The FTC and the Law of Monopolization

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Although Microsoft has attracted much more attention, recent developments at the FTC may have a greater impact on the law of monopolization. From recent pronouncements, the agency appears to believe that in monopolization cases government proof of anticompetitive effect is unnecessary. In one case, the Commission staff argued that defendants should not even be permitted to argue that its conduct lacks an anticompetitive impact. This article argues that the FTC's position is wrong on the law, on policy, and on the facts. Courts have traditionally required full analysis, including consideration of whether the practice in fact has an anticompetitive impact. Even with such analysis, the courts have condemned practices that in retrospect appear not to have been anticompetitive. Given our ignorance about the sources of a firm's success, monopolization cases must necessarily be wide-ranging in their search for whether the conduct at issue in fact created, enhanced, or preserved monopoly power, whether efficiency justifications explain such behavior, and all other relevant issues.

THE FTC AND THE LAW OF MONOPOLIZATION

Timothy J. Muris*

I. INTRODUCTION

Most government antitrust cases involve collaborative activity. Collaboration between competitors, whether aimed at stifling some aspect of rivalry, such as fixing prices, or ending competition entirely via merger, is the lifeblood of antitrust. Some cases involve allegations that one firm's conduct by itself harms consumers. Although only a small percentage of filed actions, these tend to be well-known, such as the *IBM* case filed at the end of Lyndon Johnson's Administration and the current Department of Justice case against Microsoft.[1]

The government's emphasis on attacking collaboration is sound. The antitrust laws are based on the fundamental premise that competition is the best way to organize an economy. To provide the benefits of the market system, firms should compete, not collude. When firms deviate from the rivalry of the marketplace to declare peace, antitrust law rightly is concerned. It is true that the market sometimes produces industries in which one firm dominates. When the victor has emerged through vigorous rivalry, as opposed to collaborative activity such as merging with its competitors, antitrust law normally refrains from turning upon the winner.

In rare circumstances, firms succeed, or protect a previously obtained success, not through competition on the merits, but through conduct that harms consumers. Such conduct forms the basis for cases alleging monopolization or attempted monopolization. Recently, the *Microsoft* case has attracted the most attention, as the trial involves a far-ranging

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[1] *See* United States v. IBM, No. 69 Civ. 200 (S.D.N.Y. filed Jan. 17, 1969); United States v. Microsoft, 1998-2 Trade Cas. (CCH) ¶ 72,261 (D.D.C. 1998). A few cases also scrutinize contractual relations between firms and their customers or suppliers. Although much less prominent in the 1980s and 1990s than in previous decades, such cases can involve practices that harm consumers.

inquiry into whether Microsoft's practices in fact have harmed consumers. Given the importance of the defendant and the industry in which it competes, this case will have a significant impact on our economy. Recent, but less well-known Federal Trade Commission cases, however, may have an even more profound impact upon monopolization law because the FTC proposes to alter what many believe to be the basis for liability. FTC officials have pronounced their view regarding monopolization in court papers, speeches, and articles.[2] The agency appears to believe that in monopolization cases government proof of anticompetitive effect is unnecessary.[3] In one case, the Commision staff argued that the defendant should not even be permitted to argue that its conduct lacks an anticompetitive impact.[4]

In this article, I intend to demonstrate that the FTC's position on this issue is wrong: wrong on the law, wrong on policy, and wrong on the facts. Although hardly a model of clarity, the law of monopolization does not support the FTC's view. Courts require a causal link between the conduct under scrutiny and the existence, extension, or protection of monopoly power before a violation of Section 2 can be established. The FTC's rule would simply assume such a causal link exists.

Recent Supreme Court pronouncements have confirmed that no matter how bad a firm's conduct is, or how injurious to rivals, there can be no Section 2 violation without injury to competition. On policy grounds, the Supreme Court has shortened, or truncated, certain antitrust proceedings, particularly in Section 1 cases. The reason given for this short-

[2] *See* Summit Tech., Inc., FTC Docket No. 9286 (filed Mar. 24, 1998) (*VISX*); Federal Trade Commission, *Background Concerning FTC's Action Against Intel* (June 8, 1998), *reprinted in* FTC: WATCH, June 29, 1998, at 3 [hereinafter *FTC Backgrounder*]; Robert Pitofsky, Chairman, Federal Trade Commission, Remarks Before The Federalist Society, 1998 National Lawyers Convention (Nov. 14, 1998) (unedited transcript at 201–03, on file with author); Jonathan B. Baker, *Promoting Innovation Competition Through the* Aspen/Kodak *Rule,* 7 GEO. MASON L. REV. 495 (1999); *see also infra* note 17.

[3] Although the full Commission has not adjudicated the issue, a majority of the current Commissioners appears to endorse the new position. First, the FTC recently voted to issue the two monopolization complaints that raise the issue of the appropriate legal standard, as well as to accept a consent agreement in one of them. *See VISX*; Intel Corp., FTC Docket No. 9288 (June 8, 1998). (The author consulted with Intel regarding the issues in this case.) Moreover, Chairman Pitofsky, whose views command majority support, generally endorsed the non-anticompetitive effect rule, without discussing ongoing FTC litigation, in unpublished remarks on November 14, 1998 in Washington, D.C., before The Federalist Society. *See supra* note 2. Accordingly, I refer to the rule as that of the FTC, not just the staff. At a minimum, the rule appears to represent the opinion of the FTC leadership.

[4] *See VISX,* Complaint Counsel's Memorandum in Support of Petitions of Third-Party Laser Manufacturers to Quash Respondent VISX's Subpoenas Duces Tecum (Sept. 10, 1998) [hereinafter Complaint Counsel's Memorandum in *VISX*].

ening—that the practices involved by their very nature are likely always, or almost always, to be anticompetitive—does not apply in the Section 2 context.

Further, the actual facts of the Court's Section 2 cases should give pause to anyone desiring to short-circuit analysis of alleged monopolistic practices. Even with full analysis, the Court has condemned practices that in retrospect appear not to have been anticompetitive. Both the history of Supreme Court cases, as well as an analysis of the weak empirical foundation of much of modern economic theory, suggest that so-called exclusionary conduct can be condemned as monopolistic only after a full analysis, including consideration of whether the practice in fact has an anticompetitive impact.

II. THE FTC IS WRONG ON THE LAW

Probably the most widely quoted definition of monopolization is the Supreme Court's statement in *Grinnell*:

> The offense of monopoly . . . has two elements: (1) the possession of monopoly power in the relevant market and (2) the willful acquisition or maintenance of that power as distinguished from growth or development as a consequence of a superior product, business acumen, or historic accident.[5]

As commentators have noted,[6] courts do not in fact find monopolization merely because a defendant acquired a monopoly "willfully." After all, any firm that succeeds in the marketplace because of the superiority of its products or services has, presumably, acquired its prominence "willfully." Presumably, such a firm, likewise, "willfully" maintains its market position through its day-to-day operations and "willfully" works to ensure that competitors do not gain greater market share. Instead of focusing on willfulness, or the closely corresponding concept of intent, in monopolization cases courts focus on conduct. Not just any conduct will be condemned; to acquire the monopoly in the first place the firm presumably did something, either good or bad. The firm could have built the proverbial "better mousetrap." Yet, only "bad" conduct, often called "exclusionary," is illegal. Much of the monopolization case law struggles with the question of when conduct is, or is not, exclusionary.

To justify its conclusion that under these general principles proof of anticompetitive effects is unnecessary, the FTC relies on a variety of

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[5] United States v. Grinnell Corp., 384 U.S. 563, 570–71 (1966).

[6] *See, e.g.*, 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 651c, at 78 (rev. ed. 1996).

sources. In the *VISX* case, FTC complaint counsel argued in a discovery motion that, "It is hornbook law that monopolization and attempted monopolization . . . do not require proof of 'anticompetitive effect.' "[7] Complaint counsel cited Supreme Court opinions in *American Tobacco* and *Lorain Journal* as support for their view.[8] A paper that the FTC released at the time of the *Intel* complaint[9] relied heavily on the Supreme Court's recent *Aspen Skiing* and *Kodak* decisions, as does an article by then-Director of the FTC's Bureau of Economics, Jonathan Baker. As Baker argues, under these cases a firm with monopoly power violates Section 2 if it excludes rivals from the market by "restricting a complementary or collaborative relationship without an adequate business justification."[10]

Three points are relevant regarding the state of the law. First, the anticompetitive—that is, exclusionary—conduct must be linked to the monopoly. The leading treatise defines exclusionary behavior as "conduct other than competition on the merits, or other than restraints reasonably 'necessary' to competition on the merits, that reasonably appear[s] capable of making a significant contribution to creating or maintaining monopoly power."[11] Monopoly power is a concept that requires analysis of competitive effect. In both law and economics, such power is defined as the ability to raise price and restrict output in an industry.[12] It is true that when lacking direct evidence of market power, courts have indirectly inferred its existence by focusing on market share and entry conditions, including the inability of existing competitors to expand output.[13] Such indirect evidence, however, is merely a proxy for

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[7] Complaint Counsel's Memorandum in *VISX*, *supra* note 4, at 2.

[8] *See id.* at 3 (citing American Tobacco Co. v. United States, 328 U.S. 781, 810 (1946), and Lorain Journal Co. v. United States, 342 U.S. 143, 153 (1951)). Only in a later pleading did FTC staff point to specific "hornbook law" that it interpreted as supporting the claim that proof of anticompetitive effect is not a required element of monopolization claims. *See* Complaint Counsel's Reply Memorandum in Support of Petitions of Third Party Laser Manufacturers to Quash Respondent VISX's Subpoenas Duces Tecum at 7–8 (Sept. 21, 1998) (citing 3 AREEDA & HOVENKAMP, *supra* note 6, ¶¶ 706f, 653b and 651).

[9] *See FTC Backgrounder*, *supra* note 2.

[10] *See* Baker, *supra* note 2, at 503.

[11] 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 651c, at 78.

[12] *See* Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 464 (1992); NCAA v. Board of Regents, 468 U.S. 85, 109 n.38 (1984); United States v. E.I. du Pont de Nemours & Co., 351 U.S. 377, 389 (1956). *See also* DENNIS W. CARLTON & JEFFREY M. PERLOFF, MODERN INDUSTRIAL ORGANIZATION 137 (2d ed. 1994).

