) (finding no antitrust violation because "Westinghouse has done no more than to license some of its patents and refuse to license others"); SCM Corp. v. Xerox Corp., 645 F.2d 1195, 1206 (2d Cir. 1981) ("[W]here a patent has been lawfully acquired, subsequent conduct permissible under the patent laws cannot trigger any liability under the antitrust laws.").

253 The Ninth Circuit took such an approach in Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195 (9th Cir. 1997), in which it afforded a presumption of a valid business justification to a monopolist's argument that it should not be forced to license patented products to its competitors. See id. at 1218.

that the defendant truly was not motivated by a desire to protect such rights. A defendant, for example, recently may have changed a pattern of making patented or copyrighted products freely available.[254] A plaintiff also may be able to show that a defendant's intellectual property arguments are pretextual. In certain cases, only a small portion of the products involved in the refusal to deal may be covered by patents or copyrights, raising doubts about the legitimacy of the defendant's intellectual property arguments.[255]

Microsoft's restrictions on access to its Windows boot-up screen have no legitimate business purpose and are not justified by any of Microsoft's intellectual property interests. Microsoft argued in *Microsoft III* that since Windows is copyrighted, the copyright laws "give Microsoft the right to prevent OEMs, which act as Microsoft's distributors, from shipping modified versions of Windows without Microsoft's permission."[256] However, Microsoft's copyright justifications for its boot-up screen restrictions are pretextual. Microsoft currently allows certain of its largest customers to change the initial boot-up sequence for Windows 98. The modifications to the boot-up screen proposed by several OEMs would merely have given icons for competing applications more prominent placement and would not have affected the functionality of the Windows program in any way.[257] Judge Jackson concluded that the "modifications that Microsoft prohibits would not compromise the quality or consistency of Windows any more than the modifications that Microsoft currently permits."[258] Since restrictions on alterations to the boot-up screen harm Microsoft's relationships with its customers, the only rational explanation for the company's behavior is that it is attempting to perpetuate its monopoly power by preventing customers from giving "prominent placement to middleware that could weaken the applications barrier to entry."[259]

If the defendant claims that access restrictions are justified by the need to prevent its competitors from accessing confidential know-

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[254] In Intergraph Corp. v. Intel Corp., 3 F. Supp. 2d 1255 (N.D. Ala. 1998), rev'd, 195 F.3d 1346 (Fed. Cir. 1999), Intel was found liable under Section 2 for failing to supply microprocessors and related technical information to a competitor. The court concluded that Intel had "no legitimate intellectual property basis" for refusing to deal with the competitor, "especially since Intel . . . [had] been doing so for the last four years." Id. at 1279.

[255] See *Image Technical Servs., Inc.*, 125 F.3d at 1218-20 (finding Kodak's intellectual property arguments pretextual when it had patents on only small percentage of replacement parts that it refused to sell to ISOs).

[256] Defendant Microsoft Corporation's Proposed Conclusions of Law at *18, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 150760.

[257] See *Microsoft III*, 87 F. Supp. 2d at 44 (conclusions of law).

[258] *Microsoft III*, 84 F. Supp. 2d at 64 (findings of fact).

[259] Id. at 66.

how, the plaintiff may be able to show that less restrictive alternatives were available to the defendant. Such alternatives may indicate that a monopolist's intellectual property defense was simply a guise for an anticompetitive scheme. Microsoft, for example, has been accused of giving its own applications programmers undue preference by withholding from third parties the technical information on its APIs.[260] Microsoft may claim that its refusal to disclose such information is justified by confidentiality concerns. This defense, however, should not survive judicial scrutiny. The company should be able to give independent applications programmers enough information about its API interface to enable them to design compatible applications without disclosing the vital portions of source code that would allow such programmers to duplicate the Windows operating system.[261]

3. The Importance of Open Access to Cable Networks

The proposed approach would resolve one of today's most controversial antitrust issues: the extent to which owners of cable systems should be required to grant competitors open access to their networks. Cable networks quickly are becoming the most important route for consumers' high-speed connections to the Internet. Cable has the broad bandwidth which allows it to carry all types of data, including video, audio, text, film, and still pictures, to consumers simultaneously

260 See Sheremata, supra note 58, at 945 ("In this way, Microsoft gave its own application developers a substantial advantage over competitors."). Microsoft's competitors have argued that the company "gives them only rudimentary maps of the Windows A.P.I.'s, making it impossible to compete with the designs of Microsoft's own applications programmers, who enjoy a detailed road map of Windows, complete with little back roads and alleys that can be used as shortcuts." Steve Lohr, In an Antitrust Suit, a Tiny Ex-Partner Is Taking Aim at Microsoft, N.Y. Times, May 31, 1999, at C1.

261 See Piraino, supra note 14, at 62 (pointing out that, without access to detailed design specifications of Windows source code, Microsoft's competitors could not duplicate Windows system). A few courts have required monopolists to disclose compatibility standards. See, e.g., United States v. AT&T Co., 524 F. Supp. 1336, 1374-75 (D.D.C. 1981) (requiring AT&T to disclose information on compatibility standards between its telephone system and related equipment made by firms competing with AT&T affiliate). Many courts, however, have failed to require such disclosure, concluding that such a requirement would chill incentives for research by depriving inventors of the lead time over the rest of the marketplace that they would naturally expect from an innovation. See, e.g., Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 281 (2d Cir. 1979) (holding that Kodak had no duty to predisclose information about new film format); ILC Peripherals Leasing Corp. v. IBM Corp., 458 F. Supp. 423, 436-37 (N.D. Cal. 1978) (finding that IBM had no duty to disclose interface information), aff'd sub nom. Memorex Corp. v. IBM Corp., 636 F.2d 1188 (9th Cir. 1980). Such courts have failed to recognize that firms' incentive to maintain their dominance in the primary market in which they already hold monopoly power should be a sufficient spur to continue improving the functioning of their monopoly product. Thus, a requirement to disclose information on interfaces should not discourage monopolists from continuing to innovate.

and quickly, over a single wire.[262] Cable systems have a unique advantage over other telecommunications networks, such as telephone lines. Because of their narrower bandwidth, telephone lines accept Internet transmissions at much slower speeds than cable networks.[263] Thus, for many consumers, cable networks will be the exclusive gateway to the high-speed Web services of the future.[264]

In recent years, AT&T and AOL have been involved in a battle over access to cable networks. Both companies operate Internet access services, which can be delivered most effectively to consumers through high-speed cable modems. The "broadband war" between AOL and AT&T began in 1998, when AT&T announced its proposed merger with Media One. By combining Media One's cable system with its current cable operations, AT&T will operate in eighteen of the top twenty cable markets in the United States and will surpass Time Warner as the largest cable company.[265] Most of the cable companies acquired by AT&T hold monopoly power in their local markets.[266] Thus, by requiring its customers to connect to the Internet through its own service, AT&T can leverage its cable monopoly into the Internet service market. AOL has taken the lead in arguing that due to the monopoly advantages of AT&T's cable networks, other Internet service providers should be allowed equal access to such networks.[267] In 1998, AOL launched a national campaign to persuade local governments to require open access to AT&T's cable systems. Twelve out of the hundreds of municipalities that reviewed AT&T's cable purchases re-

262 See Thomas A. Piraino, Jr., A Proposed Antitrust Analysis of Telecommunications Joint Ventures, 1997 Wis. L. Rev. 639, 671 ("Cable networks have the broad-band width necessary to carry high volumes of data . . . ."); Michael J. Wolf, . . . And the Triumph of Broadband, Wall St. J., Jan. 11, 2000, at A26 (describing how broadband has the "ability to deliver seamlessly all types of data—text, audio, video, film, still pictures—anywhere, at any time, whether to your television set, computer, telephone, personal digital assistant, even, perhaps, your refrigerator").

263 See Bryan Gruley, AOL Leads Lobbying Campaign to Gain Access to 'Broad-Band' Cable TV Lines for the Internet, Wall St. J., Jan. 26, 1999, at A20.

264 It is possible, however, that satellite services someday may compete with cable networks and telephone lines as points of Internet access for consumers. See Andrew Pollack, Coming Soon, Downloads from Up Above, N.Y. Times, Feb. 27, 2000, § 3 (Money & Business), at 11.

265 See Wolf, supra note 262, at A26 (describing AT&T's purchase of Media One).

266 See Michael M. Weinstein, Hold On, Maybe We'll Connect You, N.Y. Times, May 16, 1999, § 4 (Week in Review), at 4 (pointing out that AT&T's purchase of cable companies has "replaced one cable monopolist, TCI or Mediaone [sic], with another, AT&T").

267 See Saul Hansell, Now, AOL Everywhere, N.Y. Times, July 4, 1999, § 3 (Money & Business), at 1; Walter S. Mossberg, Will the New AOL Still Serve User Needs? Five Tests That Matter, Wall St. J., Jan. 20, 2000, at B1.

quired the company to guarantee access to other Internet service providers.[268]

When its merger with Time Warner is completed, AOL will become the second largest operator of cable systems in the United States. Ironically, AOL-Time Warner then may face the same open access demands from other Internet service providers that it has made of AT&T. Under the approach proposed in this Article, both AT&T and AOL-Time Warner would be required to allow competing Internet access companies to use their cable systems on equal terms.

The Seventh Circuit recognized in *MCI Communications Corp. v. AT&T Co.*[269] that access to telecommunications networks often is essential for competitors in related markets. In *MCI*, AT&T was found liable under Section 2 for refusing to allow MCI to interconnect its long-distance lines to the local Bell telephone network, which at the time of the suit still was owned by AT&T.[270] The local telephone lines were deemed to be essential facilities because they were the only direct connections to consumers and were prohibitively expensive to duplicate.[271] The cable systems operated by AT&T and AOL-Time Warner are just as essential to competition in related markets as the local telephone network was in *MCI*. In the areas covered by such cable networks, competing Internet service providers have no other means of reaching consumers through a broadband network, and a similar network would be too expensive to duplicate.[272] There is little reason to believe that local cable markets would support the construction of a second system to consumers' homes. "As a result, broadband cable could become the sole entry point into the home for a whole new world of information, communication and entertainment services."[273]

Since AT&T's cable contracts require customers to use its own Internet service, competing providers easily should be able to meet their initial burden of proving the denial of access to an essential facility. Under the proposed approach, AT&T would then have to prove a legitimate business reason for restricting access by the Internet service

268 See John R. Wilke & Kathy Chen, Merger Partners Vow Open Access to Cable Lines, Wall St. J., Jan. 11, 2000, at B1.

269 708 F.2d 1081, 1146 (7th Cir. 1983).

270 See id. at 1132-33.

271 See id. at 1133.

272 AT&T argues that regional telephone companies and satellite services provide alternative means by which Internet service providers could reach consumers. It is unclear, however, "whether the phone companies have a technology that can provide comparable Internet service or whether satellite services will ever reach beyond a small, wealthy niche." Weinstein, supra note 266, § 4, at 4.