[13] *See, e.g.,* Rebel Oil Co. v. Atlantic Richfield Co., 51 F.3d 1421, 1441 (9th Cir. 1995); Reazin v. Blue Cross & Blue Shield, 899 F.2d 951, 967–68 (10th Cir. 1990); A.A. Poultry Farms v. Rose Acre Farms, 881 F.2d 1396, 1403 (7th Cir. 1989).

actual proof of anticompetitive effects—namely, the ability to raise price and restrict output. It necessarily follows that showing a link between the exclusionary conduct and the monopoly requires a determination of the impact of the conduct on competition. In short, anticompetitive effect must be assessed if the conduct is to be found to have the necessary connection to the monopoly.

Of course, to suggest it is enough that the conduct "reasonably appears capable of making a significant contribution" leaves open the question of how significant the contribution must be. Indeed, the authors of that statement—Professors Areeda and Hovenkamp—themselves note that there is much uncertainty on this issue.[14] They conclude that government intervention should not be conditioned "solely on a clear and genuine chain of causation from exclusionary act to the presence of monopoly."[15] Rather, they argue, courts should intervene only when they are confident that the cause before them is one that makes a significant contribution to the creation, maintenance, or enhancement of monopoly power. Requiring such a justification for court intervention in monopolization cases is consistent with the Areeda and Hovenkamp view that "monopoly will almost certainly be grounded, in part, in factors other than a particular exclusionary act."[16] It hardly follows, however, that the FTC is correct that proof of causation can either be dispensed with entirely or simply assumed from the presence of particular conduct.[17] The particular exclu-

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[14] 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 650c, at 69.

[15] *Id.* ¶ 651c, at 77.

[16] *Id.*

[17] Both Chairman Pitofsky, in his Federalist Society remarks, *supra* note 2, and the former Director of the Bureau of Competition, William Baer, in a speech on November 12, 1998, quote "the clear and genuine" passage as well as the "significant contribution" language quoted in the text accompanying note 11 above. William J. Baer, Antitrust Enforcement and High Technology Markets, Speech Before ABA Sections of Business Law, Litigation, and Tort and Insurance Practice (Nov. 12, 1998) <http://www.ftc.gov/speeches/other/ipat6.htm>. In responding to Commissioner Swindle's refusal to accept the *Intel* consent agreement because of lack of anticompetitive impact, the Commission majority also cited this passage. Statement of Chairman Pitofsky and Commissioners Anthony and Thompson, Intel Corp., FTC Docket No. 9288 (Aug. 6, 1999). In practice, however, the agency does not require a searching inquiry into whether the acts in question explicitly have made the necessary "significant contribution" to monopoly to support finding liability under § 2. Thus, in *VISX*, complaint counsel opposed the defendant's efforts to demonstrate the lack of casual connection between the challenged practices and the preservation of monopoly. *See supra* notes 7–8 and *infra* notes 93–96 and accompanying text. In *Intel*, discussed below at text accompanying notes 97–103, the complaint alleged that "the natural and probable effect" of Intel's actions was to retard innovation. *See* Intel Corp., FTC Docket No. 9288, Complaint ¶¶ 14, 39 (June 8, 1998). If the effect is "natural and probable," then it need not be further demonstrated. Moreover, the complaint counsel's pretrial brief appeared willing to infer anticompetitive effect from harm to competitors. *See, e.g.*,

sionary act in question itself must make the requisite "significant contribution" to the monopoly.

Second, although somewhat ambiguous, the case law cannot be read to endorse the FTC's position. Four Supreme Court cases provide the primary support for the view that anticompetitive effects are not part of a monopolization case. Taking those cases in chronological order, the first is *American Tobacco.*[18] Although the Court did state that "actual exclusion" is not essential under Section 2,[19] the case fails to support the proposition that there is no need to show anticompetitive effects at all. By "actual exclusion," the *American Tobacco* Court meant the words literally —i.e., anticompetitive effects short of the actual elimination of rivals, such as diminished competition from existing rivals or deterrence of entry, can nonetheless support a Section 2 monopolization claim.[20]

Lorain Journal,[21] decided five years after *American Tobacco*, provides even less support for the FTC's position. Although complaint counsel in *VISX* accurately quotes the opinion, which states that it is "not necessary to show that success rewarded appellants' attempt to monopolize," the *Lorain Journal* Court used "success" to mean the elimination, not just the hindrance, of the competitor.[22] The opinion explicitly notes that the challenged conduct was "effective" in limiting competition.[23] Given proof of anticompetitive effects, the Court found a dangerous probability that

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Complaint Counsel's Pretrial Brief (Feb. 25, 1999), at 7 (discussing how injury to competition is presumed to follow from certain conduct); *id.* (quoting Walker v. U-Haul Co. of Miss., 747 F.2d 1011, 1013 (5th Cir. 1984) (§ 2 "does not explicitly require a plaintiff to prove an injury to competition"); *id.* at 46 (Intel's "exclusion of these competitors therefore manifests an anticompetitive effect"). In his remarks at the Antitrust Section's 1999 Spring Meeting, Chairman Pitofsky offered yet another interpretation of the governing rule for § 2: "A monopolist cannot coerce or induce customers or competitors to bend to its will by using its monopoly power, if it is reasonably likely that [the] course of conduct will injure competition and the monopolist does not have a good business reason for its conduct." *Roundtable Conference with Enforcement Officials*, 67 ANTITRUST L.J. 453, 457 (1999). Although stated as a rule requiring competitive impact, the issue is, again, what the Commission requires in practice. Moreover, I agree with Ronald Davis that this "formulation employs language that seems to mix economics with ethics." Ronald W. Davis, *The FTC* Intel *Case: What Are the Limitations on "Throwing Your Weight Around" Using Intellectual Property Rights?*, ANTITRUST, Summer 1999, at 47, 51.

[18] American Tobacco Co. v. United States, 328 U.S. 781 (1946).

[19] *Id.* at 809.

[20] The leading treatise correctly notes that actual exclusion as defined in the case was "thus . . . held unnecessary." 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 612, at 29.

[21] Lorain Journal Co. v. United States, 342 U.S. 143 (1951).

[22] *Id.* at 153.

[23] *Id.*

a monopoly could result. Thus, the Court concluded that the Sherman Act "directs itself against that dangerous probability as well as against the completed result."[24]

The third case, *Aspen Skiing*,[25] discussed in more detail in Part IV *infra*, does focus on the monopolist's lack of an efficiency justification for its *conceded* exclusionary conduct. Nevertheless, the Court noted that in Section 2 cases it is "appropriate to examine the effect of the challenged pattern of conduct on consumers."[26] The appellant did not argue the role of anticompetitive effect in monopolization cases, and the Court did not claim to be deciding that issue. Similarly, in the fourth case, *Kodak*,[27] the issue of actual anticompetitive effects was not before the Court. Because the defendant in *Kodak* sought summary judgment, it did not argue the heavily fact-bound question of competitive impact. *Kodak* does present complex issues, which are discussed in detail in Part IV *infra*. It cannot be read, however, to provide support on an issue not before the Court.

Two 1993 Supreme Court decisions not cited in *VISX* cast considerable doubt on the FTC's position. In *Spectrum Sports*[28] the Court rejected the assertion that attempted monopolization may be proven merely by demonstration of unfair or predatory conduct.[29] Instead, conduct of a single firm could be held to be unlawful attempted monopolization only when it actually monopolized or dangerously threatened to do so.[30] Thus, the Court rejected the conclusion that injury to competition could be presumed to follow from certain conduct. The causal link *must* be demonstrated. In the second case, *Brooke Group*,[31] the Court reiterated the insufficiency of focusing merely on conduct, stating that "[e]ven an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws; those laws do not create a federal law of unfair competition."[32]

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[24] *Id.* (quoting Swift Co. v. United States, 196 U.S. 375, 396 (1905)).

[25] Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985).

[26] *Id.* at 605.

[27] Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451 (1992).

[28] Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447 (1993).

[29] *See id.* at 459.

[30] *See id.* at 458.

[31] Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209 (1993).

[32] *Id.* at 225. For recent circuit court discussions of this principle, see Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1182 (1st Cir. 1994); Wigod v. Chicago Mercantile Exch., 981 F.2d 1510, 1520 (7th Cir. 1992); Town of Concord v. Boston Edison Co., 915 F.2d 17, 21 (1st Cir. 1990). The *FTC Backgrounder* cites Otter Tail Power Co. v.

The Supreme Court's recent decision in *NYNEX v. Discon*[33] discusses important principles inconsistent with the FTC's position. The plaintiff sold obsolete telephone equipment removal services. It alleged that the defendants, including local telephone monopolists, conspired to change their practice of purchasing the plaintiff's services as part of a conspiracy to raise prices to telephone customers by defrauding government regulators. The Court concluded that the plaintiff had not stated a per se claim under Section 1 even though the plaintiffs and defendants had a prior relationship, defendants changed their conduct without a procompetitive reason, and defendants had a special motivation to drive the plaintiffs out of business.[34] The Court refused to transform cases of improper business behavior into antitrust cases, citing the *Brooke Group* passage quoted above.[35] The Court noted that the Section 2 claim was based on the same purchasing practices as the Section 1 claim, and concluded that "[u]nless those agreements harmed the competitive process, they did not amount to a conspiracy to monopolize."[36] Thus, the Court again refused to allow plaintiffs to proceed without proof of injury to competition.

This is not a claim that the Supreme Court's precedents always speak with clarity, or even with complete consistency. The logic of the Court's monopolization decisions, however, weighs heavily against the FTC's argument. If we are to eliminate the need to prove a causal link between

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United States, 410 U.S. 366 (1973), as additional support for its rule. *FTC Backgrounder, supra* note 2, at 7. In *Otter Tail* the defendant was a monopolist of electric transmission lines, as well as a generator of power which, under franchise arrangements with municipalities, distributed the electricity to consumers. When some municipalities chose to operate their own distribution facilities, Otter Tail refused to supply power. The Court ruled against the defendant in an opinion that the Areeda and Hovenkamp treatise calls not "adequately elaborated." 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 787c1, at 287. The *FTC Backgrounder* paper states that the municipalities that were the injured party only sought to replace the defendant's monopoly with monopolies of their own, implying that there was no injury to competition. Injury may have existed, however, in that the defendant may have been effectively regulated as a wholesaler, but not as a retailer. If so, then vertical integration would have allowed it to charge the monopoly price that wholesale regulation denied it. *See id.* at 288. Of course, each municipality's distribution system is itself a natural monopoly, but Areeda and Hovenkamp note, "presumably the municipality would operate its system in the interests of its citizens." *Id.* Moreover, the potential of the municipalities to operate their own systems would allow them to negotiate lower rates from the defendant. *See* Harold Demsetz, *Why Regulate Utilities?*, 11 J.L. & ECON. 55 (1968).