273 Murray, supra note 15, at A1.

providers to its local cable systems. It would be difficult for AT&T to meet that burden. AT&T's cable systems have the capacity to carry other Internet services, and AT&T should be able to allow alternative services on those systems without disclosing any of its confidential know-how or other intellectual property. Furthermore, AT&T could require Internet service providers to demonstrate their technical qualification to use AT&T's cable systems. It could also charge such service providers a reasonable fee for such use. It therefore appears that the only rational economic explanation for AT&T's refusal to deal with competing Internet service providers would be to extend its own monopoly in cable systems into Internet services.[274]

The proposed approach also has potential applications to access restrictions imposed by other network industries that hold monopoly power in America today. Professional sports leagues such as Major League Baseball, the NFL, the NBA, and the NHL, for example, hold monopoly power, and they could be required to demonstrate legitimate reasons for refusing to admit new teams from cities with sufficient population to support the relevant professional sport.[275] Similarly, airlines which dominate a particular "hub" city could be required to allow start-up airlines reasonable access to airport gates in order to operate in that city.

B. Tying Arrangements

During Wave III, the courts adopted conflicting standards in tying cases. In certain cases the courts focused on the physical relationship between the relevant components, and in other cases they emphasized the nature of consumer demand for the components.[276] The proposed approach would eliminate such inconsistencies and clarify the courts' analysis of tying arrangements.

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[274] As one observer recently concluded, "[t]he plan [to preclude other Internet services from using cable systems] threatens to give AT&T excessive control over the future high-speed Internet." Weinstein, supra note 266, § 4, at 4. In fact, some municipalities have already required AT&T to open up its local cable lines to competing Internet service providers. Portland, Oregon and Broward County, Florida have passed such ordinances, and other local governments are considering similar approaches. See Kathy Chen, Another Vote to Open Up Cable Lines Means More Complications for AT&T, Wall St. J., July 14, 1999, at B7; Jason L. Riley, Faster Web Access Coming (One Day) to a Home Near You, Wall St. J., July 14, 1999, at A23.

[275] See Thomas A. Piraino, Jr., The Antitrust Rationale for the Expansion of Professional Sports Leagues, 57 Ohio St. L.J. 1677-80 (1996) (describing how sports leagues should be deemed essential facilities to which any qualified teams should be granted membership); Thomas A. Piraino, Jr., A Proposal for the Antitrust Regulation of Professional Sports, 79 B.U. L. Rev. 889, 944-48 (1999) (same).

[276] See supra notes 155-61 and accompanying text.

The courts should begin with the proposition that improvements of current products, or introductions of new products, that stand on their own and are not used in conjunction with competitors' products, do not raise tying or access issues and should be deemed per se legal. Such innovations benefit consumers by reducing prices and enhancing quality. At the same time, they do not have any anticompetitive effects. Simply by introducing or improving an independent product, a monopolist does not exclude competitors from an essential resource, leverage its monopoly into new markets, or otherwise perpetuate or extend its monopoly power. Since the only purpose and effect of such innovation is beneficial, it should be considered conclusively legal under Section 2.

Tying issues arise, however, when a monopolist integrates previously separate components into a single package. Through such a technological tying arrangement, a firm can extend its monopoly from one component product market to another. For example, by integrating its Internet browser into Windows, Microsoft can give its own product a competitive advantage over other browsers;[277] by designing cameras to work only with its own film, Kodak can limit competition from other producers of film;[278] and by combining peripheral devices with its CPUs, IBM can enhance its power in the peripherals market.[279]

A monopolist can also use a tying arrangement to perpetuate its market power in the monopolized market. Like access restrictions, tying arrangements may be particularly attractive to a monopolist when a product in a peripheral market has the potential to compete in the monopolized market. In such cases, simply by integrating its own peripheral product with the monopoly product, a monopolist can deprive its potential competitor in the peripherals market of the sales it needs to develop the peripheral product to the point where it can compete in the monopolized market. For example, the government has alleged in *Microsoft III* that Microsoft integrated its own Web browser into Windows not only to extend its monopoly power into the

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277 See Complaint at *50-*58, United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139), available in 1998 Extra Lexis 89 (stating allegations of technological tie between Microsoft's operating system and its Internet browser).

278 See Foremost Pro Color, Inc. v. Eastman Kodak Co., 703 F.2d 534, 539-43 (9th Cir. 1983) (stating allegations of technological tie between Kodak's 110 Instamatic camera, film, and developing process).

279 See Telex Corp. v. IBM Corp., 367 F. Supp. 258, 347 (N.D. Okla. 1973) (stating allegations of technological tie between IBM's CPU and peripheral products), rev'd, 510 F.2d 894 (10th Cir. 1975).

browser market, but also to protect its monopoly in operating systems from the threat posed by Netscape's browser.[280]

A monopolist usually has no legitimate reason to force its customers to purchase a group of products they would prefer to purchase separately. In *Alaska Airlines v. United Airlines*,[281] the Ninth Circuit pointed out the usual lack of any economic rationale for such conduct: "[E]very time the monopolist asserts its market dominance on a firm in the leveraged market, the leveraged firm has more incentive to find an alternative supplier."[282] Were it not for the advantage of perpetuating or extending its monopoly, a monopolist presumably would not want to take the risk of alienating its customers by imposing an unwanted tying arrangement upon them. Thus the plaintiff should be able to meet its initial burden of proof in technological tying cases by showing that a monopolist changed its prior pattern of dealing by making previously separate products available only as an integrated package. The burden then should shift to the monopolist to demonstrate a legitimate business justification for combining the products.

In evaluating a monopolist's defenses in a technological tying case, the courts must be careful to protect monopolists' incentive to innovate. A monopolist's desire to improve its products through an integration may be difficult to distinguish from its intent to exclude rivals from the relevant market. Often, a monopolist has mixed motives for integrating previously separate products. A monopolist can be expected to be aware not only that a successful integration will benefit consumers, but also that it will cause competitive injury to its rivals.

The proposed approach will ensure that legitimate product integrations do not form a basis for Section 2 liability. A defendant only would be liable for integrating previously separate products when its intent was to extend or perpetuate its monopoly power. A defendant should be able to justify its conduct whenever it can show that a product integration had a plausible efficiency benefit. If the newly packaged product enhances performance or lowers cost, it should be permitted even if it was adopted in part to preclude competition.[283] It should be sufficient that a monopolist was spurred to some extent by a

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[280] See Complaint at *50-*65, *Microsoft III* (No. Civ.A.98-1232).

[281] 948 F.2d 536 (9th Cir. 1991).

[282] Id. at 549.

[283] For example, in Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965 (N.D. Cal. 1979), the court held that IBM's design changes in its CPU were not unlawful under Section 2, even though IBM's "predominant intent" for the changes was to preclude or delay competition in the peripherals market. See id. at 1005. The court emphasized that the CPU changes had resulted in an improved design. See id.

desire to improve its products. As one commentator has stated, "[If] engineering data suggest that a new product is superior to the product it replaces, antitrust inquiry should end."[284]

There are circumstances, however, in which plaintiffs should be able to prevail in technological tying cases. The District of Columbia Circuit acknowledged in *United States v. Microsoft Corp. (Microsoft II)*[285] that "[m]anufacturers can stick products together in ways that purchasers cannot without the link serving any purpose but an anticompetitive one."[286] In order to withstand scrutiny, there must be some plausible claim that an integration of products is "better in some respect; there should be some technological value to the integration."[287] A manufacturer may have "done nothing more than to metaphorically 'bolt' two products together."[288] If the combination of the products does not generate some value in terms of lower costs or greater efficiencies, the products should be regarded as separate, and a firm would effect an illegal tie by requiring the purchase of both products in combination. Consider, for example, a case in which a "Bell" telephone company with a monopoly in local telephone service in a particular region requires its customers to purchase telephones from it. The combination of local telephone service with a Bell-manufactured phone would offer no particular technical advantages. The supplier would simply be "bolting" two products together and forcing customers to purchase them as a package. There would be no rational economic explanation for the Bell system's behavior other than its desire to extend its monopoly in local telephone service into the market for telephone equipment.

In his findings of fact in *Microsoft III,* Judge Jackson focused on several factors indicating that Microsoft illegally tied its Internet browser to its operating system. The judge pointed out that the browser and operating system have the characteristics of separate products: "Because of the separate demand for browsers and operating systems, firms have found it efficient to supply the products separately."[289] Judge Jackson also concluded that Microsoft's licenses with personal computer manufacturers prohibit them from removing

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[284] Ordover & Willig, supra note 219, at 29.

[285] 147 F.3d 935 (D.C. Cir. 1998).

[286] Id. at 949.

[287] Id.

[288] Id.

[289] United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 48 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

Microsoft's browser from the operating system prior to shipment.[290] Thus, under the proposed approach, the government should be able to meet its initial burden of proving that a technological tie was effected when Microsoft made the previously separate browser and operating system available only as an integrated product.

Judge Jackson erred, however, in failing to give adequate consideration to Microsoft's efficiency justifications for the technological tie. Under the proposed approach, Microsoft should be able to demonstrate that the integration of the browser and operating system was motivated by a desire to improve the products. As the District of Columbia Circuit recognized in *Microsoft II,* Microsoft has done more than "metaphorically 'bolt' two products together;"[291] with the integration of the browser and the operating system, Microsoft has created a new product with "some technological value."[292] Microsoft has improved the functionality of its operating system by providing a seamless means by which users can move back and forth among various applications, including the Internet browser. Indeed, Judge Jackson acknowledged that "consumers can be said to benefit from Microsoft's provision of Web browsing functionality with its Windows operating system at no additional charge."[293] Thus, the government should not be able to demonstrate that Microsoft's only rational purpose for the integration was to perpetuate its monopoly in operating systems or to extend that monopoly into the browser market.[294]

Judge Jackson implied that Microsoft's improper tying conduct stemmed not from the mere bundling of its Internet browser and op-

290 See *Microsoft III*, 84 F. Supp. 2d at 49 (findings of fact).

291 *Microsoft II,* 147 F.3d at 949.

292 Id. The District of Columbia Circuit warned that, since courts have "limited competence" in evaluating high-technology product designs, they should be "wary of second-guessing the claimed benefits of a particular design decision." Id. at 950 n.13. Thus, courts should reject any challenge to an integrated product design if there is "a plausible claim" that the integration "brings some advantage." Id. at 950.

293 *Microsoft III*, 84 F. Supp. 2d at 55 (findings of fact). The integration of the Web browser into Windows is, in fact, just the latest in a series of integrations that have made the operating system more efficient. Functions such as the graphical user interface, memory management, type fonts, disk compression, and networking were initially offered as separate products and later integrated into Windows. See Bill Gates, Why the Justice Department Is Wrong, Wall St. J., Nov. 10, 1997, at A22.

294 In his opinion denying Microsoft's motion for summary judgment in *Microsoft III*, Judge Jackson explained that Microsoft did not simply bundle its Internet Explorer into Windows 98 "but took the further step of *contractually* prohibiting OEMs from *unbundling* the two." United States v. Microsoft Corp. (*Microsoft III*), No. Civ.A.98-1232, 1998 WL 614485, at *9 (D.D.C. Sept. 14, 1998) (response to motion for summary judgment). Thus, unlike the plaintiffs in other technological tying cases, the government was not challenging Microsoft's right to bundle its Web browser and Windows, but rather its "contractual prohibitions against unbundling, and Microsoft's refusal to offer what plaintiffs allege are two products separately." Id.

erating system, but from its refusal to offer a separate version of the operating system without the browser or to allow computer manufacturers to unbundle the browser.[295] The Judge stated that Microsoft or the computer manufacturers could easily make an unbundled version available to customers.[296] Microsoft should not, however, be required to allow an inferior version of its product to be placed into the stream of commerce. The company has a legitimate interest in maintaining its customers' goodwill and its own reputation for quality by providing consumers with the most efficient and up-to-date products.[297] Since the integration of Microsoft's browser into Windows enhances the functions of the operating system, a product devoid of the browser would be less attractive to many consumers.[298] Judge Jackson acknowledged that the deletion of the underlying software code for the Internet browser could "cripple" the functioning of the Windows operating system.[299]

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295 "No consumer benefit can be ascribed . . . to Microsoft's refusal to offer a version of Windows 95 or Windows 98 without Internet Explorer . . . ." *Microsoft III*, 84 F. Supp. 2d at 55 (findings of fact); see also *Microsoft III*, 87 F. Supp. 2d at 50 (conclusions of law) ("OEMs were generally not permitted . . . to satisfy consumer demand for a browserless version of Windows 95 without Internet Explorer.").

296 See *Microsoft III*, 84 F. Supp. 2d at 53-54 (findings of fact).

297 Bill Gates explained at Microsoft's 1999 Annual Shareholders' Meeting, "If we can't add Internet support, we can't . . . define the user experience of Windows so that all Windows machines operate the same way, then the Windows brand becomes absolutely meaningless. . . . No company should accept these kinds of limitations on their ability to innovate." Ted Bridis, Gates Standing His Ground Despite Microsoft's Troubles, The Plain Dealer (Cleveland), Nov. 18, 1999, at 1-C. Certain consumers may prefer a "stripped down" version of the operating system without an Internet browser and perhaps without other features that have been integrated into Windows over the years. Simpler versions of the operating system would require less memory and may be less prone to break-downs. However, it would be overly intrusive for the courts to require monopolists to design and market multiple versions of their products in order to meet actual or perceived demand from particular groups of consumers. In *Microsoft III*, Microsoft proposed that, when releasing a major Windows operating system such as Windows 95 or 98, it would continue to make the predecessor system available for licensing for three years "at a royalty no higher than the existing royalty to any OEM that desires such a license." Microsoft Corporation's Proposed Final Judgment at *4, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 572716. Microsoft should not be forced to go beyond this requirement with respect to predecessor versions of its products.

298 When an integration of two products has enhanced the efficiency of the combination, the courts have not required the manufacturers to continue to sell the products separately. See, e.g., ILC Peripherals Leasing Corp. v. IBM Corp., 448 F. Supp. 228, 233 (N.D. Cal. 1978) ("While it would be possible for IBM to sell . . . [a previously separate component] for a separate price from the rest of the . . . unit, just as it would be possible to sell many of the other components separately, IBM is not required to do so . . . ."), aff'd sub nom. Memorex Corp. v. IBM Corp., 636 F.2d 1188 (9th Cir. 1981).

299 See *Microsoft III*, 84 F. Supp. 2d at 50 (findings of fact) ("[D]eletion of any file containing browsing-specific routines would also delete vital operating system routines and thus cripple Windows 95.").

C. Exclusive Dealing Agreements with Suppliers and Customers

Monopolists can exclude actual or potential competitors from their current markets by entering into exclusive dealing agreements with either their suppliers or their customers. As a buyer, a monopolist can use its market power to require suppliers to deal with a rival on more onerous terms or not to deal with the rival at all. If the supplier controls a critical input, its refusal to deal with a monopolist's competitor may prevent that firm from competing in the relevant market. At a minimum, such conduct will raise the competitor's costs, and it may deter its entry into, or hasten its exit from, the relevant market. As a seller, a monopolist can use its market power to prevent its customers from purchasing products from its competitors. If the monopolist's agreements cover one or more critical outlets in the relevant market, it may exclude completely a potential competitor from the market. Such conduct, at the very least, will make it more difficult for the firm to compete in the monopoly market.

An exclusive dealing arrangement also may allow a monopolist to extend its market power into another market. When a monopolist markets products in a related market as well as in the monopolized market, it can use its market power in the monopolized market as leverage to induce customers or suppliers not to deal with its competitors in the related market. Microsoft, for example, has used promises of preferential access to the Windows operating system and boot-up screen to convince computer manufacturers and Internet service providers not to deal with companies marketing Internet browsers that compete with Microsoft's own browser.[300]

The proposed approach would provide a better means of analyzing exclusive dealing arrangements than the courts' current rule of reason standard, which concentrates primarily upon the percentage of customer or supplier outlets foreclosed by the arrangement.[301] Under the current approach, a plaintiff could prevail in an exclusive dealing case only when more than thirty percent of such outlets have been affected.[302] The plaintiff, however, should have to demonstrate merely that a monopolist required one or more suppliers or customers not to deal with it. The adverse effect of an exclusive dealing arrangement is not dependent upon the number of outlets that it covers. A firm may be unable to compete in the relevant market without access to a particular supplier that has a unique cost or quality advantage or to a particular reseller that controls an essential gateway to the mar-

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300 See id. at 90, 93, 95.

301 For a description of the approach, see supra notes 146-47 and accompanying text.

302 See id.

ket.[303] Foreclosure of a single supplier or customer with such characteristics can raise barriers to entry just as severely as the foreclosure of a substantial percentage of the other suppliers or customers in the relevant market.

Once a plaintiff has proven that a monopolist has entered into an exclusive dealing arrangement with one or more suppliers or customers, the defendant's conduct would be deemed conclusively illegal under the proposed approach. A conclusive presumption of illegality is appropriate because for a monopolist, exclusive dealing arrangements have no business purpose other than to perpetuate or extend a monopoly. It would be impossible for a monopolist to meet its burden of proving a legitimate justification for such conduct. Under the proposed approach, the courts can preclude monopolists' exclusive dealings on their face, thus deterring firms from engaging in conduct that has such severe anticompetitive effects and no compensating efficiency benefits.

1. Exclusive Dealing with Suppliers

A monopolist should be permitted to use its market power to obtain concessions from suppliers on terms of sale such as pricing, delivery, or product quality. Such aggressive negotiations promote economic efficiency and ultimately benefit consumers.[304] However, a monopolist has no legitimate business reason to require its suppliers to deal only with it and to refrain from dealing with its actual or potential competitors. Forcing a supplier not to deal with a competitor makes no economic sense other than as a means of perpetuating monopoly power. A monopolist achieves no efficiency gains as a result of such a requirement. In truth, such exclusive dealing arrangements may reduce a monopolist's efficiency, for they waste valuable negotiating leverage that could otherwise be used to achieve concessions from a supplier on price, delivery, or quality. The only purpose and effect of such a requirement is to make it more difficult for firms to enter or to remain in the relevant market.[305]

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303 See Krattenmaker & Salop, supra note 111, at 234 ("The simplest and most obvious method by which foreclosure of supply can raise rivals' costs is the purchaser's obtaining exclusionary rights from all (or a sufficient number of) the lowest-cost suppliers.... Competitors of the purchaser experience a cost increase as they necessarily shift to higher cost suppliers . . . .").

304 See Thomas A. Piraino, Jr., A Proposed Antitrust Approach to the Conduct of Retailers, Dealers, and Other Resellers, 73 Wash. L. Rev. 799, 836-37 (1998) (pointing out that non-monopolists should be permitted "wide latitude to select their suppliers without running afoul of the antitrust laws").

305 Thus, the Supreme Court has concluded that monopolists violate Section 2 when they use their purchasing power to force suppliers not to deal with their competitors on

2. *Exclusive Dealing with Customers*

A monopolist's exclusive dealing arrangements with its customers may take several different forms. The monopolist may require expressly that its customers purchase certain products or services only from it for a stated period of time. Alternatively, the monopolist may require its customers to purchase from it all, or a substantial portion, of their requirements for certain products or services. Finally, a monopolist may impose conditions of sale that make it onerous for a customer to purchase competing products from another supplier.[306] In a competitive market, a seller may have legitimate reasons for requiring its customers to enter into such arrangements. Exclusive dealing and requirements contracts force a reseller to concentrate on promoting the seller's products and prevent it from giving rivals a "free ride" on the seller's promotional efforts.[307] Such rationales, however, do not apply to monopolists. Since a monopolist's products are, by definition, already dominant in the relevant market, it need not require its resellers to focus their efforts exclusively on its products.

A monopolist incurs short-term costs when it imposes exclusive dealing arrangements on its customers. Such agreements reduce a monopolist's reservoir of goodwill with its customers and use up leverage with which a monopolist could have pursued concessions on price,

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equal terms. See United States v. Griffith, 334 U.S. 100, 106-09 (1948) (noting that owners of movie theaters induced film distributors not to license first-run films to theaters' competitors), overruled on other grounds by Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 764 n.8 (1984); Schine Chain Theatres, Inc. v. United States, 334 U.S. 110, 115-16 (1948) (same), overruled on other grounds by *Copperweld*, 467 U.S. at 764 n.8. The FTC recently brought a suit against Mylan Laboratories alleging that the company, a manufacturer of generic drugs used to treat anxiety, illegally entered into a long-term exclusive license with a supplier of the active ingredient for the drugs. See FTC v. Mylan Lab., Inc., 62 F. Supp. 2d 25, 32 (D.D.C. 1999).

306 Microsoft, for example, has been accused of requiring computer manufacturers to pay a per processor royalty fee on all computers that they ship, regardless of whether they include the Windows operating system. See Caldera, Inc. v. Microsoft Corp., 72 F. Supp. 2d 1295, 1301 (D. Utah 1999) ("It would make no sense for an OEM to install . . . [a competing operating system] when it had already paid for MS-DOS on every machine.").