[33] NYNEX Corp. v. Discon, Inc., 119 S. Ct. 493 (1998).

[34] *See id.* at 498–99.

[35] *See id.* at 499.

[36] *Id.* at 500. One might ask whether the FTC should have to prove less than a private plaintiff. Of course, the government need not show injury to specific firms to obtain

conduct and anticompetitive effect, then we should require a more definitive pronouncement from the Court.

The third relevant legal point concerns a more subtle version of the FTC's argument. It is possible that what the FTC really means to suggest is that anticompetitive effect can be inferred from the existence of certain conduct. The issue here involves whether the competitive analysis can be truncated, an issue that has received considerable attention in the Section 1 literature,[37] but has received much less consideration, either in case law or commentary, under Section 2. The courts, particularly the Supreme Court, have not definitively addressed this issue.

III. THE FTC IS WRONG ON POLICY

Antitrust law, through application of the rule of reason under Section 1, has long struggled with issues of shortening the antitrust trial. Certain practices are illegal per se; once such a practice is proven, a defendant cannot escape liability by showing that its conduct had no anticompetitive effect. When the plaintiff proves per se unlawful conduct—for example, naked price fixing—the practice is illegal without a need to define a market, prove market power, or prove that the practice in fact had anticompetitive effects.

The evolution of the rule of reason, with its per se subcategory, is an example of the legal system trying to devise appropriate rules. As legal and economic scholars have shown, the most efficient rules minimize the sum of the cost of making mistakes and the litigation costs of the parties and the courts.[38] Litigation costs include all counseling, investigation, and court expenses. The costs of mistakes are twofold: either false positives (cases in which the law wrongly condemns an efficient business practice) or false negatives (cases in which conduct that harms consumers is exonerated).[39] Truncated analysis, such as the per se rule against naked price fixing, makes the most sense when the cost of proving actual consumer harm is high in individual cases and harm is strongly correlated with readily observable behavior. Given the high correlation, condition-

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standing. The government, however, must show overall harm to the market, just as private plaintiffs must show that any injury to competitors also harms competition.

[37] I previously have discussed the § 1 issue at length, most recently in *The Federal Trade Commission and the Rule of Reason: In Defense of* Massachusetts Board, 66 ANTITRUST L.J. 773 (1998).

[38] *See* Richard A. Posner, *An Economic Approach to Legal Procedure and Judicial Administration,* 2 J. LEGAL STUD. 99 (1973); Issac Ehrlich & Richard A. Posner, *An Economic Analysis of Rule Making,* 3 J. LEGAL STUD. 257 (1974).

[39] *See* Muris, *supra* note 37, at 776 n.8 and accompanying text.

ing liability on the behavior minimizes enforcement costs, including those of compliance, without causing large efficiency losses from false positives.[40]

What is the FTC truncating in the monopolization context? Unlike per se categorization, in which defining the market and proving market power are unnecessary issues, the FTC does not dispute the need to show that the defendant is a monopolist. Thus, the market must be defined and substantial market power must be demonstrated. Instead, the agency seeks to truncate the need to show a sufficient causal connection between the existence of certain conduct and the creation, enhancement, or preservation of monopoly. Merely by demonstrating the existence of the conduct, the causal connection will be inferred under the FTC's position.[41]

The primary justification for such truncation would be that the conduct itself is highly correlated with anticompetitive effect.[42] If so, then false positives are unlikely. Proponents of truncation argue that such a conclusion is warranted, particularly based on modern economic theory.[43] But the proponents ignore the crucial role of experience in antitrust law.

[40] Even with price fixing, the per se rule has some complications. In its modern formulation, the rule condemns not all price fixing, but only "naked" price fixing. Thus, the defendant can argue that its practice has a valid efficiency justification. As I have argued elsewhere, to escape per se condemnation, the defendant must show that the purported efficiency is more than just plausible, but it need not quantify the amount of efficiency. *See id.* at 778–79. Because the conduct is not literally per se illegal, some call analysis of efficiency a "quick look" application of the rule of reason. *See generally* California Dental Ass'n v. FTC, 119 S. Ct. 1604 (1999).

[41] Moreover in *VISX*, the complaint counsel sought to prohibit the defendant from presenting evidence that no anticompetitive effect (i.e., causal connection) should in fact be found. *See supra* notes 7–8. A rule that truncated the finding of the requisite causal connection, but allowed the defendant to rebut the inference, would itself have a significant impact on § 2 litigation. Such a rule would effectively shift the burden of persuasion on the causal connection issue to the defendant.

[42] If the existence of an efficiency justification were easier to demonstrate than anticompetitive effect, this would favor truncation. Although one can envision cases in which this is the case, there is no reason why it will be always, or even usually, true. As the cases discussed in Part IV reveal, proof of justification may sometimes be difficult, while proof of anticompetitive effect may sometimes be relatively easy. *Intel* reveals the apparent difficulty of the justification issue. As discussed *infra* notes 57 and 102, Intel's justifications seem clear, at least regarding intellectual property (also raised by *Kodak* on remand) and the fact that some competitors it allegedly excluded sued Intel. Nevertheless, the FTC rejected these justifications, in part, because it believed they did not explain Intel's motive. *See* Complaint Counsel's Pretrial Brief (Feb. 25, 1999), at 46–49. To say the least, determining motive is rarely simple. Regarding proof of anticompetitive effect, the facts of *Aspen Skiing*, *Alcoa*, and *United Shoe*, discussed in Part IV *infra*, reveal that such effect was very unlikely in those cases. In any event, as the rest of the paragraph accompanying this note indicates, we do not know, a priori, whether the conduct at issue is usually anticompetitive.

[43] *See* Baker, *supra* note 2.

As numerous cases have discussed, only after considerable judicial experience with a category of practices, such as naked price fixing and market division, will a decision be reached regarding whether such conduct is indeed presumptively anticompetitive by its very nature.[44] As I discuss in the next Part, we do not have sufficient experience with the kinds of conduct at issue to warrant this conclusion. Indeed, the experience we do have with monopolization cases counsels against truncated analysis.

IV. THE FTC IS WRONG ON THE FACTS

The Commission appears especially concerned about monopolists that harm rivals by restricting or ending a pre-existing complementary or collaborative relationship.[45] Here, the FTC would apply its proposed position on monopolization, allowing the defendant to escape liability primarily by showing an adequate business justification. Moreover, the Commission seems particularly concerned about conduct in high-tech industries, in which so-called "network effects" may allow one firm to dominate in a manner that allegedly harms consumers.[46]

There are at least three factual problems with the FTC's analysis. First, so-called relational contracts, in which the parties have long-standing relationships indicating some reliance upon each other, have been widely studied in recent years. Such relationships change frequently, and it is not at all obvious, particularly to a third party, such as the trier of fact in an antitrust case, why a change may have happened and whether one party is "unfairly" harming another. In any event, it can be especially difficult to know if any anticompetitive impact has occurred. A second problem relates to the history of monopolization cases. Our judicial experience in monopolization should give us great pause. Courts have too often categorized practices as exclusionary, and therefore anticompetitive, when later economic analysis casts considerable doubt upon the conclusion, as discussed below in Part IV.B. Finally, although economists have recently theorized that there are special problems in industries with substantial network effects, as discussed in Part IV.D, the facts indicate that such effects have not allowed firms producing an inferior product to dominate industries. In other words, the implications of the network effects models that are of most concern to antitrust are absent in the real world.

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[44] *See, e.g.*, FTC v. Superior Ct. Trial Lawyers Ass'n, 493 U.S. 411, 432–33 (1990); FTC v. Indiana Fed'n of Dentists, 476 U.S. 447, 458–59 (1986); Broadcast Music, Inc. v. CBS, 441 U.S. 1, 9–10 (1979).

[45] *See* Intel Corp., FTC Docket No. 9288 (filed June 8, 1998); *see also* Baker, *supra* note 2.

[46] *See, e.g.*, David Balto & Robert Pitofsky, *Antitrust and High-Tech Industries: The New Challenge*, 43 ANTITRUST BULL. 583 (1998); Baker, *supra* note 2, at 516.

A. RELATIONAL CONTRACTS AND OPPORTUNISTIC BEHAVIOR

Complex contractual settings are pervasive in our economy.[47] As Holmström and Roberts recently detailed,[48] such contractual relationships are common in high tech industries, such as computers and biotechnology, as well as in more traditional ones, such as automobiles and steel. In biotechnology, for example, the authors note that the activities of the different industry members are highly interrelated, with most firms engaged in many partnerships. They note that, in 1996, one firm reported 10 marketing partnerships, 20 licensing arrangements, and more than 15 formal research collaborations.[49] In such a world, change in relationships is inevitable. Parties may become disillusioned with each other, and lawsuits may result. These complex contractual settings present complex issues for antitrust. Although anticompetitive actions are possible when relationships change, they are by no means likely, let alone inevitable.

1. *Kodak*[50] *and Hold-ups*

In the early 1980s, independent service organizations (ISOs) began servicing Kodak's photocopier and micrographics equipment. The ISOs competed with Kodak, often at substantially lower prices. In the mid-1980s, Kodak limited the availability of its replacement parts for Kodak equipment to ISOs, forcing many ISOs out of business and prompting

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[47] Although there is no single precise definition of relational contracts, the term refers to situations in which parties have a long-term "relation" without having a long-term contract that covers the variety of possible issues that may arise. *See* Charles J. Goetz & Robert E. Scott, *Principles of Relational Contracts*, 67 VA. L. REV. 1089, 1091 (1981):

> A contract is relational to the extent that the parties are incapable of reducing important terms of the arrangement to well-defined obligations. Such definitive obligations may be impractical because of inability to identify uncertain future conditions or because of inability to characterize complex adaptations adequately even when the contingencies themselves can be identified in advance. . . . [L]ong-term contracts are more likely than short-term agreements to fit this conceptualization, but temporal extension per se is not the defining characterization.

Typically, the parties recognize their mutual dependence and will adjust the relationship to maximize their joint benefit even if, under contract law, one party could change the relationship more to its favor. Opportunistic behavior refers, in part, to the "hold up" problems discussed in this section. *See* Timothy J. Muris, *Opportunistic Behavior and the Law of Contracts*, 65 MINN. L. REV. 521 (1981). For recent discussions of both concepts, see John P. Esser, *Institutionalize Industry: The Changing Forms of Contract*, 21 L. & SOC. INQUIRY 593 (1996); Claire Moore Dickerson, *Cycles and Pendulums: Good Faith, Norms, and the Commons*, 54 WASH. & LEE L. REV. 399 (1997); Benjamin Klein, *Contracts and Incentives: The Role of Contract Terms in Assuring Performance, in* CONTRACT ECONOMICS (Lars Werin & Hans Wijkander eds., 1992).