307 See Continental T.V., Inc. v. GTE Sylvania, Inc., 433 U.S. 36, 55 (1977) (preventing free riding may justify certain restraints placed by seller on its customers); American Motor Inns, Inc. v. Holiday Inns, Inc., 521 F.2d 1230, 1252 (3d Cir. 1975) (stating that hotel chain's exclusionary agreements with franchisees is justified, in part, by chain's desire to strengthen its position vis-à-vis its competitors); Joyce Beverages v. Royal Crown Cola Co., 555 F. Supp. 271, 278 (S.D.N.Y. 1983) (recognizing exclusive dealing as means of ensuring that retailer "devotes undivided loyalty to its particular brand and that it competes vigorously against all competing brands"); Thomas A. Piraino, Jr., Making Sense of the Rule of Reason: A New Standard for Section 1 of the Sherman Act, 47 Vand. L. Rev. 1753, 1783 (1994) (describing how exclusive dealing arrangements make distributors "more likely to invest in training, promotion, and point-of-sale services that will make the products more attractive to consumers").

delivery, and other terms of sale. In some cases monopolists even have granted customers price reductions in order to induce them not to deal with competitors. Microsoft, for example, has reduced its prices for its Windows license, offered its Internet browser for free, and foregone revenue that it could have received for its customers' preferential placement on the Windows boot-up screen, all in exchange for agreements by OEMs and IAPs to promote its browser over Netscape's browser.[308] A monopolist would risk incurring such short-term costs only if it believed that in the long run, it could benefit by excluding actual or potential competitors from the monopolized market or from a related market to which it was attempting to extend its monopoly power. Thus, the only possible rationale for a monopolist's exclusive dealing arrangement with its customers is to perpetuate or extend its monopoly by making it more difficult for potential rivals to access the customer outlets necessary to survive in the relevant market.[309]

Although Judge Jackson held that Microsoft violated Section 2 by foreclosing the OEM and IAP distribution channels to Netscape, he concluded that Microsoft's arrangements with the OEMs and IAPs did not constitute illegal exclusive dealing agreements under Section 1 of the Sherman Act.[310] Judge Jackson acknowledged that these arrangements excluded Netscape from "the two most efficient channels for distributing browsing software."[311] Nevertheless, he held that in order to violate Section 1, the exclusive dealing arrangements must foreclose at least forty percent of the relevant market.[312] Since Netscape could access other distribution outlets for its browser (such as direct downloads from the Internet, retail outlets, and direct mailings), the government had not proven the requisite foreclosure for a Section 1 violation.[313]

Under the approach proposed in this Article, the courts would not continue this formalistic distinction between Sections 1 and 2 of the Sherman Act. Exclusive dealing arrangements entered into by monopolists would be deemed conclusively illegal under each Section

308 See United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 67-68, 71-72 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

309 The courts generally have found exclusive dealing arrangements illegal when they foreclose a substantial percentage of the outlets for a particular product. See Twin City Sportservice, Inc. v. Charles O. Finley & Co., 676 F.2d 1291, 1302 (9th Cir. 1982).

310 See *Microsoft III*, 87 F. Supp. 2d at 52-53 (conclusions of law).

311 *Microsoft III*, 84 F. Supp. 2d at 69 (findings of fact).

312 See *Microsoft III*, 87 F. Supp. 2d at 52 (conclusions of law).

313 See id. at 53.

because such arrangements have no business purpose other than to perpetuate or extend a monopoly. Under the proposed approach, a court's analysis of Microsoft's agreements with the OEMs and IAPs would be relatively simple. A court would not have to consider the complex issue of the percentage of customer outlets foreclosed by the exclusive arrangements. It would be sufficient, as Judge Jackson found in the *Microsoft III* findings of fact, that as a result of Microsoft's exclusive dealing arrangements with OEMs and IAPs, Netscape's browser was shut out from the most important distribution channels, and Netscape's market share declined precipitously.[314] In order to induce its customers to enter into such arrangements, Microsoft had to forego profits it otherwise would have received under its Windows license agreements. Microsoft also gave valuable consideration, such as preferential technical assistance and placement on the desktop screen, to its customers at no extra charge. Microsoft had no rational motive to forego the revenues it could have obtained, other than to exclude a potential competitor from its monopoly market.[315] Furthermore, as a monopolist, Microsoft had no legitimate reason to force its customers to promote its products exclusively. Its dominance in the market already assured that customers would concentrate their efforts on selling Microsoft products. Thus, the only rational explanation for Microsoft's exclusive dealing arrangements lies in the company's attempt to perpetuate its operating system monopoly and to extend its market power into the browser market.

D. *Predatory Pricing*

Many courts have adopted the Areeda-Turner approach to predatory pricing, under which prices above average marginal cost are considered proper and those below average marginal cost are deemed illegal.[316] The approach proposed in this Article would continue to afford price/cost comparisons an important role, but they would not be the only evidence considered in predatory pricing cases. The courts also would consider evidence indicating a monopolist's purpose for reducing its prices.

Some courts have pointed out the advantages of using evidence of intent to establish whether a defendant has engaged in predatory pricing. In *Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litigation)*,[317] for example, the court

314 See id.

315 "Microsoft would not have absorbed" these considerable costs except as a means "of preserving the applications barrier to entry." Id. at 45-46.

316 See supra notes 185-87 and accompanying text.

317 481 F. Supp. 965 (N.D. Cal. 1979).

stated that "[i]ntent evidence can prove helpful . . . [to determine whether the defendant] was cutting losses or cutting throats."[318] In most cases, there should be substantial evidence of a monopolist's competitive purpose for lowering its prices. "A firm seeking to expel or exclude rivals by selling at unremunerative prices will leave traces."[319] Memoranda, correspondence, and strategic planning documents often reveal a firm's concerns about potential competitors and its objectives in responding to competition with lower prices.[320]

The plaintiff should have a heavier burden of proof in predatory pricing than in access, tying, or exclusive dealing cases. Monopolists, like other firms, usually have legitimate competitive reasons for lowering their prices: A monopolist is most likely to lower its prices simply to attract customers away from a new entrant in its market. In order to preserve the benefits of price cutting in monopoly markets, a defendant should not have to introduce evidence of its competitive intent until the plaintiff has met the burden of proving that a lower price was in some respect "predatory." A price cut should be deemed predatory only when a plaintiff can demonstrate that it is at a level below a monopolist's costs or otherwise is designed to drive the plaintiff from the market.

Judge Jackson did not find that Microsoft engaged in predatory pricing. However, plaintiffs in private monopolization cases may attempt to use the findings of fact in *Microsoft III* to support predatory pricing claims. Judge Jackson pointed out that "Microsoft sought to increase . . . [its Internet browser's] share of usage by giving it away for free. . . . Microsoft decided not to charge an increment in price when it included Internet Explorer in Windows."[321] Under the proposed approach, plaintiffs should not be able to meet their initial burden of proving that Microsoft engaged in predatory pricing by failing

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318 Id. at 996.

319 Sullivan, supra note 55, at 1230.

320 The Department of Justice recently filed a predatory pricing case against American Airlines, alleging that the company added capacity and reduced fares at its Dallas/Ft. Worth (DFW) hub in order to prevent low-cost airlines from gaining a toe-hold at the hub. United States v. AMR Corp., No. 99-1180-JTM (D. Kan. filed May 13, 1999). As evidence of the company's anticompetitive intent, the Department of Justice cited a memorandum from American Airlines' Chairman and CEO stating that "[i]f you are not going to get . . . [the low-priced airline] out then no point to diminish profit." Complaint ¶ 31, *AMR Corp.* (No. 99-1180-JTM), available at <http://www.usdoj.gov/atr/cases/f2400/2438.htm>. This memorandum indicates that American's purpose for its pricing strategy at DFW was to drive out a new entrant.

321 United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 44 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

to charge an additional price for including its browser with Windows. Because the browser enhances the function of Windows, it should not be viewed as a separate product for predatory pricing purposes. The price imputed to the browser portion of the operating system is therefore irrelevant. Microsoft should not be liable for predatory pricing unless it prices the Windows operating system as a whole below its average total cost or otherwise targets lower prices for the entire operating system at new entrants which it is attempting to drive from the market. No such conduct was evident in the findings of fact in *Microsoft III*.

Price/cost comparisons are important in predatory pricing cases because a monopolist usually has no rational economic reason to incur losses on the products it sells, other than to eliminate a competitor.[322] Although most courts have drawn the relevant pricing line at average *marginal* cost,[323] it is more appropriate to deem prices below average *total* cost presumptively illegal, because at that level, the monopolist and all equally or less efficient firms will be incurring losses.[324] If a monopolist were permitted to price below average total cost, it could use its deep pockets to exclude an equally or less efficient rival. "To meet the monopolist's price, the rival, too, would have to price below full cost, and its resources would be drained first."[325]

Under certain circumstances, a plaintiff may be able to meet its initial burden of proof even when a monopolist's prices are at a level above its costs. The plaintiff may demonstrate that, although the defendant made some profit after its price cutting, it was still attempting to drive a competitor from the market. As Justice Breyer recognized in *Barry Wright Corp. v. ITT Grinnell Corp.*,[326] "if a dominant firm's costs are lower than its competitors', it could use an 'above cost' price cut to drive out competition, and then later raise prices to levels higher than they otherwise would be."[327] Above-cost price cuts should be illegal when a monopolist targets temporary price reductions at a new entrant and foregoes profits it otherwise could have obtained. In such a case the only rational purpose for the defendant's conduct would be to recoup the lost profits after the plaintiff's exit from the market.[328]

322 See Areeda & Turner, supra note 181, at 712-13.

323 See supra notes 185-95 and accompanying text.

324 See Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965, 992 (N.D. Cal. 1979).

325 Sullivan, supra note 37, at 624.

326 724 F.2d 227 (1st Cir. 1983).

327 Id. at 233.

328 In the airline industry, for example, most hub airports are now dominated by a single airline. Since the dominant airline's costs are often lower than those of a new entrant, it

A plaintiff may be able to demonstrate that a defendant combined targeted capacity expansion with selective price cuts to achieve its predatory purpose. In most cases, the expansion of capacity by a monopolist should not be deemed to constitute an illegal response to a new firm's entry into the monopolist's market. The restriction of capacity, not its expansion, is one of the principal economic problems of monopoly power. The expansion of productive capacity benefits consumers by reducing prices and increasing the range of product choices. The courts and enforcement agencies are now less willing to conclude, as Judge Hand did in *Alcoa*,[329] that capacity expansion can constitute a Section 2 violation.[330] There are cases, however, in which a monopolist can violate Section 2 by directing capacity expansion and price cuts against new market entrants. The airline industry is particularly susceptible to such predatory conduct. A dominant airline incurs no sunk costs when it temporarily diverts capacity to a hub airport where a new entrant threatens its position. Thus, incumbent airlines can increase capacity at a hub and then move it back out of the market "at practically zero cost."[331] Such additions to capacity facilitate dominant airlines' price cutting. The airlines can increase their available discount fares quickly and then eliminate the discounts after a competitor has exited the hub market.[332] Low-cost airlines must make their decisions on whether to enter hub markets based on their probability of success. When dominant airlines have demonstrated their willingness to use such a combination of capacity expansion and price cutting to drive out more efficient competitors, the probability of success for a new entrant is lowered considerably, and it is less likely to take a chance on entering a local market. Indeed, "one or two temporary reductions by the monopolist in response to . . . entry should

can temporarily reduce its prices to a level above its average total costs but below the profit-maximizing price. Such a reduction may bring the dominant carrier's prices to a level below a new entrant's costs. See Edwin McDowell, He Freed the Airlines. But What to Do Now?, N.Y. Times, May 16, 1999, § 3 (Money & Business), at 5 (citing comments of Alfred E. Kahn, Professor Emeritus, Cornell University).