[48] *See* Bengt Holmström & John Roberts, *The Boundaries of the Firm Revisited*, 12 J. ECON. PERSP. 73 (1998).

[49] *See id.* at 85–86.

[50] Eastman Kodak Co. v. Image Technical Servs. Inc., 504 U.S. 451 (1992).

the lawsuit.[51] There is no doubt that the potential for harm to the purchasers of high-volume equipment exists in this setting. Such purchasers generally make product-specific investments, including training employees on use of the equipment. Once these investments are made, it is costly to switch brands. It may also be, as the Court claims, that the equipment's value decreases rapidly in the second-hand market. These low salvage values and high product-specific investments imply that purchasers are "locked in" after their initial equipment purchase, perhaps allowing the seller to take advantage of this situation by increasing the price it charges for service above the level buyers anticipated when they purchased the original equipment.

Whether *Kodak* could engage in such a hold-up depends upon several facts. Most important, for buyers to be harmed, the behavior had to have been unanticipated.[52] At the time the contract was signed, the buyer was operating in a competitive market, with numerous contractual opportunities; a hold-up was not possible. Moreover, buyers can attempt to negotiate specific contract terms to prevent opportunistic behavior, rely on contract law's prohibition against such behavior, or take other steps to protect themselves. In *Kodak*, for example, the buyer could have purchased at a price far enough below what otherwise would be the market value to reflect potential switching costs.[53]

Because buyers can protect themselves, we cannot automatically assume that a change in practice, such as occurred in *Kodak*, is unfair,

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[51] The "hold-up" issues in *Kodak* are analyzed in Benjamin Klein, *Market Power in Antitrust: Economic Analysis After* Kodak, 3 SUP. CT. ECON. REV. 43 (1993); Benjamin Klein, *Market Power in Franchise Cases in the Wake of* Kodak: *Applying Post-Contract Hold-Up Analysis to Vertical Relationships*, 67 ANTITRUST L.J. 283 (1999); Warren S. Grimes, *Market Definition in Franchise Antitrust Claims: Relational Market Power and the Franchisor's Conflict of Interest*, 67 ANTITRUST L.J. 243 (1999); *see also* Carl Shapiro, *Aftermarkets and Consumer Welfare: Making Sense of* Kodak, 63 ANTITRUST L.J. 483 (1995), and sources cited therein, *id.* at 483 n.2.

[52] Moreover, buyers could not be harmed unless they made specific investments allowing the seller to engage in a "hold-up." Further, as discussed in the remainder of the paragraph accompanying this note, protection against opportunism, either through contract law or some other mechanism, must have been inadequate. Finally, it is important to note that the hold-up problem is distinct from pre-contractual monopoly, as the text next discusses.

[53] In general, price adjustments may not perfectly deter opportunism. For example, consider the problem of employees working at less than full capacity, often called shirking. Even if an employer could hire more employees at lower wages to solve the problem of employee shirking, a greater quantity of lower-quality labor at a low price may not perfectly substitute for a smaller quantity of more expensive, higher-quality labor. In the *Kodak* example, the lower equipment price would, as Klein notes, distort the relative prices of equipment and aftermarket services, leading customers inefficiently to economize on service. *See* Klein, *supra* note 51, at 51. Additional contract terms to avoid the potential hold-up include a long-term service agreement or a "most favored purchase" clause on equipments sales that would prevent discriminatory pricing against old purchasers. Finally, a common way to avoid a hold-up problem is to contract with parties who possess sufficiently strong reputations for fair dealing that they have more to lose than gain by a hold-up

let alone anticompetitive. Although the buyers are locked in, the change may have been anticipated. If so, how can it be said to be unfair? Of course, an unanticipated hold-up may still have occurred in *Kodak*. We do not know. Steven Salop argues that such a hold-up did likely occur, and under limited circumstances should be the subject of antitrust liability.[54] Benjamin Klein argues instead that the arrangement Kodak adopted by tying the sale of some of its equipment to the sale of replacement parts and services was a device for price discrimination, that is, charging different prices to different classes of buyers. In any event, he argues that hold-up problems should be the subject of contract law, not antitrust.[55] What is most illustrative for us here is not whether Salop or Klein is correct, but a comparison of how contract law and the new FTC monopolization approach would handle potential hold-ups.

2. *Contract Law and Opportunism*

If the buyers of Kodak equipment had sued for breach of their original purchase contracts, alleging Kodak's change of policy violated its duty to act in good faith, then a court would have placed the burden of persuasion on the buyers. They would have been forced to show the unanticipated nature of Kodak's action and why it violated their rights. Similarly, the ISOs, in a contractual action against Kodak, could not have claimed liability simply because of Kodak's change in policy.[56] Both the buyers and ISOs made their original contractual decisions in a well-functioning market in which they had many choices. As in any contract case, the party claiming breach has the burden of proof. Adjustments to prior relationships occur frequently in a market economy, and courts do not interfere with them unless the plaintiff meets its burden of convincing the court that opportunism or some other breach of contract occurred.

The FTC's proposed rule stands contract law on its head. Because the reasons for, and consequences of, the ambiguity in changes in long-standing relationships are unclear, contract law forces the plaintiff to prove any adverse reasons for, and the impact of, the change. The FTC would *assume* that the change was sinister, and hence presumptively

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policy. *See id.* at 50, 51; Muris, *supra* note 47, at 527. Reliance on reputation may make the arrangement look "one-sided," misleading observers to conclude that the contracts are "unfair." *See* discussion *infra* Part IV.A.3.

[54] *See* Steven C. Salop, Kodak *as Post-Chicago Law and Economics*, ANTITRUST & BUS. LITIG. BULL., Nov. 1993, at 2.

[55] *See* Klein, *supra* note 51, at 62; *see also* Shapiro, *supra* note 51 (criticizing *Kodak* and citing the extensive literature the case has spawned).

[56] I assume that the change violated no explicit Kodak-ISO or Kodak-buyer contractual provision. If it had, then the plaintiff would have a prima facie case of liability; Kodak would then have had to justify its breach.

illegal, unless the defendant could prove an adequate efficiency justification. Because these contractual situations are ambiguous, no such presumption is warranted. Proponents of the FTC's view would surely note that the rule is limited to monopolists. That the defendant is a monopolist matters, but not in the way the FTC desires. If the defendant is not a monopolist, then it would prevail without further inquiry. But whether a business is a monopolist is only one element of a Section 2 case. Causal connection must still be shown.

This discussion does not mean that *Kodak* was decided incorrectly. Indeed, it supports the *Kodak* majority's view that the defendants were wrong in asserting that no potential problems existed. Whether Kodak could defend itself by claiming that its practices could not have been anticompetitive was not before the Court, nor did Kodak argue that, although hold-ups were possible, it did not engage in one.[57]

3. *Franchising: An Example of the Two Approaches*

Franchising illustrates some of the complexities of modern contracting and the difficulty of determining whether a hold-up is involved and

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[57] Such an argument would have made it likely that the motion for summary judgment Kodak sought would have been denied because the hold-up issue presents questions of fact. On remand, the ISOs prevailed, and the court did not discuss the points discussed in the text. *See* Image Technical Servs. Inc. v. Eastman Kodak Co., 125 F.3d 1195 (9th Cir. 1997), *cert. denied,* 118 S. Ct. 1560 (1998). Kodak did make some strong arguments, and Professor Hovenkamp has severely criticized the Ninth Circuit for rejecting them. *See* Herbert Hovenkamp, Antitrust Remedies for Intellectual Property Bottlenecks, Presented at the European University Institute's 1998 EU Competition Policy Workshop: Competition Policy in Communications Network Markets (Nov. 13–14, 1998) (preliminary draft on file with author). Most notably, Kodak argued that its numerous patents and copyrights covering many of its high volume copier parts provided a legitimate business justification for its alleged exclusionary conduct. *See Image Technical,* 125 F.3d at 1214. As Hovenkamp has observed, "[t]he whole point of the intellectual property grant is to create a right not to share the article, process, or expression protected by it, and the courts have consistently recognized that right." Hovenkamp, *supra,* at 2 (citing, inter alia, Cygnus Therapeutics Sys. v. ALZA Corporation, 92 F.3d 1153, 1160 (Fed. Cir. 1996) (patentee "under no obligation to license"); Genentech v. Eli Lilly & Co., 998 F.2d 931, 949 (Fed. Cir. 1993) (same)); *see also* Intergraph Corp. v. Intel Corp., No. 98-1308, 1999 U.S. App. LEXIS 29199, at *48 (Fed. Cir. Nov. 5, 1999) (intellectual property owner permitted to refuse to license absent evidence of anticompetitive intent or harm); Miller Insituform, Inc. v. Insituform of N. Am., Inc., 830 F.2d 606, 609 (6th Cir. 1987); SCM Corporation v. Xerox Corp., 645 F.2d 1195, 1204 (2d Cir. 1981); *cf.* Data Gen. Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1186, 1187 (1st Cir. 1994) (unilateral refusals to license patented inventions never violate the antitrust laws and desire to exclude others from a copyrighted work is a presumptively valid business justification). In spite of these precedents, the Ninth Circuit crafted a rule under which a patentee may be subjected to antitrust liability for a unilateral refusal to license if the fact finder were to determine that its subjective intent was to exclude competitors rather than protect its intellectual property rights. *See* 125 F.3d at 1218–19. The Ninth Circuit's rule is contrary not only to case precedent but also to express language in the Patent Act, which provides that "[n]o patent owner . . . shall be . . . deemed guilty of misuse or illegal extension of the patent right by reason of his having . . . refused to license or use any rights to the patent." 35 U.S.C. § 271(d)(4) (1994). Hovenkamp

anticompetitive effects exist.[58] A successful franchisor has a valuable trademark, representing to consumers a standard of quality. Franchisees must expend resources to maintain the trademark's value. An individual franchisee has an incentive to minimize these expenditures because such franchisees will, at least for a time, continue to attract consumers who expect and are willing to pay for higher quality. As discussed elsewhere,[59] detecting franchisee cheating may be difficult, even if the franchisor tries to write a contract that describes the franchisees' duties in great detail. For example, franchisees could simply decrease monitoring their employees, resulting in a lower level of service. In any event, it can be difficult to prove in litigation that a franchisee has violated a specific clause designed to ensure higher quality, assuming the franchisee has been careful.