329 For a discussion of Judge Hand's reasoning in *Alcoa*, see supra notes 107-13 and accompanying text.

330 For example, in In re E.I. du Pont de Nemours & Co., 96 F.T.C. 653 (1980), the FTC found that DuPont, the dominant producer of titanium dioxide pigment, did not violate Section 2 by embarking on an expansion strategy for the product. See id. at 751.

331 McDowell, supra note 328, at 5.

332 In one case, "an incumbent carrier was offering fewer than 1500 low-fare tickets on a route, and when low-fare competition came in, the incumbent increased its low-fare tickets to 50,000." Id. When the price cutting competitor left the hub market, the incumbent reduced its low-price tickets to 1000. See id.

convince potential entrants that it will not tolerate entry even temporarily."[333]

In its current predatory pricing case against American Airlines, the government has charged the company with using a temporary expansion of capacity and lower fares to drive new entrants out of the Dallas/Ft. Worth (DFW) market. American now controls seventy percent of the scheduled airline seats from DFW.[334] The government argues that at airports where carriers hold such monopoly power, other large airlines are not likely to challenge the carriers' dominance. Smaller, low-cost carriers (LCCs) are thus often the only competitive alternative.[335] The government believes that American lowered its prices and added more flights on routes from DFW in the mid-1990s in order to prevent three LCCs from entering the DFW market.[336] Under the proposed approach, the government's allegations, if proven at trial, would be sufficient to meet its initial burden of proving that American's lower prices were predatory.[337]

Once a plaintiff meets its initial burden of showing that a monopolist's lower prices likely were predatory, the monopolist should have an opportunity to rebut by proving that it had a legitimate reason for reducing its prices. The monopolist may have lowered its prices for a reason other than to perpetuate or extend its monopoly power. A monopolist might, for example, be liquidating excess, perishable, or obsolete inventory. In markets characterized by expanding capacity or shrinking demand, the monopolist simply may be attempting to achieve the best price-cost relationship available to it.[338]

333 Sullivan, supra note 37, at 627.

334 See Complaint ¶ 20, United States v. AMR Corp., No. 99-1180-JTM (D. Kan. filed May 13, 1999), available at <http://www.usdoj.gov/atr/cases/f2400/2438.htm>.

335 See id. ¶¶ 21-24.

336 See id. ¶¶ 5-7.

337 The government's complaint alleges that American's ticket prices at DFW were "less than American's costs of adding the flights." Id. at ¶ 50. Even if the government could not show that American's ticket prices were below its costs, it could introduce other evidence that its prices were predatory. The government's complaint alleges, for example, that American added specific flights to compete with the low-cost carriers' (LCCs) and that, after the LCCs were driven from certain routes, American immediately began to reduce its service and increase its fares. See id. ¶ 52. In one case, American's fares were 80% higher after an LCC exited a particular route. See id. ¶ 33. Such conduct allegedly allowed American to recoup the costs of its predatory pricing strategy. See id. ¶ 57.

338 See Transamerica Computer Co. v. IBM Corp. (In re IBM Peripheral EDP Devices Antitrust Litig.), 481 F. Supp. 965, 996-1102 (N.D. Cal. 1979) (finding that IBM did not engage in illegal predatory pricing of its computer equipment).

E. Fraudulent Trade Practices

Plaintiffs' initial burden of proof should be the highest in cases involving fraudulent trade practices such as false product pre-announcements or sham litigation. However, once the plaintiff has met its burden of proof, such practices should be deemed conclusively illegal, because they have no rational economic purpose other than to assure the continuation or extension of a defendant's monopoly power.

1. False Product Pre-Announcements

The term "vaporware" has been used to describe a situation in which a monopolist pre-announces the introduction of a new or improved product with the intent of preventing competition from a similar product.[339] The theory is that through such pre-announcements, a monopolist can convince consumers to refrain from buying competing products.[340] It can also deter would-be competitors from committing the capital resources necessary to develop and market a comparable product. Some commentators argue that product pre-announcements can have a particularly adverse effect on competition in network markets, because they create a "bandwagon" effect in which consumers "flock to join the network of the pre-announced product."[341] Microsoft, for example, has been accused of making knowingly false pre-announcements about the release dates of new versions of Windows in order to prevent the development of competing operating systems.[342]

The courts must be careful to limit monopolists' liability for product pre-announcements. Consumers generally benefit from pre-announcements because they provide valuable information about forthcoming products. Such information normally improves the efficiency of markets.[343] Thus, plaintiffs should have to meet a substantial burden of proof before a monopolist can be held liable under Section 2 for a product pre-announcement. A plaintiff should be re-

[339] See Lopatka & Page, supra note 59, at 356.

[340] See id.

[341] Stephan M. Levy, Should "Vaporware" Be an Antitrust Concern?, 42 Antitrust Bull. 33, 37 (1997).

[342] See id. at 34-36; see also Caldera, Inc. v. Microsoft Corp., 72 F. Supp. 2d 1295, 1328 (D. Utah 1999) (denying Microsoft's motions for partial summary judgment in case alleging unlawful maintenance of operating system monopoly). In its Section 2 case against IBM in 1969, the government alleged that the company had used premature product announcements in order to maintain its monopoly in the computer market. See Levy, supra note 341, at 34-36.

[343] Thus some commentators have argued that product pre-announcements should be "lawful per se." See Lopatka & Page, supra note 59, at 357.

quired to demonstrate that a product pre-announcement was knowingly and intentionally false or misleading.[344] However, if a plaintiff can meet this high standard, the courts' inquiry need proceed no further. The monopolist's conduct should be presumed conclusively illegal under Section 2. A monopolist has legitimate business reasons to make accurate and truthful early announcements about forthcoming products. Such announcements enhance the monopolist's goodwill, because they give its customers the ability to plan their purchases in advance. A monopolist, however, has no rational economic reason to make false or misleading pre-announcements, other than to perpetuate or extend its monopoly power. When a monopolist makes such announcements, it damages its reputation and credibility with its customers. A firm only would be willing to suffer such consequences if it believed that it was receiving a compensating benefit from its ability to exclude actual or potential competitors from the market.

2. *Sham Litigation*

Monopolists can use legal or administrative proceedings to delay or prevent their competitors' entry into the relevant market.[345] A plaintiff's burden of proof should be just as rigorous in such cases as in instances of false or misleading product pre-announcements. In order to sustain a claim of sham litigation, a plaintiff must be able to prove that a monopolist was proceeding in bad faith and had no legitimate basis for asserting legal or administrative claims.[346]

Under the proposed approach, the courts easily should be able to distinguish legitimate from sham legal and administrative claims. In

344 See MCI Communications Corp. v. AT&T Co., 708 F.2d 1081, 1128-29 (7th Cir. 1983) (holding that claim of illegal pre-announcement should not have gone to jury because there was no evidence that it was "knowingly false or misleading"). Such an approach would be similar to the courts' analysis of product disparagement in Section 2 cases. In order to prevail under such a claim, a plaintiff must prove, inter alia, that a monopolist made knowingly false statements about a competitor's products. See David L. Aldridge Co. v. Microsoft Corp., 995 F. Supp. 728, 749 (S.D. Tex. 1998).

345 For example, in *MCI*, the Seventh Circuit upheld jury findings that AT&T's tariff filings with state regulatory agencies were made in a bad-faith effort to deny MCI entry into the long-distance telephone market. *MCI*, 708 F.2d at 1153-58. Similarly, in Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172 (1965), the Supreme Court found that a Section 2 violation occurs if a patentee attempts to enforce a patent that it had obtained through a fraudulent misrepresentation to the Patent and Trademark Office, provided that the other elements necessary to a Section 2 case are present. See id. at 174.

346 The Supreme Court has pointed out that "the lawsuit must be objectively baseless in the sense that no reasonable litigant could realistically expect success on the merits." Professional Real Estate Investors, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49, 60 (1993); see also Otter Tail Power Co. v. United States, 410 U.S. 366, 380 (1973) (defining sham litigation as "repetitive lawsuits carrying the hallmark of insubstantial claims").

most cases monopolists have legitimate reasons to assert their regulatory and intellectual property rights. In certain cases, however, a plaintiff may be able to demonstrate that a firm's only rationale for initiating litigation or administrative proceedings was to perpetuate or extend its monopoly. Repetitive litigation or administrative claims that lack any foundation are against a monopolist's economic interests. The time and expense involved in such proceedings cannot be justified without the prospect of some reasonable return. When a monopolist's claims have no logical legal or factual foundation, the only explanation for the monopolist's conduct lies in its attempt to prevent potential competitors from entering the relevant market. Since the only purpose of such conduct is to perpetuate or extend monopoly power, the courts should prohibit the conduct under Section 2.

V
REMEDIES

A. *The Appropriate Legal Standard*

The proposed approach should aid the federal courts in achieving the ultimate objective of Section 2 litigation: fashioning remedies which preclude defendants from misusing their monopoly power and which deter other firms from engaging in similar conduct.

Three different types of remedies are possible in Section 2 cases. Monetary remedies include treble damages, fines, and disgorgement of monopoly profits.[347] Structural remedies force the breakup of a monopolist or the compulsory licensing of its intellectual property.[348] Finally, regulatory remedies require monopolists to refrain from certain anticompetitive conduct and/or to engage in affirmative practices to remediate monopolistic behavior.[349]

Structural remedies are a radical approach to the problem of monopoly, and they have been invoked only in exceptional cases. While Justice Brandeis once derided arguments against the breakup of a monopoly as based on the maxim, "What man has illegally joined to-

347 Section 4 of the Clayton Act, 15 U.S.C. § 15 (1994), permits treble damages actions. Sherman Act violations may constitute felonies with fines of up to $10 million for corporations. See 15 U.S.C. §§ 1, 2 (1994).

348 See, e.g., United States v. American Tobacco Co., 221 U.S. 106, 187-88 (1911) (ordering dissolution of American Tobacco Company); Standard Oil Co. v. United States, 221 U.S. 1, 78-81 (1911) (ordering breakup of Standard Oil Company); United States v. General Elec. Co., 115 F. Supp. 835, 843-46 (D.N.J. 1953) (ordering royalty-free licensing of patents); In re Eli Lilly & Co., 95 F.T.C. 538, 546-52 (1980) (requiring by consent order nonexclusive, royalty-free licensing of patents).