With this background, the existence of the clause that has caused considerable litigation and has given rise to much sympathy for franchisees—the franchisor's right to terminate "at will"—becomes understandable. The clause is a lower-cost method than litigation of reducing the franchisee's incentive to cheat. Franchisors can simply terminate franchisees they believe are not providing optimal quality. Of course, the franchisor has other methods to deter franchisee cheating, just like the buyers in *Kodak* had. Franchisors could require non-refundable franchise fees or specific investments from the franchisee that the franchisee would lose upon cheating. Although such investments deter cheating, they raise an additional problem, that of franchisor opportunistic behavior. Depending upon how the at-will clause is interpreted, franchisors could terminate solely to capture the value of franchisee investments, not because the franchisees provided lower quality.[60] Moreover, because franchisors frequently own some outlets, which can compete with outlets operated by franchisees, the franchisee could be concerned that the franchisor is terminating for competitive reasons, including reducing

has predicted that the Ninth Circuit's rule, if widely adopted, would be "incapable of administration" and likely to "create a litigation nightmare." Hovenkamp, *supra*, at 3, 5.

[58] The franchise setting is analogous to *Kodak,* in that the franchisor can be said to have a monopoly of its own franchise system and the possibility of a hold-up of franchisees exists. In fact, following *Kodak*, there has been a revival of franchise antitrust litigation, as detailed in a recent Symposium in this Journal. *Symposium: The Law of Vertical Restraints in Franchise Cases and Summary Adjudication*, 67 ANTITRUST L.J. 201 (1999).

[59] *See* J. Howard Beales III & Timothy J. Muris, *The Foundations of Franchise Regulation: Issues and Evidence*, 2 J. CORP. FIN. 157, 159 (1995), and sources cited therein.

[60] The franchisor could also pay the franchisee a premium that the franchisee will lose if terminated. One attribute that the franchisor is less likely to be able to rely on than the franchisee is reputation. Because at least some franchisors tend to be large, with considerable experience, franchisees can investigate and rely on that reputation. Franchisees who have no similar track record will not have such a reputation upon which the franchisor can rely. An additional problem is that franchisor cheating is more likely to become known than the cheating of any one franchisee.

the direct competition to franchisor-owned outlets or taking over a valuable territory after the franchisee has developed it. Thus, terminations of franchisees can occur for reasons that are justified by efficiency or they can occur for other reasons. It often will be difficult for external observers to determine which is the case.

At-will clauses should contain an implicit good-faith term that termination will not occur for opportunistic reasons.[61] Under this approach, contract law reduces the overall cost of protecting franchisees against franchisor opportunism by presuming that the parties have agreed not to engage in hold-ups. In court, the franchisee has the burden of demonstrating that its termination was opportunistic just as the plaintiff in other contractual actions has the burden of showing that the defendants acted in "bad faith."

Some states, however, have shifted the burdens and require that the franchisor must have "cause" to terminate a franchisee. This approach is analogous to the FTC's monopolization rule, which would challenge a monopolist's change of relationship unless it can justify that change. Economists have shown that these state laws raise costs, and hence are inefficient.[62] Proving "cause" to a court increases the difficulty of termination. The incentive to provide poor quality, resulting from a conscious decision or merely from franchisee ineffectiveness in monitoring quality, is lower when franchisees who are caught cheating can be quickly punished through termination of their contracts. The argument that laws inhibiting franchisors' ability to terminate are inefficient can thus be simply stated: increasing the difficulty of termination increases franchisee incentives to provide suboptimal quality, thereby increasing the cost of controlling quality.[63]

When controlling quality provided by franchisees is more difficult, franchisors have an incentive to substitute increased company ownership of their outlets. Although much of the rationale for franchising in the first place involves avoiding the problems of providing appropriate incentives for company employees to maximize profit,[64] the increased risks of quality degradation among franchisees would, in the absence of any other constraints, encourage franchisors to substitute company-owned

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[61] *See* Beales & Muris, *supra* note 59, at 162; Muris, *supra* note 47, at 578–79.

[62] *See* James A. Brickley et al., *The Economic Effects of Franchise Termination Laws*, 34 J.L. & ECON. 101 (1991); J. Howard Beales & Timothy J. Muris, The Inefficiency of State Regulation of Franchise Contracts (working paper, on file with author).

[63] *See* sources cited *supra* note 62.

[64] *See, e.g.*, Paul H. Rubin, *The Theory of the Firm and the Structure of the Franchise Contract*, 21 J.L. & ECON. 223 (1978); Benjamin Klein et al., *Vertical Integration, Appropriable Rents, and the Competitive Contracting Process*, 21 J.L. & ECON. 297 (1978); Benjamin Klein & Kevin M. Murphy, *Vertical Restraints as Contract Enforcement Mechanisms*, 31 J.L. & ECON. 265 (1988).

outlets for franchised outlets at the margin. Thus, when statutory restrictions on the franchisor's ability to terminate increase the costs of maintaining quality, we would expect to find a greater incidence of company ownership in states that adopt such restrictions. The available evidence supports this hypothesis.[65]

4. Aspen Skiing[66] *and the Difficulty of Evaluating Changed Circumstances*

Between 1958 and 1964, three independent companies operated major facilities for downhill skiing in Aspen, Colorado: Aspen Mountain, Aspen Highlands, and Buttermilk.[67] In 1962 the three competitors introduced an interchangeable, six-day, all-Aspen ticket. The joint ticket "provided convenience to the vast majority of skiers who visited the resort for weekly periods, but preferred to remain flexible about which mountain they might ski each day during the visit."[68] In 1964 the Aspen Skiing Company (Ski Co.), which already owned Aspen Mountain, purchased Buttermilk. In 1967 Ski Co. opened Snowmass, the fourth facility in Aspen. During every season but one between 1962 and 1977, Ski Co. and Aspen Highlands Skiing Corporation (Highlands) offered some form of all-Aspen, six-day ticket, and divided the revenues from those sales based on usage. For the 1977–78 season, Ski Co. informed Highlands that it would continue the all-Aspen ticket only if Highlands would accept a 13.2 percent fixed share of the ticket's revenues. Highlands wanted to continue to divide revenues on the basis of usage, but eventually accepted a fixed 15 percent for the 1977–78 season. For the 1978–79 season, Ski Co. offered to continue the all-Aspen ticket only if Highlands would accept a fixed 12.5 percent share of revenues; Highlands rejected the offer.

Ski Co. also made it "extremely difficult" for Highlands to market its own multi-area package to replace the joint ticket.[69] Without a convenient all-Aspen ticket, Highlands' market share declined steadily from 20.5

[65] *See* sources cited *supra* note 62. Although these state laws are designed to protect supposedly vulnerable franchisees, they ignore the reality of the franchising process. As demonstrated by a 1984 FTC survey, most actual and potential franchisees obtain outside assistance before signing a contract, usually from lawyers. Most had relevant business experience, and most thought they have received sufficient information prior to the contract. Most franchisees had sought other opportunities, frequently meeting with one or more other franchisors, and the overwhelming majority of franchisees were content with the relationship. In addition, 82% of the franchisees had attended or graduated from college, and they had annual incomes well in excess of the national average. These data are discussed at greater length in Beales & Muris, *supra* note 59, at 163.

[66] Aspen Skiing Co. v. Aspen Highlands Skiing Corp., 472 U.S. 585 (1985).

[67] *Id.* at 587–89.

[68] *Id.* at 589.

[69] *Id.* at 593.

percent in 1976–77 to 11 percent in 1980–81. In 1979 Highlands filed a compliant in the District Court for the District of Colorado, alleging that Ski Co. had monopolized the market for downhill skiing services at Aspen in violation of Section 2. A jury found Ski Co. guilty of the Section 2 violation and awarding Highlands trebled damages of $7.5 million. Ski Co. appealed, and the Tenth Circuit Court of Appeals affirmed.[70]

The Supreme Court affirmed the Tenth Circuit, concluding that sufficient evidence existed to support an inference that Ski Co. engaged in unnecessarily restrictive conduct by " 'attempting to exclude rivals on some basis other than efficiency.' "[71] In reaching this determination, the Supreme Court considered the impact of Ski Co.'s conduct "on consumers, on Ski Co.'s smaller rival, and on Ski Co. itself."[72] Consumers suffered because the all-Aspen ticket was a superior product. Highlands suffered because it lost its share of the patrons of an all-Aspen ticket. Finally and perhaps most significantly, Ski Co. failed to convince the jury that its conduct was justified by a legitimate business purpose.

Although *Aspen Skiing* was before the Court on the assumption that the defendant was a monopolist, numerous commentators have noted that the assumption is implausible.[73] Aspen competes with numerous other destination resorts for skiers. Given that *Aspen Skiing* did not involve monopoly, what then was occurring? Perhaps, as Judge Easterbrook has suggested, the plaintiff was an inefficient fringe firm taking a free ride on the defendant's development of Aspen's skiing potential.[74] Alternatively, there may simply have been a contractual dispute that escalated when the plaintiffs sought to use antitrust as a weapon. The defendant may have been trying to increase its share of the joint revenues.[75] The parties were in a bilateral relationship, in which forced bargaining was necessary. Such bargaining can often be protracted, leading to high negotiation

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[70] *See* Aspen Highlands Skiing Corp. v. Aspen Skiing Co., 738 F.2d 1509 (10th Cir. 1984), *aff'd*, 472 U.S. 585 (1985).

[71] 472 U.S. at 605 (citing ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 138 (1978)); *see also id.* at 610–11 (footnotes omitted):

> [The record] comfortably supports an inference that [Ski Co.] made a deliberate effort to discourage its customers from doing business with its smaller rival. . . . [T]he evidence supports an inference that Ski Co. was not motivated by efficiency concerns and that it was willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival.

[72] *Id.* at 605.

[73] *See e.g.,* 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 533g.

[74] *See* Frank H. Easterbrook, *On Identifying Exclusionary Conduct*, 61 NOTRE DAME L. REV. 972, 975–76 (1986).

[75] This explanation has been suggested by CHARLES J. GOETZ & FRED S. MCCHESNEY, ANTITRUST LAW: INTERPRETATION AND IMPLEMENTATION 23 (1998).

costs as the parties cannot turn elsewhere in dividing the contractual surplus. In settings in which there are more than two potential bargainers, the availability of other potential contracting parties limits such costs. Bilateral bargaining settings tend to be unstable, often leading to merger to avoid the high cost of transacting. Indeed, following the *Aspen Skiing* litigation, a merger occurred. In the Supreme Court, the defendant sought to overturn the jury's verdict as a matter of law. For this reason, and because the defendant argued that it should win simply because the lower court's reliance on the essential facility doctrine was inappropriate, factual issues about the impact of a contractual dispute were not before the Court.

The contractual dispute possibility, however, does illustrate an important difficulty with the FTC's view that the monopolist must show an efficiency justification to escape liability. Is the desire to squeeze more money from a contractual partner an efficiency justification? The Court notes that consumers must be harmed before a monopolization case can be successful, and the allocation of contractual surplus argument in effect claims that consumers will not be harmed.[76] As an "efficiency" justification, however, the argument is not a very compelling one for the relatively "powerful" defendant to make before a jury, which may be understandably sympathetic to the "weaker" plaintiff. Moreover, it is difficult to see how antitrust law has anything to contribute to the question of which party should receive what share of the fruits of their mutual efforts. Given the ambiguity of the change in circumstances, there is no reason to limit the defendant's ability to claim that its actions could not be anticompetitive.

B. The Uneasy Record of Past Monopolization Decisions

In the 1980s, some economists suggested theoretical conditions under which potential exclusionary conduct, such as the change in contractual relationships discussed in the previous section, can harm competition. In particular, the "raising rivals' costs" (RRC) theory has received considerable attention.[77] According to this theory, a firm can create, protect, or extend market power by excluding competitors from equal access to

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[76] The high bargaining costs could raise prices to consumers, but these costs result from the conduct of *both* parties; they cannot be attributed solely to the defendant. In any event, merger eliminates these costs, illustrating that the problem is not one of traditional monopoly power.

[77] *See, e.g.*, Thomas G. Krattenmaker & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals' Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986). For a recent discussion of the limitations of RRC, see Malcolm B. Coate & Andrew M. Kleit, *Exclusion, Collusion or Confusion? The Underpinnings of Raising Rivals' Costs*, 16 RES. L. & ECON. 73 (1994).

significant factors of production. By raising costs or otherwise disadvantaging competitors, a firm obtains exclusionary rights to these key factors that can endow it with market power.[78] Although several cases have been cited as examples of anticompetitive exclusion, recent scholarship has cast doubt on each of them.

In *Terminal Railroad*,[79] for example, the defendant railroads were accused of acquiring exclusive access to bridges over the Mississippi River and using that control to harm competitors. Without access to the bridges, the costs of the competitors were raised. Certain railroads were, if not denied access, allegedly required to pay higher prices for the terminal than its owners paid. Stated in these terms, the case has been cited as a paradigm of RRC theory.[80] In 1990 David Reiffen and Andrew Kleit demonstrated that the railroads charged their rivals the same price for bridge services that they charged themselves, denying access to no one.[81] The record of the case does reveal an anticompetitive problem, but it is a horizontal problem. Mergers created a horizontal monopoly on traffic to and from St. Louis. Such mergers would almost certainly violate current law.[82]

In the most famous monopolization case of all, Judge Hand found Alcoa in violation of Section 2 because the company continually expanded to maintain near 100 percent of the market for aluminum.[83] Although Judge Hand's reasoning has been discredited,[84] the new theory

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[78] It is worth noting that Krattenmaker and Salop require both exclusion and demonstration of anticompetitive effect:

> A firm that raises its rivals' costs has not necessarily gained anything. It may have harmed one or more of its competitors, but has it harmed competition? Competition is harmed only if the firm purchasing the exclusionary right can, as a result, raise its price above the competitive level.

Krattenmaker & Salop, *supra* note 77, at 242. Thus, they require injury to both competitors *and* competition.

[79] United States v. Terminal R.R. Ass'n, 224 U.S. 383 (1912).

[80] *See* Krattenmaker & Salop, *supra* note 77, at 234.

[81] *See* David Reiffen & Andrew N. Kleit, Terminal Railroad *Revisited: Foreclosure of an Essential Facility or Simple Horizontal Monopoly?*, 33 J.L. & ECON. 419 (1990).

[82] The mergers included ferry companies that competed with the bridges by ferrying railroad cars across the Mississippi River. Krattenmaker and Salop suggested other problems, including that the Terminal Association was used as a cartel ringmaster to discipline firms if they broke railroad cartel agreements in other parts of the country. Reiffen and Kleit, however, found nothing in the record of the case to support this assertion. *See id.* at 436 n.68.

[83] *See* United States v. Aluminum Co. of Am., 148 F.2d 416 (2d Cir. 1945).

[84] In Judge Hand's words, "nothing compelled [Alcoa] to keep doubling and redoubling its capacity before others entered the field. . . . We can think of no more effective exclusion than progressively to embrace each new opportunity as it opened. . . ." *Id.* at 431. By this reasoning, Alcoa should have restricted output, therefore raising price, and encouraging

of RRC has been used to resurrect the result in *Alcoa*. Alcoa allegedly prevented rivals access to necessary inputs for aluminum production: electricity, and bauxite. Regarding electricity, Krattenmaker and Salop argued that Alcoa entered into "naked" exclusionary supply contracts that allowed it to exclude rivals from the input without having to purchase the input itself. According to the RRC theory, Alcoa did not buy electricity through these contracts. Instead, it purchased market power, i.e., the ability to raise prices above the competitive level, because it had raised rivals' costs.[85]

In 1992, however, John Lopatka and Paul Godek argued that this view is incorrect because Alcoa did not obtain control over a significant percentage of the electricity market.[86] Moreover, Alcoa in fact purchased electric power under the disputed contracts. Thus, Alcoa never "purchased commitments from electric utilities to withhold power from competitors that were unattached to power or incipient power purchases."[87] Regarding bauxite, the authors noted that, at a minimum, Alcoa never controlled a monopoly share of the market. Alcoa did own about one-half of U.S. bauxite reserves, but 40 percent of the bauxite used in the United States was imported. Alcoa did not control these foreign sources. Nor did anyone allege that it purchased naked, exclusionary rights.

United Shoe[88] is another case cited as an example of anticompetitive exclusion. In that case, the defendant supplied shoe machinery under long-term leases, allegedly deterring entry of other manufacturers into the industry. In 1993 Scott Masten and Edward Snyder argued that the

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entry. Although the Supreme Court endorsed Hand's opinion in American Tobacco Co. v. United States, 328 U.S. 781, 813–14 (1946), modern antitrust analysis is largely critical of Hand's reasoning. For representative criticism, see 3 AREEDA & HOVENKAMP, *supra* note 6, ¶ 611.

[85] Krattenmaker and Salop argued that their analysis differs from that of the old "foreclosure" theory, which was conceptually flawed because it did not adequately explain how foreclosure of supply can raise rivals' costs and lead to anticompetitive price increases. Krattenmaker & Salop, *supra* note 77, at 231–34. According to the authors, the defendant may deny its competitors not just units of an input that it uses, but also units that it does not need. In *Alcoa* this allegedly occurred by paying suppliers not to sell to the competitors, that is, by purchasing a "naked exclusionary right." *Id.* at 236. Thus, under this theory, a firm that otherwise lacks power to raise price can, through vertical arrangements, increase input costs to its competitors, leading to a price increase and higher profits. As note 118 *infra* discusses, economists understand that vertical arrangements can harm competition under limited conditions. *See also* Curtis M. Grimm et al., *Foreclosure of Railroad Markets: A Test of Chicago Leverage Theory*, 35 J.L. & ECON. 295 (1992).

[86] *See* John E. Lopatka & Paul E. Godek, *Another Look at* Alcoa: *Raising Rivals' Costs Does Not Improve the View*, 35 J.L. & ECON. 311 (1992).

[87] *Id.* at 319.

[88] United States v. United Shoe Mach. Corp., 110 F. Supp. 295 (D. Mass. 1953), *aff'd per curiam*, 347 U.S. 521 (1954).

leases reflected the desire of the parties to reduce the costs associated with transacting and resolving disputes.[89] Moreover, the authors believed that the leases were an alternative to contractual warranties in facilitating the use of a large number of complex machines. In addition, the leases indirectly rewarded shoe machine manufacturers for providing a wide range of technical advice and know-how. In short, United Shoe's practices promoted the efficient distribution and use of its machines and associated services. In any event, United Shoe never had enough contracts outstanding to achieve exclusion effectively.[90]

Even one of the most widely supported Supreme Court Section 2 decisions, *Lorain Journal*,[91] has recently been questioned. The facts of the case showed that the *Journal*, the sole medium for advertising in Lorain, had attempted to quash competition from a new radio station in a nearby town. When the *Journal* refused to accept advertising from anyone who advertised on the station, the Supreme Court found this practice to be an illegal attempt to monopolize. In 1995, John Lopatka and Andrew Kleit revisited the case, finding that the radio station remained profitable and was never in danger of bankruptcy.[92]

Perhaps these critics of the famous monopolization decisions are wrong. For our purposes, that is irrelevant. That these cases can reasonably be questioned undercuts the FTC's attempt at truncation in monopolization cases. These criticisms, at a minimum, reveal that there is serious question whether alleged exclusionary practices, such as RRC, are in fact exclusionary. The practices may be justified, or they may involve situations that could not lead to the creation, enhancement, or preservation of monopoly. When we lack confidence that certain practices are always or almost always anticompetitive, we should not automatically assume that, even if the practice exists and even if the defendant is a monopolist, there is an anticompetitive impact from the practice. Without proof of such impact, the requisite causal link between the practice and the monopoly does not exist. Accordingly, liability under Section 2 is inappropriate.

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[89] *See* Scott E. Masten & Edward A. Snyder, United States versus United Shoe Machinery Corporation: *On the Merits*, 36 J.L. & ECON. 33 (1993).

[90] Although United Shoe was the dominant firm, only about one-half of its machines were available on a lease-only basis. Thus, contrary to the government's assertions, sale was a real alternative. *See id.* at 51.

[91] Lorain Journal Co. v. United States, 342 U.S. 143 (1951).

[92] *See* John E. Lopatka & Andrew N. Kleit, *The Mystery of* Lorain Journal *and the Quest for Foreclosure in Antitrust*, 73 TEX. L. REV. 1255, 1278–80 (1995). Even those authors, however, were uncertain about the *Journal*'s motivation, and whether the practice was anticompetitive. *See id.* at 1305–06.