349 See infra notes 361-64 and accompanying text.

gether, let no court put asunder,"[350] in practice courts have been unwilling to impose such drastic remedies. In fact, since 1890, the government has initiated 136 lawsuits against monopolies, and in only thirty-four of those cases has the government achieved substantial divestitures.[351]

Structural remedies are usually inappropriate in Section 2 cases because the economic problems with monopolies stem not from their existence, but from their conduct. Monopolies, in fact, often are achieved by virtue of their superior efficiency in meeting consumer demand.[352] A firm designed to function effectively as a single entity cannot be broken up into several parts "without a marked loss of efficiency."[353] Robert Bork has concluded that "dissolution [of monopolies] would always impose a significant efficiency cost."[354] Furthermore, courts do not have the experience or competence to determine how to dismember a monopoly.[355] Finally, judicial resources are wasted when the government seeks divestiture in a Section 2 case. Facing potential dismemberment, a defendant will inevitably conclude that its only alternative is to litigate as aggressively as possible. "Thus, a section 2 divestiture case is very likely to be a legal Verdun—a large-scale, hard-fought, slow, and expensive combat."[356]

Divestiture in Section 2 cases is only appropriate in those rare cases in which a monopoly did not result from a firm's internal growth. As two antitrust commentators recently pointed out, "[a] firm that achieves a dominant size by internal growth is likely to have

350 Louis D. Brandeis, An Illegal Trust Legalized, The World Today, Dec. 1911, at 1440, 1441 (writing as counsel to plaintiffs seeking breakup of American Tobacco Company).

351 See Kovacic, supra note 101, at 1110-11.

352 See supra notes 44-48 and accompanying text.

353 United States v. Aluminum Co. of Am., 91 F. Supp. 333, 416 (S.D.N.Y. 1950) (rejecting divestiture alternative in *Alcoa* case). Similarly, in *United Shoe*, Judge Wyzanski denied the government's petition to divide the company into three separate parts, reasoning that such a divestiture would result in the loss of substantial economies of scale. See United States v. United Shoe Mach. Corp., 110 F. Supp. 295, 348 (D. Mass. 1953), aff'd, 347 U.S. 521 (1954). In a memorandum advocating the settlement of the government's case against IBM in 1982, an official of the Department of Justice pointed out that "no structural relief proposal has been identified that would inject new competition into the industry while retaining the efficiencies" of companies such as IBM. Memorandum from Abbot B. Lipsky, Jr. to the Attorney General (Jan. 6, 1982), reprinted in Sullivan, supra note 37, at 642.

354 Bork, supra note 45, at 878; see also id. at 879 (arguing that if monopolist is dissolved into separate parts, officers of new companies will be less able to manage business efficiently).

355 However, when a monopoly has been acquired as the result of an acquisition of a competitor, a court can order the divestiture of the acquired business without significantly affecting the defendant's efficiency. See infra note 358 and accompanying text.

356 Baker, supra note 90, at 901.

achieved its position by selling a better product."[357] In certain cases, however, a monopoly may not be the result of a firm's superior business performance. Structural relief makes sense in such cases because the defendant's monopoly would not have been acquired as the result of consumer preferences. For example, when a firm has achieved its dominant power through acquisitions, the courts may order dissolution in a manner that does not undermine the firm's productive efficiency.[358] Structural relief may also be appropriate in cases in which the government has sanctioned the creation of a monopoly. Until the early 1980s, the federal government permitted AT&T to operate a regulated monopoly in local telephone service. This market structure allowed AT&T to engage in practices that limited competition in long-distance telephone service.[359] The government's 1982 Consent Decree with AT&T separated the local Bell telephone companies from AT&T and unleashed a torrent of efficiency gains and technical innovations in the telephone market.[360]

In contrast to structural remedies, which involve issues of economics and industrial organization in which courts have little competence, conduct remedies play to the federal judiciary's strengths. Judges and juries are "well suited to the task of holding individual firms accountable for their conduct."[361] It is a task they face every day in resolving legal disputes. The courts can fashion general injunctive decrees which can be administered with minimal oversight and

357 John E. Lopatka & William H. Page, A (Cautionary) Note on Remedies in the Microsoft Case, Antitrust, Summer 1999, at 25, 27.

358 For example, in Standard Oil Co. v. United States, 221 U.S. 1, 78 (1911), and United States v. Grinnell Corp., 384 U.S. 563, 580 (1966), the Supreme Court ordered dissolution of monopolies achieved at least in part by the acquisition of other firms. In Ford Motor Co. v. United States, 405 U.S. 562 (1972), the Supreme Court stated that "divestiture is particularly appropriate where asset or stock acquisitions violate the antitrust laws" because it "is a start toward restoring the pre-acquisition situation." Id. at 573. As Judge Posner explained, "divestiture is simpler to effectuate where the firm to be broken up is itself the product of mergers. The mergers suggest the lines along which the firm can be broken up with minimal disruption." Posner, supra note 191, at 84.

359 See Baker, supra note 90, at 913-16. By virtue of its monopoly over local telephone service, AT&T could accomplish two anticompetitive goals in the long-distance market: It could discriminate against its long-distance competitors by charging unreasonable prices for interconnections to its local telephone networks, and it could subsidize lower prices in the long-distance market through the monopoly prices that it charged in local telephone markets. See Bittner, supra note 182, at 304.

360 Since the divestiture, AT&T has reduced its expenses and long-distance prices, and new entry into the telephone equipment markets has promoted innovations such as fiber-optic networks, satellite relay, digital switches, and cellular transmission. See Adams & Brock, supra note 58, at 772. AT&T's Chairman, Robert Allen, has conceded that AT&T was "forced by the divestiture to make changes that probably were good for [the company]." Id. at 773.

361 Sullivan, supra note 55, at 1224.

leave the details of compliance to the parties.[362] In contrast to administrative regulations that continue indefinitely, antitrust judgments and consent decrees can be tailored to last only as long as the relevant market requires remediation of a defendant's conduct. A judgment or consent decree can provide that it will expire when the relevant technology changes or when other circumstances cause a monopolist to lose its market power.[363] Alternatively, a court can retain jurisdiction over a monopolist and review a consent decree at a later date to determine whether it should be modified due to changes in markets or technologies.[364]

The new Section 2 approach proposed in this Article will allow the courts to fashion effective conduct remedies against the primary means by which firms perpetuate or extend their monopoly power. In most cases the courts will have to do nothing more than require a monopolist to terminate the offending conduct and/or return to its prior pattern of dealing with its competitors. In the case of illegal product integrations, the monopolist can be required to return to its prior method of marketing the products separately. Exclusive dealing can be remedied simply by an order precluding a monopolist from requiring that its suppliers or customers avoid dealing with its competitors. In predatory pricing cases, monopolists can be ordered to return to the pricing levels that prevailed before the entry of a new competitor. Finally, the courts can prevent fraudulent trade practices by requiring monopolists to refrain from publishing false product preannouncements or pursuing sham litigation.

In the case of access restrictions, the courts may have to require monopolists not only to discontinue their improper conduct, but also

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362 See infra note 364.

363 See id.

364 In several recent cases involving mergers and joint ventures, the federal antitrust agencies have negotiated consent decrees providing for a flexible means of ensuring equal access by all competitors to resources critical to competition in particular markets. See Eli Lilly & Co., 61 Fed. Reg. 31,117 (F.T.C. 1996) (permitting acquisition of pharmacy benefit manager by pharmacy company); United States v. AT&T Corp., 59 Fed. Reg. 44,158 (D.O.J. 1994) (permitting merger between AT&T and McCaw Cellular Communications); United States v. Tele-Communications, Inc., 59 Fed. Reg. 24,723 (D.O.J. 1994) (permitting merger of companies controlling cable television and programming operations); United States v. MCI Communications Corp., Civ. A. No. 94 1317, 1994 WL 605795 (D.D.C. Sept. 28, 1994) (permitting joint venture between MCI and British Telecommunications). These decrees do not impose structural remedies such as divestment. They permit the transactions at issue to proceed but require that the parties engage in certain conduct on an ongoing basis to ensure that third parties can use essential facilities on equal terms. In industries in which competitive conditions are rapidly evolving, the decrees expire within a relatively short period of time. These consent decrees demonstrate that antitrust regulators can devise effective means of ensuring open access to essential facilities without unduly interfering in their operations.

to engage in affirmative efforts to eliminate the future effects of such conduct. Even in such cases, however, the injunctive remedy can be designed to minimize continuing judicial oversight. Instead of specifying the precise terms of access, the courts simply can issue a general order that a monopolist make its essential resources available in a nondiscriminatory fashion to all competitors.[365]

Such conduct remedies would prevent monopolists from engaging in the types of behavior that extend or perpetuate their monopoly power. The courts then could be assured that the balance of monopolists' behavior will promote economic efficiency or, at worst, will be economically neutral to consumers. Thus, in most cases, the courts would not need to consider structural remedies in order to protect consumers from the improper exercise of monopoly power. Breakup or dissolution of a monopolist only would be necessary in those rare cases in which a monopoly's anticompetitive effects are the result of government regulation, acquisitions, or other special circumstances unrelated to the monopolist's business performance.

B. Proposed Remedies in Microsoft III

Antitrust commentators have proposed several structural remedies in *Microsoft III.* These include requiring Microsoft to publish its proprietary source code for Windows, auctioning the source code to two or three companies that could sell competing systems, splitting the company into several parts that could compete in the operating system market, and breaking the company up into separate entities to serve the markets for operating systems, applications programs, and Internet-related businesses.[366] Judge Jackson imposed a combination of structural and conduct remedies in *Microsoft III.*[367] The *Microsoft III* judgment splits the company into two separate businesses, one for the operating system market and the other for applications such as Microsoft's Internet browser and Office group of software (which in-

365 The courts have issued such injunctions in essential facility cases. For example, in the first such case, United States v. Terminal R.R. Ass'n, 224 U.S. 383 (1912), the Supreme Court required the defendants to allow access to their facilities "upon such just and reasonable terms as shall place such applying company upon a plane of equality in respect of benefits and burdens" with the current users of the facilities. Id. at 411-12.

366 See Joel Brinkley, Prosecutor Seeking to Break the Grip of Windows System, N.Y. Times, Nov. 10, 1999, at A1; see also Lopatka & Page, supra note 59, at 354 (evaluating breakup of Microsoft into separate companies for operating system and applications markets).

367 United States v. Microsoft Corp. (*Microsoft III*), 84 F. Supp. 2d 9, 44 (D.D.C. 1999) (findings of fact), 87 F. Supp. 2d 30 (D.D.C.) (conclusions of law), 97 F. Supp. 2d 59 (D.D.C. 2000) (final judgment), petition for cert. filed, 69 U.S.L.W. 3111 (U.S. July 26, 2000) (No. 00-139).

cludes Microsoft Word, Excel, and Power Point).[368] The proposed conduct remedies are designed, among other things, to ensure OEMs' freedom to choose the applications and middleware that they ship with the Windows operating system. The conduct remedies apply for a period of three years after the company's reorganization is completed.[369]

The government argued that the reorganization of the company would be more effective than permanent conduct remedies in ensuring competition in the operating system market. According to the government, conduct remedies would be ineffective because Microsoft's anticompetitive behavior is of a type hard to detect in a timely manner. Furthermore, the company would have an incentive to evade conduct remedies in order to preserve its monopoly power.[370] By contrast, the separation of the operations business from the applications business would "have the effect of putting important middleware into the hands of a firm that has no incentive to protect Windows."[371] The applications company would be likely to write versions of software that could run on operating systems other than Windows. "Those steps by Apps Co could increase usage of competing operating systems; that, in turn, could induce other [independent software vendors] to write applications and develop complements to those operating systems; and a snowball effect leading to real operating system competition could ensue."[372] The applications company also would have an incentive "to develop its products into full-fea-

368 See *Microsoft III*, 97 F. Supp. 2d at 64, 71 (final judgment).

369 During that period Microsoft will be required to (1) refrain from taking any actions against OEMs designed to induce them not to promote competing products, (2) implement uniform license terms for all OEMs using its operating systems, (3) allow OEMs to modify the boot-up sequence for Windows to remove Microsoft icons or to add new OEM-designed interfaces, (4) disclose to OEMs and independent software vendors sufficient technical information concerning its APIs to permit such parties to design software that will interface effectively with Windows, (5) refrain from taking any actions that degrade the performance of any non-Microsoft middleware on the Windows system, and (6) refrain from entering into any exclusive dealing agreements with any Internet or software companies. See id. at 66-68. In addition, Microsoft is prohibited from integrating any new middleware products into its operating system unless it offers an identical version of Windows from which the new integrated product could be readily removed by OEMs, and once removed would be available to OEMs at a lower price. See id. at 68.

370 See Declaration of Rebecca M. Hendersen ¶ 27, *Microsoft III* (No. Civ.A.98-1232), available at <http://www.usdoj.gov/atr/cases/ms_remediespapers.htm>. As Robert Bork recently pointed out, "Regulation would be intrusive, error-prone and endless. Does anyone want to do to the software industry what the Interstate Commerce Commission did for railroads and trucking? A body of necessarily complex regulation, moreover, would invite competitors to tie up and slow down Microsoft in endless litigation." Robert H. Bork, There's No Choice: Dismember Microsoft, Wall St. J., May 1, 2000, at A34.

371 Declaration of Rebecca H. Henderson ¶ 102, *Microsoft III* (No. Civ.A.98-1232).

372 Plaintiffs' Memorandum in Support of Proposed Final Judgment at *19, *Microsoft III*

tured, cross-platform middleware products that other applications developers can use to develop programs that run on multiple operating systems" and thus ultimately compete with Windows.[373] Consequently, the stand-alone applications company could reduce or eliminate the applications barrier to entry in the operating system market, much as Netscape's Internet browser could have if Microsoft had not engaged in its anticompetitive conduct.[374]

A breakup of Microsoft, however, is not the best means of remedying its anticompetitive conduct. Structural relief in *Microsoft III* is not appropriate because the economic problems in the case arise not from Microsoft's possession of monopoly power, but from the manner in which it has abused that power. Microsoft did not gain its monopoly power as a result of acquisitions, government regulation, or other circumstances unrelated to its business performance. The company achieved its dominance from internal growth generated by consumers' preference for its products.[375] Indeed, Microsoft's monopoly power has produced many benefits for consumers.

Judge Jackson wisely rejected certain commentators' call to divide the operating system business into several parts. As a result of the dominance of Windows, Microsoft has been able to establish uniform standards that allow a multitude of applications to interchange with the operating system.[376] If Microsoft were forced to publish or auction its source code or to separate into several operating system companies, the network standardization effect could be destroyed. Such remedies ultimately could "lead to incompatible versions of the operating system and other software, which would be a nightmare for consumers and developers."[377] These radical remedies, which allow

(No. Civ.A.98-1232) [hereinafter Plaintiffs' Memorandum for Final Judgment], available in 2000 WL 53065.

373 Declaration of Paul Romer ¶ 20, *Microsoft III* (No. Civ.A.98-1232), available at <http://www.usdoj.gov/atr/cases/ms_remediespapers.htm>.

374 See Plaintiffs' Memorandum for Final Judgment at *5, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 53065; Steve Lohr, The Case for a Breakup, N.Y. Times, Apr. 30, 2000, § 1, at 1.

375 See Defendant Microsoft Corporation's Memorandum in Support of Its Motion for Summary Rejection of the Government's Breakup Proposal at *10, *Microsoft III* (No. Civ.A.98-1232) [hereinafter Microsoft Rejection of Breakup Proposal], available in 2000 WL 620183 ("Microsoft did not become the leading supplier of 'Intel-compatible PC operating systems' by acquiring or merging with its rivals. Instead, Microsoft built its current market position from scratch by developing a succession of operating systems, each one markedly better than its predecessors . . . .").

376 See *Microsoft III*, 84 F. Supp. 2d at 19 (findings of fact).

377 Richard A. Oppel, Jr., A Top Government Lawyer Puts a Breakup on the Table, N.Y. Times, Nov. 8, 1999, at A23; see also Bork, supra note 370, at A34 ("[A]s each of the [split] companies developed its own version of Windows, the result, absent industry standards, might be balkanization . . . ."); Paul Krugman, Dirty Windows Policy, N.Y. Times,

other companies to obtain the fruits of Microsoft's investments, also would reduce the incentive for Microsoft and other companies to assume the risks involved in developing new products.

Judge Jackson's decision to split Microsoft into separate applications and operating system companies has its own deficiencies. First, from a procedural standpoint, the reorganization goes "far beyond" the issues litigated at trial concerning Microsoft's conduct in the browser market.[378] Most importantly, the *Microsoft III* judgment does not remedy the misuse of Microsoft's monopoly power in the operating systems market. Indeed, the judgment leaves Microsoft's monopoly power unaffected. Under the *Microsoft III* judgment, restrictions on the reorganized companies' conduct lapse within three years after the effective date of the split-up.[379] After that period, the applications and operating systems companies will be free to continue the same type of conduct which allowed Microsoft to blunt Netscape's competitive threat. There would be no guarantee that Microsoft would refrain from attempting to perpetuate its monopoly power or extend it into adjacent markets by predatory means. Judge Jackson's reorganization also may have unintended consequences. An integrated Microsoft may have continued to undercharge for its operating system in order to encourage consumers to purchase its applications programs. The separated operating system company, however, would have "a strong incentive to charge monopoly prices for its innovations."[380] Indeed, one commentator recently pointed out that "[i]f . . . [the plaintiffs in *Microsoft III*] pull . . . [the reorganization] off, you would end up with an even . . . more durable monopoly."[381]

The final judgment in *Microsoft III* also inhibits Microsoft's ability to develop innovative products. Microsoft has pointed out that many of its software developments "would not have been possible but for Microsoft's . . . structure, which enables Microsoft to conceive and implement new ideas that span operating systems and applica-

Apr. 30, 2000, § 4 (Week in Review), at 19 (commenting that "such a breakup would make things worse, with two robber barons instead of one levying tolls on those who pass by").

378 See The View from the Outside: Assessing the Wisdom of a Breakup, N.Y. Times, Apr. 30, 2000, § 1, at 32 (comments of Prof. George L. Priest, Yale University).

379 See *Microsoft III*, 97 F. Supp. 2d at 66 (final judgment). The government believed that conduct remedies should be required only until the reorganized companies gain their footing in the marketplace. After that time, natural incentives would ensure that the companies engage in fair and effective competition. See Plaintiffs' Memorandum for Final Judgment at *21, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 530625.

380 Richard A. Epstein, The Price of a Judge's Hubris, Wall St. J., June 9, 2000, at A18.

381 The View from the Outside, supra note 378 (comments of Robert E. Litan, Brookings Institution) (pointing out that reorganized operating system company might refuse to develop software for competing operating systems and would retain ability to extend its monopoly into markets for servers and Internet devices).

tions."[382] For example, toolbars for the Windows desktop were first developed by a team working on Excel spreadsheet applications and were later incorporated into Windows.[383] This incorporation of new applications into Windows has benefited consumers,[384] and after the reorganization, it will be more difficult for the separate applications and operating system companies to achieve such synergies.[385] Furthermore, if the Internet applications business were split off from the operating system business, future applications might not be as compatible with Windows, and consumers might encounter more difficulties in running the operating system and applications in an integrated manner.[386]

Conduct remedies are the most appropriate means of remedying Microsoft's misuse of its monopoly power. Such remedies avoid the innovation-inhibiting effects of the *Microsoft III* judgment. Microsoft could continue to operate as an integrated company with the ability to achieve synergies between its operating system and applications technologies. The conduct remedies should be narrow enough to preserve Microsoft's incentive to develop new products to meet consumer demand. Although the conduct remedies should include a prohibition on the tying of independent applications to the operating system,[387] Microsoft should be permitted to integrate new applications into Win-

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382 Microsoft Rejection of Breakup Proposal at *3, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 620183.

383 See id. at *9.

384 For example, Tony Nicely, the Chairman of GEICO, has stated that "the inclusion of Internet support in Windows made it easier for us to operate our corporate intranet." Defendant Microsoft Corporation's Supplemental Offer of Proof at *9, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 708456.

385 Microsoft, for example, might not be able to execute its current plan to add features to its next generation of Windows to improve the operating system's interaction with the Internet. See Ted Birdis, Restrictions Sought by U.S. on Microsoft Could Threaten New Windows Program, Wall St. J., May 2, 2000, at A3.

386 See Defendant Microsoft Corporation's Supplemental Offer of Proof at *1, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 708456 ("[C]omplementary products created by unrelated companies do not work as well together . . . ."); id. at *5 ("If Microsoft were broken up[,] . . . Microsoft's operating systems, applications and other products over time would become less and less compatible . . . ."); id. ("[C]onsumers . . . prefer that the technology they utilize be as integrated as possible, thus maximizing interoperability and minimizing the number of vendors with which a company must deal.").

387 For example, an ostensible "integration" that required OEMs to pre-install Microsoft's "Word," a word processing program, along with Windows should be precluded by the courts because such an integration would not enhance the functions of the operating system in any manner. Some of Microsoft's critics contend that the company is currently bundling video software with Windows in order to extend its monopoly power into the video applications market. See John R. Wilke et al., Microsoft Judge Faces Demands of Market and of Monopoly Law, Wall St. J., Apr. 4, 2000, at A1. Others argue that Microsoft is integrating software for Internet servers into its operating system with the purpose of extending its domination into various Internet markets. See id.

dows that enhance the functioning of the operating system. The company also should be allowed to discontinue the marketing of previous versions of the operating system that do not include its latest integrated applications. The *Microsoft III* judgment's requirement that the company sell obsolete versions of its operating system without integrated middleware puts the company at risk of confusing its customers and alienating users that find the "stripped-down" versions of the operating system to be inferior.[388]

The appellate courts in *Microsoft III* could devise conduct remedies of appropriate scope if they viewed the company's conduct through the lens of the "essential facilities" approach proposed in this Article. Microsoft should not be punished for developing an operating system that has become essential to OEMs, applications programmers, and users of personal computers. The company, however, should be required to grant all competitors equal access to Windows. Instead of being required to split off its applications business, Microsoft should be precluded from giving its applications programmers any special access to Windows that is unavailable to Microsoft's competitors. Middleware then would have a reasonable opportunity to evolve into a competitive threat to Windows. In such an environment, Microsoft would have an incentive to assure the continuity of its monopoly power by developing innovative products attractive to consumers rather than in pursuing arrangements that exclude potential competitors from its markets.