C. THE FTC'S RECENT CASES

The issues in the FTC's two recent monopolization cases reveal some of the problems with the truncation approach. In *VISX*[93] the agency charged a Section 2 violation by the procurement of a patent by knowing and willful fraud, relying on the Supreme Court's well-known *Walker Process* decision.[94] The part of VISX's defense to which complaint counsel objected was that the facts surrounding the patent in question were competitively irrelevant because VISX controls other patents that block entry into the relevant market.[95] Thus, VISX argued that it has a legitimate monopoly without the patent allegedly procured by fraud. The case law discussed in Part III above reveals that VISX has a legitimate argument. How can there be any causal connection between the alleged exclusionary conduct and its impact on consumers if VISX's claim is correct? As Judge Posner stated, "[I]f a patent has no significant impact in the marketplace, the circumstances of its issuance cannot have any antitrust significance."[96]

In *Intel*[97] the company was sued for patent infringement by three of its customers, two of which sought to enjoin the shipment of Intel's major product, its microprocessors.[98] Before these disputes, Intel had provided customers—including those suing—advance access to intellectual property, including samples of future microprocessors protected by intellectual property law. Such advance sharing allowed the customers to work on applications for Intel technology, thereby increasing the demand for Intel's products.

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[93] Summit Tech., Inc., FTC Docket No. 9286, Complaint ¶ 29 (filed Mar. 24, 1998), *dismissed,* VISX, Inc., Initial Decision (filed May 27, 1999), *appeal filed* (Aug. 12, 1999).

[94] Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172 (1965).

[95] *See* Complaint Counsel's Memorandum in *VISX, supra* note 4, at 1.

[96] Brunswick Corp. v. Riegel Textile Corp., 752 F.2d 261, 265 (7th Cir. 1984).

[97] Intel Corp., FTC Docket No. 9288 (filed June 8, 1998).

[98] The three customers were DEC, Compaq, and Intergraph. *See* Complaint ¶¶ 15–37. Each asserted intellectual property claims that resulted in patent infringement litigation against Intel. In response to each claim, Intel exercised its right under nondisclosure agreements to stop supplying these customers with advance trade secrets and patented and copyrighted engineering samples of next-generation products. Intel, however, continued to supply these customers with its current products and related technical information. Intel settled its disputes with Compaq and DEC by entering into cross-licensing arrangements and paying substantial monetary compensation. Intergraph, in contrast, refused to negotiate a value-for-value settlement and instead has pursued its patent infringement claims against Intel, seeking billions in damages and an injunction to halt Intel's microprocessor sales. *See* Intergraph Corp. v. Intel Corp., 3 F. Supp. 2d 1255 (N.D. Ala. 1998), *vacated,* No. 98-1308, 1999 U.S. App. LEXIS 29199 (Fed. Cir. Nov. 5, 1999).

The FTC complaint charged that Intel's actions harmed competition by slowing innovation in microprocessor technology.[99] Intel argued, among other things, that it has numerous rivals in microprocessor innovation.[100] Most of these rivals either are not microprocessor customers of Intel or have already granted Intel licenses to their microprocessor patents. Given these facts, Intel's challenged conduct could not undermine the incentives of these other companies to design and develop microprocessors. Thus, Intel claimed that whatever the impact of its actions involving the three intellectual property disputes with the customers that the Commission named in its complaint, there could be no overall impact on the market.[101]

In short, Intel sought to argue that, whatever harm occurred to competitors, there was no harm to competition. The Commission would have limited Intel's ability to make these highly relevant arguments, placing on Intel the burden of showing an efficiency justification for its action.[102] The parties settled the case on the eve of trial.[103]

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[99] *See* FTC Complaint ¶¶ 14, 39.

[100] *See* Intel Corporation's Trial Brief (Feb. 25, 1999), at 20 (identifying fourteen competitors in the general-purpose microprocessor market).

[101] *See id.* at 28–29.

[102] Even if Intel had been allowed to pursue evidence of lack of harm, a rule allowing the Commission to infer harm would change the nature of Section 2 litigation. *See supra* note 41. In rejecting suits by Intel's customers as a justification for Intel's refusal to supply information, the FTC appears to have ignored the implication of the relational contracts literature discussed *supra* Part IV.A. In developing new applications for Intel's microprocessors, and in sharing highly sensitive information, a close working relationship is essential. Lawsuits seeking to enjoin Intel sales are hardly conducive to such a relationship. One of the customers even purchased full-page advertisements in major national newspapers, accusing Intel of willfully stealing its technology. *See, e.g.,* Advertisement for Digital Equip. Corp., WASH. POST, May 14, 1997, at D18. Moreover, Intel claimed that employees of that company subjected Intel engineers who interacted with them to a hostile environment, making cooperation impossible. They also engaged in conduct designed to gather evidence to help with litigation against Intel rather than to facilitate the transfer of information. *See* Intel Corporation's Trial Brief at 44. It is difficult to believe that anyone could consider such an environment conducive to success in the sensitive discussions that existed before the lawsuits. The existence of such atmospherics has led to case law holding that "the bringing of a lawsuit by the customer may provide a sound business reason for the manufacturer to terminate their relations." House of Materials, Inc. v. Simplicity Pattern Co., 298 F.2d 867, 871 (2d Cir. 1962). The defendant could legally terminate the contract even if "the sole motivation . . . was its desire to retaliate for the treble damage action brought against it." *Id.* at 869. For further judicial recognition of this right to terminate previous relationships upon lawsuits filed against a party, see H.L. Hayden Co. v. Siemens Med. Sys., 879 F.2d 1005, 1022 (2d Cir. 1989); Zoslaw v. MCA Distrib. Corp., 693 F.2d 870, 889–90 (9th Cir. 1982).

[103] *See* FTC Press Release, FTC Accepts Settlement of Charges Against Intel (Mar. 17, 1999) <http://www.ftc.gov/opa/1999/9903/intelcom.htm>. The consent decree provides guidelines to Intel for the resolution of intellectual property disputes with its customers:

As with the monopolization cases discussed in Part IV.B *supra*, the crucial issue for this discussion is not whether the VISX and Intel arguments are correct. The issue is whether plaintiffs should be required to show that, whatever its impact on the firms in question, the conduct had an impact on the market. Recent Supreme Court precedent, such as the 1993 decisions in *Spectrum Sports* and *Brooke Group* and the 1998 *NYNEX* decision, indicate that the FTC should not be required to produce such evidence. Neither law, policy, nor fact demonstrates that the impact of the conduct in which VISX and Intel have engaged is so obviously anticompetitive that it would not be worth the effort to examine the effect of the conduct in detail. Accordingly, those cases should have proceeded, as have past Section 2 cases, to analyze all relevant issues, including anticompetitive impact.

D. NETWORK EFFECTS

Chairman Pitofsky has argued that firms in high-technology industries may have market power almost as great and "even more durable" as that of the trusts, such as Standard Oil, a hundred years ago.[104] To support this claim, and with it increased application of Section 2 to high-tech industries, the Chairman relies on the presence of network effects. Network effects are a demand-side phenomenon that result when the benefit a user derives from consumption of a good increases with the number who consume it. Although some economists warn of the limits of the concept as a foundation for antitrust policy, a strong version of the network effects story is used to justify increased antitrust enforcement.[105] Thus, according to this version of the theory, with network effects we have increasing returns in consumption. This positive feedback causes

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if an intellectual property dispute arises and the customer chooses not to seek to enjoin the sale of Intel microprocessors, Intel must continue to provide certain limited advance product information and samples.

[104] Robert Pitofsky, *Balancing Act on Big Business*, WASH. POST, Feb. 9, 1998, at A19. Chairman Pitofsky's recent article with David Balto also reveals his concern with the anticompetitive implications of network effects. *See* Balto & Pitofsky, *supra* note 46. For example, this article relies on the strong version of the network effects story discussed in this Part as a justification for heightened antitrust security. *See, e.g., id.* at 593 ("But network externalities may also result in the persistent dominance of an older network even when newer and cheaper technologies enter the market."); *id.* at 589 (discussing the QWERTY keyboard as an example of alleged lock-in, without referencing the contrary research, discussed below, by Stan Liebowitz and Stephen Margolis, *e.g., Path Dependence, Lock-In, and History,* 11 J.L. ECON. & ORG. 205 (1995); *Policy and Path Dependence: From QWERTY to Windows 95*, REGULATION, No. 3, 1995, at 33; and *The Fable of the Keys*, 33 J.L. & ECON. 1 (1990)). Jonathan Baker also discusses the importance of network effects for his truncation rule. *See* Baker, *supra* note 2, at 516.

[105] For an introduction to the concept and its policy implications, see the Symposium in 8 J. ECON. PERSP. (1994).

more to join the network, ultimately tipping the market so that one standard dominates or even becomes exclusive. Consumers become locked in to this standard. Because they are locked in, even superior technologies cannot dislodge them.[106] Indeed, the winning technology may not have been superior in the first place, but may have become dominant for some small, accidental reason. The term "path dependence" is used to suggest that the economy locks itself into inefficient solutions.

If true, this story has profound implications for antitrust. The significance is not that some firms are dominant. Many industries have dominant firms; some industries even have only one such firm.[107] What is significant is that the industry can be stuck with an inefficient technology. Because the winner is not the best product available, consumers are harmed.

For antitrust, the test is whether the theory fits the facts. On this test, the strong version of the theory fails. There are no industries in which the prevailing technology is demonstrably the wrong one or one in which a clearly more efficient technology has been suppressed, where "efficiency" is defined to include recognition of switching costs. To begin, the fact that network effects are everywhere should give us pause about the usefulness of the concept. For many products, not just high-tech ones, the benefits of use increase as the number of users grow.[108] Thus, consumers of products that require post-sale services, such as automobiles and appliances, produce network effects from the growth of service outlets when more consumers purchase the product. Coca-Cola and Pepsi-Cola drinkers benefit from the network of their fellow consumers because Coke and Pepsi are widely available in restaurants and in vending machines. More generally, sports fans benefit when they live where there are enough other fans that teams find it profitable to locate there. Speakers of English benefit when their number grows as communication and exchange is facilitated.

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[106] To be "superior" in any meaningful sense, the superiority must be known. By analogy, if an unknown scientist woke up one night with a solution to a major problem and promptly died before he could tell anyone, the scientist would justifiably remain unknown and the problem unsolved.

[107] For example, to name but a few of the better-known firms, Frito-Lay in salty snack foods, 3M in transparent tape and self-stick removable notes, and Kraft in processed cheese. In these industries, the dominant firms sell differentiated products. The presence of different consumer preferences may lead to dominance with network effects short of monopoly. *See, e.g.*, JEAN TIROLE, THE THEORY OF INDUSTRIAL ORGANIZATION 160 (1993). The phenomenon of "natural" monopoly, in which an industry will only support one firm, was also well-known before the literature on network effects began.