An open access order would ensure, first, that Microsoft's competitors can utilize the Windows operating system on equal terms, and secondly, that they can use the distribution channels necessary for effective competition in the operating system and related markets. The courts should be able to guarantee open access to the operating system easily. Access to technical information concerning the Windows APIs is critical to applications programmers attempting to design their software to be compatible with Windows.[389] Middleware will never be able to evolve into a competitive threat to Windows unless its programmers are able to use such information. As Mark Ryland, a Microsoft manager, stated in an internal Microsoft e-mail, "to control

[388] Some commentators believe that certain software applications may not work as effectively with versions of Windows from which middleware has been removed. See, e.g., Birdis, supra note 385. Judge Jackson concluded, however, that Microsoft could remove the Internet Explorer browser program from Windows without affecting the functioning of the operating system. See *Microsoft III*, 84 F. Supp. 2d at 53-54 (findings of fact).

[389] Indeed, some commentators have described the Windows API interface itself as an essential facility. See, e.g., O'Rourke, supra note 231, at 547 ("By virtue of the operating system provider's monopoly power, its interface becomes an essential facility because access to it is necessary for others to compete.").

the APIs is to control the industry."[390] Thus, Microsoft should be required to disclose the specifications for its APIs to all software developers. It is possible for Microsoft to do so without disclosing the vital portions of its confidential source code.[391] In fact, the company currently makes information concerning its APIs available to applications programmers that design their software to be compatible with Windows.[392] The company should extend the same advantage to all software developers, including those developing cross-platform applications.[393]

Microsoft continually updates and adds new APIs to its operating system.[394] It is critical that applications programmers receive advance notice from Microsoft of the changes in its APIs, so that they can design their programs to be compatible with the latest version of Windows. Judge Jackson concluded that "[b]ecause of the importance of 'time-to-market' in the software industry, ... [programmers] developing software to run on Windows products seek to obtain beta releases and other technical information relating to Windows as early and as consistently as possible."[395] Any open access order, therefore, should require Microsoft to publish the specifications for its APIs sufficiently in advance of their implementation to allow applications programmers enough time to design new software to be compatible with new versions of Windows immediately upon their release.[396]

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390 Lohr, supra note 260, at C1.

391 The judgment in *Microsoft III* requires the company to disclose only "relevant and necessary portions of the source code" in order to ensure interoperability between Windows and independent software applications. *Microsoft III*, 97 F. Supp. 2d at 67 (final judgment). "[B]y ensuring protection of the source code itself, the provisions go no further than is necessary to promote interoperability." Declaration of Edward W. Felten ¶ 70, *Microsoft III* (No. Civ.A.98-1232), available at <http://www.usdoj.gov/atr/cases/ms_remediespapers.htm>. Bill Gates recently stated, however, that the final judgment in *Microsoft III* means "that the government can take away what you created if it turns out to be too popular." Hamilton, supra note 227, at B6.

392 See *Microsoft III*, 84 F. Supp. 2d at 21-22 (findings of fact). Since Microsoft has well-established procedures for the release of API information to certain software developers, "mandatory disclosure of API's should not impose any significant burden on Microsoft." Declaration of Carl Shapiro § IV(B)(3), *Microsoft III* (No. Civ.A.98-1232), available at <http://www.usdoj.gov/atr/cases/ms_remediespapers.htm>.

393 Microsoft, in fact, offered to do so in *Microsoft III*. See Microsoft Corporation's Proposed Final Judgment at *3, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 572716 (requiring Microsoft to provide "timely and complete access to such Technical Information as is provided through any software development program that Microsoft makes available to the software development community at large").

394 See *Microsoft III*, 84 F. Supp. 2d at 24 (findings of fact).

395 Id. at 93.

396 Judge Jackson concluded that Microsoft was able to exclude Netscape from "most of the holiday selling season" by delaying the release of API information when Windows 95 was released in August 1995. *Microsoft III*, 84 F. Supp. 2d at 33 (findings of fact).

An open access remedy also should prohibit Microsoft from intentionally designing Windows in a manner that makes the system incompatible with competitors' software. Microsoft's APIs should be designed to allow competing applications to function just as effectively with Windows as Microsoft's own applications.[397] Under an open access order, Microsoft would have to ensure Windows's compatibility with software such as Java that poses a threat to its operating system monopoly. Windows is currently designed so that a modified form of Java without cross-platform capabilities runs more effectively than the original version developed by Sun.[398] In order to ensure an open market for middleware such as Java, Microsoft should be required to release Windows in a version that permits the cross-platform version of Java to run just as efficiently as the Windows-only version.

The conduct remedies in *Microsoft III* should ensure that Microsoft's competitors have equal access to the critical OEM and IAP distribution channels for operating systems. In order to ensure free use of the IAP channel, Microsoft should be precluded from taking any actions to force IAPs to bundle their proprietary software with Microsoft's browser. Although OEMs would not be able to obtain a version of Windows from Microsoft without the browser, they should be permitted to preinstall any other browsers that they choose.[399] OEMs also should be allowed to hide or delete Microsoft icons on the Windows desktop or to make those icons less prominent than the icons for the browser that the OEMs choose to promote.[400]

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397 This requirement should assuage the government's concern that Microsoft is planning to tighten its hold on the Internet by designing Windows so that it will work well only with its own "server" network software. See John R. Wilke & Ted Birdis, Enforcers Requested Microsoft Breakup as Best Solution to Thwart Monopoly, Wall St. J., May 1, 2000, at A3. The conduct remedies proposed in this Article would require Microsoft to ensure that competing servers could work effectively in connection with Windows.

398 See *Microsoft III*, 84 F. Supp. 2d at 105 (findings of fact).

399 Microsoft's license agreements currently do not prohibit OEMs from such pre-installation, see id. at 63, and Microsoft proposed in *Microsoft III* that it be enjoined from refusing to grant a Windows license to any OEM that ships or promotes non-Microsoft software, see Microsoft Corporation's Proposed Final Judgment at *2, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 572716. Microsoft should, however, be allowed to preclude OEMs from deleting any imbedded software code for an integrated Microsoft browser if such deletion would adversely affect the functioning of the operating system.

400 See *Microsoft III*, 84 F. Supp. 2d at 58-59 (findings of fact) (stating that:

> [A]n OEM with sufficient technical expertise (which all the larger OEMs certainly possess) could offer its customers a choice of browsers while still minimizing user confusion if the OEM were left free to configure its systems to present this choice the first time a user turned on a new PC system. If the user chose Navigator, the system would automatically remove the most prominent means of accessing Internet Explorer from Windows (without actually uninstalling, i.e., removing all means of accessing, Internet Explorer) before the desktop screen appeared for the first time.).

Microsoft's foreclosure of critical distribution channels could be remedied by an injunction prohibiting the company from either punishing or rewarding customers in order to induce them not to deal with competitors. Under such an order, Microsoft no longer would be able to grant price concessions or favorable placement on the desktop screen to OEMs or IAPs that agreed not to promote competitors' products. Also, it no longer could threaten to foreclose access to Windows to customers that refused to comply with its anticompetitive objectives. In order to ensure that all customers are treated equally regardless of their marketing arrangements, Microsoft could be required to publish its standard prices and terms for its Windows licenses and to follow them consistently for all customers.[401]

Such conduct-based remedies would preserve Microsoft's incentive to innovate while assuring a level playing field for its actual and potential competitors. With such protections in place, the courts could be assured that Microsoft's monopoly in operating systems will be subject to erosion by the natural workings of the marketplace. Therefore, no structural remedies should be required to ensure competition in the markets for operating systems and their related applications.

CONCLUSION

In more than one hundred years of Section 2 litigation, the federal courts have been unable to develop a consistent method for identifying illegal monopolistic conduct. The courts' failure stems from their inability to reconcile monopolies' beneficial and harmful aspects.

The *Microsoft III* judgment prohibits the company from restricting OEMs from modifying the desktop screen in such ways. See *Microsoft III*, 97 F. Supp. 2d at 66-67 (final judgment). In *Microsoft III*, Microsoft proposed that it be enjoined from preventing OEMs from displaying desktop icons for non-Microsoft products, from deleting the Internet Explorer icon, or from configuring non-Microsoft Internet browsers as a default browser. See Microsoft Corporation's Proposed Final Judgment at *3, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 572716.

401 Some commentators have referred to such terms as "a clean Windows license." See Steve Lohr, Experts Say Microsoft Has Some Points for Appeal, N.Y. Times, Nov. 12, 1999, at A1. Robert E. Hall, an economist at Stanford University, has opined that "'so many of Microsoft's transgressions and so much of its ability to abuse its market power goes away with a clean Windows license.'" Id. at A1. The *Microsoft III* judgment requires the company to publish and adhere to uniform license terms for the Windows operating system. See *Microsoft III*, 97 F. Supp. 2d at 66 (final judgment). Microsoft's own proposed final judgment in *Microsoft III* enjoins the company from (1) conditioning the release of technical information on any software vendor's agreement not to write applications for a competitor's software, or (2) entering into any contract to promote another party's software on the Windows desktop in return for that party's agreement to limit its distribution of competing software. See Microsoft Corporation's Proposed Final Judgment at *3-*4, *Microsoft III* (No. Civ.A.98-1232), available in 2000 WL 572716.

On one hand, monopolists can harm consumers by raising prices and decreasing output. On the other hand, many firms have achieved monopoly power because they have delivered products to consumers more efficiently than their competitors. The new approach to Section 2 proposed in this Article will give the federal courts an effective means of distinguishing between monopolists' efficient and anticompetitive conduct. Under the proposed approach, the courts would consider whether a defendant's conduct makes sense other than as a means of perpetuating or extending monopoly power. The courts then could concentrate their efforts in the areas of their greatest competence. Federal courts and juries are much more capable of determining defendants' motives for particular conduct than in divining the economic effects of their actions. They will be aided in making that determination by the presumptions and burdens of proof proposed in this Article. Such an approach will simplify Section 2 cases and give monopolists better notice of the types of conduct that will be tolerated or precluded. As a result, the federal courts finally will be able to meet the objectives of Section 2 of the Sherman Act: to encourage dominant firms to pursue conduct which lowers prices, fosters innovation, and promotes economic efficiency, and to avoid conduct that artificially extends or perpetuates monopoly power.