[108] At least up to a point. Congestion can decrease the value of a network, as when the number attempting to make phone calls exceeds the capacity available.

Two frequently cited empirical examples of the dominance of inefficient technology do *not* prove the point. The first involves QWERTY, the pattern on the typewriters once used, now found on computer keyboards. An influential 1985 article argued that this system was inferior to the Dvorak alternative and was thus an example of path dependency—of being locked into inefficiency.[109] QWERTY, the critics claim, was adopted when typewriters were more prone to jamming and prevented the rapid typing speeds available under alternatives. Yet, Liebowitz and Margolis have shown that tests of Dvorak's superiority were flawed, and performed under the auspices of Dvorak himself.[110] Empirical studies, particularly one done for the General Services Administration in 1956, disprove the alleged inefficiency of QWERTY. Although Dvorak is available today in computer programs and could easily be substituted for QWERTY,[111] it is not used.

Brian Arthur and others have suggested the second example, arguing that the Beta format for video cassette recording was superior to the VHS format that now dominates.[112] Yet, there was no clear difference between the two on picture quality and other variables, save one: VHS tapes had longer recording times.[113] In the marketplace of consumer preferences, this one difference apparently tipped the competition. No other explanation is as consistent with the facts.

The case of computer operating systems is also instructive. MS-DOS was criticized as an inferior technology. Yet DOS did *not* become locked in. Although Microsoft remained the dominant firm, it improved the technology dramatically. Innovation continues, with Windows 98 and its competitors. Moreover, Microsoft products that succeeded, such as the Excel Spreadsheet and Microsoft Word for word processing, were superior to their competitors, while those that failed, such as Money for

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[109] *See* Paul David, *Clio and the Economics of QWERTY*, 75 AM. ECON. REV. 332 (1985); *see also* Lotus Dev. Corp. v. Borland Int'l, Inc., 49 F.3d 807, 819–20 (1st Cir. 1995) (Boudin, J., concurring), *aff'd by an equally divided Court*, 516 U.S. 233 (1996).

[110] *See* Liebowitz & Margolis, *The Fable of the Keys, supra* note 104, at 8–15.

[111] *See* David S. Evans & Richard Schmalensee, *A Guide to the Antitrust Economics of Networks,* ANTITRUST, Spring 1996, at 36, 37 n.7.

[112] *See* W. Brian Arthur, *Positive Feedbacks in the Economy*, SCI. AM., Feb. 1990, at 92.

[113] For a detailed discussion, see Liebowitz & Margolis, *Path Dependence, Lock-In, and History*, *supra* note 104, at 208–09, 218–22. The evidence on picture quality was mixed. Even if Beta was superior on the quality dimension, consumers could value more highly the dimension of VHS's superiority, recording length. The dominance of smaller tapes in hand-held cameras may provide indirect evidence of Beta's superiority. Although the issue has not been the subject of the attention devoted to QWERTY and to BETA-VHS, one crucial difference exists between tape size for cameras and for use in renting movies or taping off of a television: the smaller tape size allows for smaller cameras easier to handle than are the larger cameras necessary for the larger tape size.

personal finance, were not.[114] In each of the three products, a superior revision (Excel, Word, and Quicken) rapidly replaced an inferior one despite the latter's large market share (Lotus 1-2-3, WordPerfect, and Managing Your Money by Meca). In addition, consumer prices fell, even with superior products.

Although the strong network effects theory emphasizes the difficulty that even a superior technology has in replacing a "locked-in" one, evidence of change is everywhere. The 20th century has produced a blizzard of such change, from prominent examples like the automobile replacing the horse and buggy to more simple ones, such as ballpoint replacing fountain pens. More recently, cassettes replaced eight-track tapes, compact discs replaced vinyl records, and video games have witnessed rapid change with Atari, Nintendo, Sony, Sega, and others vying to be *the* standard.

Apparently, real-world institutions prevent the strong network effects story from dominating. Self-interest, manifested through the profit motive, appears to be the most important element. Ownership of the new technology can help eliminate the adverse consequences of network effects because those who will benefit from a new technology have every reason to promote it. Advertising allows the owner to communicate the benefits of the new technology to potential users. Vertical integration, through merger or contract, can allow more efficient production and use of the new technology.[115]

Several aspects of competition in high-technology industries make lock-in of inferior technology unlikely. In the fierce competition for leadership that frequently occurs, the old technology may have only its large customer base as the source of its dominance, not the scale economies that facilitate dominance in some more established industries. Change occurs frequently so that an owner of one technology will have

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[114] Liebowitz and Margolis present this evidence in Causes and Consequences of Market Leadership in Application Software, Conference Paper Presented at Competition and Innovation in the Personal Computer Industry (Apr. 24, 1999) (copy on file with author). The authors determined quality based on magazine reviews, particularly those that provided head-to-head product comparisons. Spreadsheets and word processors are especially important because they are the foundation of "office suites" that account for about one-half of Microsoft's revenue. Microsoft's superiority does not shield it from all antitrust violations. It does provide evidence against the strong network effect argument.

[115] This is not to argue that all externalities from network effects will be internalized. The possibility of nonoptimal levels of investment remains. For example, we may have too few users of a new technology. This is a standard problem in economics, one that was recognized long before discussion of network effects. Whether government intervention can improve matters depends upon the relative costs and benefits of alternative actions. *See* Carl Dahlman, *The Problem of Externality*, 22 J.L. & ECON. 141 (1979).

to be especially resourceful to remain dominant. Moreover, when the market is growing rapidly, as it has for many recent inventions (such as VCRs, fax machines, video games, etc.), the number of committed users is small relative to the number of potential users. The uncommitted are particularly susceptible to new technology. Because millions of American homes do not have a personal computer, competition to develop more user-friendly technology, particularly using voice to operate the PC, is intense.[116]

Of course, technology may remain dominant because it is efficient. Moreover, the costs of switching are relevant for assessing which technology is superior. It is efficient not to switch to a "better" technology if the costs of switching exceed the benefits, even when new purchasers today would prefer the alternative technology. None of this proves that superior products must *always* emerge. Nevertheless, as Liebowitz and Margolis conclude:

> [A]utomobiles are not particularly useful until there are gas stations, and gas stations will not be profitable until there are automobiles. In a world of path dependence, there *might not* be any fax machines. I refuse to buy a fax because I do not know for sure that you will buy one, and you will not buy one because you do not know if I will buy one.
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> But something is amiss. We have cars and we have faxes. We found ways out of these traps. People are clever. They anticipate the future, they look for profit opportunities, they advertise, contract, warranty, and make other sorts of commitments. For every hypothetical trap that can be thought up there are hypothetical escapes. Whether the traps are real and whether the escapes are practical cannot be resolved on theory alone. That something could have happened does not mean that it did. If path dependency is a common phenomenon, the real world should be rife with examples of it.[117]

Although network effects do not therefore warrant increased antitrust scrutiny of, or changed rules toward, high-technology industries, it does not follow that they should be subject to less or no scrutiny. Some practices by dominant firms may be anticompetitive. Although we now recognize that antitrust law's once-harsh attitude toward tying and exclu-

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[116] *See* Neil Gross et al., *Let's Talk!*, BUS. WK., Feb. 23, 1998, at 60.

[117] Liebowitz & Margolis, *Policy and Path Dependence: From QWERTY to Windows 95, supra* note 104, at 41. Network effects can also be relevant as they influence entry conditions. Even theory, however, has mixed implications regarding this issue. Thus, Farrell and Saloner argue that network effects might enhance the speed of change. *See* Joseph Farrell & Garth Saloner, *Standardization, Compatibility, and Innovation*, 16 RAND J. ECON. 70 (1985). Empirically, Liebowitz and Margolis, *supra* note 114, find very rapid market share changes in the products they analyze.

sivity is inappropriate, under limited circumstances these and similar practices can harm consumers.[118]

V. CONCLUSION

This article is not an argument against Section 2 of the Sherman Act. Indeed, while I was director of the FTC's Bureau of Competition in the mid-1980s, we successfully pursued a Section 2 case against U-Haul.[119] Moreover, the breakup of AT&T was a major triumph of government policy against anticompetitive monopolization.[120] This article does reject, however, the FTC's attempt to make it easier for the government to prevail in Section 2 litigation. Although the case law is hardly a model of clarity, one point that is settled is that injury to competitors by itself is not a sufficient basis to assume injury to competition. Yet the FTC's new rule, while agreeing with this concept in principle, would make it too easy to infer injury to competition from the fact of injury to competitors.

Inferences of competitive injury are, of course, the heart of per se condemnation under the rule of reason. Although long a staple of Section 1, such truncation has never been a part of Section 2. In an economy as dynamic as ours, now is hardly the time to short-circuit Section 2 cases. The long, and often sorry, history of monopolization in the courts reveals far too many mistakes even without truncation. Nor does modern industrial organization economics, with its relatively new theories of raising rivals' costs and network effects, provide a basis for departure from full litigation. At most, these theories warrant concern under highly limited circumstances.

Monopolization cases should continue. Given our ignorance about the sources of a firm's success, however, they must necessarily be wide-ranging in questioning whether the conduct at issue in fact created, enhanced, or preserved monopoly, whether efficiency justifications explain such behavior, and all other relevant issues.

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[118] *See* Michael D. Whinston, *Tying, Foreclosure & Exclusion*, 80 AM. ECON. REV. 837 (1990). Even so-called Chicago economists long suspected possible problems. For example, decades ago, Ward S. Bowman, Jr., *Tying Arrangements and the Leverage Problem*, 67 YALE L.J. 19 (1957), and Lester G. Telser, *Why Should Manufacturers Want Fair Trade?*, 3 J.L. & ECON. 86, (1960), noted the benefits of tying and vertical price fixing, respectively, but acknowledged their potential anticompetitive effect in special cases. Aaron Director and Edward H. Levi, *Law and the Future: Trade Regulation*, 51 NW. U. L. REV. 281 (1956), discussed what is now called RRC and the theory's severe limitations. Moreover, because dominant firms may be involved in setting industry standards, the standard-setting process warrants close scrutiny. *See, e.g.*, Balto & Pitofsky, *supra* note 46.

[119] *See* AMERCO, [1983–1987 Transfer Binder] Trade Reg. Rep. (CCH) ¶ 22,434 (FTC Feb. 26, 1987).

[120] *See* United States v. AT&T, 552 F. Supp. 131 (D.D.C. 1982), *aff'd*, 460 U.S. 1001 (1983).