Monopolization, Innovation, and Consumer Welfare

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Introduction

Although courts nowadays routinely recite the old saw that the antitrust laws are intended for "the protection of competition, not competitors," the content of that phrase has not always been clear. The Supreme Court first

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1 Brown Shoe Co. v. United States, 370 U.S. 294, 320 (1962). For a sampling of Supreme Court cases reiterating this phrase, see Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 224 (1993); Atlantic Richfield Co. v. USA Petroleum Co., 495 U.S. 328, 338 (1990); Cargill, Inc. v. Monfort of Colo., Inc., 479 U.S. 104, 110 (1986); Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 762 n.14 (1984); Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 488 (1977). Other cases make the same point using different language. See, e.g., NYNEX Corp. v. Discon, Inc., 523 U.S. 128, 135 (1998) (noting that a plaintiff "must allege and prove harm, not just to a single competitor, but to the competitive process, i.e., to competition itself"); Spectrum Sports, Inc. v. McQuillan, 506 U.S. 447, 458 (1993) ("The purpose of the [Sherman] Act is not to protect businesses from the working of the market; it is to protect the public from the failure of the market. The law directs itself not against conduct which is competitive, even severely so, but against conduct which unfairly tends to destroy competition itself.").

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announced it in *Brown Shoe Co. v. United States*, which held a merger illegal because it would enhance efficiency and thus threaten smaller competitors of the merging firms.\(^2\) More recently, however, courts have given the phrase coherent meaning by linking “competition” to economic efficiency, or consumer welfare.\(^3\) For the most part, the modern Supreme Court has endorsed this goal,\(^4\) invoking it in framing the doctrines of attempted monopolization,\(^5\) non-price vertical restraints,\(^6\) maximum resale price fixing,\(^7\) and antitrust injury.\(^8\)

While most commentators and the enforcement agencies voice support for the consumer welfare standard, substantial disagreement exists over when economic theory justifies a presumption of consumer injury. Virtually all would subscribe to the theoretical prediction that an effective cartel will likely inflict consumer injury by reducing output and thus increasing prices.\(^9\) But the academic and judicial consensus disappears when the theory at issue predicts that a practice—a merger or a predatory pricing campaign, for example—will harm consumers in the future through some complex sequence of events.\(^10\)

\(^2\) *Brown Shoe*, 370 U.S. at 345-46. Later in *Brown Shoe*, the Court repeated that “[i]t is competition, not competitors, which the Act protects,” but added that “we cannot fail to recognize Congress’ desire to promote competition through the protection of viable, small, locally owned businesses.” *Id.* at 344.

\(^3\) See, e.g., *Spectrum Sports*, 506 U.S. at 458; *Discon*, 525 U.S. at 135. See generally Robert H. Bork, *The Antitrust Paradox: A Policy at War With Itself* 427 (rev. ed. 1993) (“The argument of this book, of course, is that competition must be understood as the maximization of consumer welfare or, if you prefer, economic efficiency.”). Professor Robert Lande argues that antitrust is aimed at preventing wealth transfers from consumers to producers rather than enhancing “consumer welfare” in the sense of economic efficiency or total social wealth. The distinction may matter in some cases, but it does not affect our focus on consumer harm. Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 *Hastings L.J.* 65, 68 (1982).

\(^4\) For example, the Court in *Arizona v. Maricopa County Medical Society*, 457 U.S. 332 (1982), declared illegal per se a fee setting arrangement among physicians and insurers that likely benefited consumers. *Id.* at 348-49; see Jill Boylston Herndon & John E. Lopatka, *Managed Care and the Questionable Relevance of Maricopa*, 44 *Antitrust Bull.* 117 (1999). But the Court seemed to reason that its decision in fact protected consumers. See Herndon & Lopatka, at 125.

\(^5\) E.g., *Spectrum Sports*, 506 U.S. at 448.


\(^7\) E.g., State Oil Co. v. Khan, 522 U.S. 3, 7 (1997).

\(^8\) E.g., Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc., 429 U.S. 477, 484 (1977). A private antitrust plaintiff must prove not only an antitrust violation, but also that she has suffered or is threatened with the kind of injury the antitrust laws were intended to prevent, and if the defendant's conduct does not injure competition, the plaintiff's loss cannot properly be considered antitrust injury. *Id.* at 489.

\(^9\) But see Donald Dewey, *The Antitrust Experiment in America* 107-20 (1990) (arguing that collusion may be an efficient response to uncertainty); George Bittlingmayer, *Decreasing Average Cost and Competition: A New Look at the Addyston Pipe Case*, 25 J.L. & Econ. 201 (1982) (arguing that price fixing may be efficient in some industries).

Two recent cases and an article have suggested that certain practices of dominant firms threaten harm to consumers by inhibiting innovation. This concern with retarded innovation is not altogether new, but it has achieved a new prominence. In one celebrated case, a district court held that the Microsoft Corporation ("Microsoft") illegally preserved a monopoly in the market for personal computer operating systems by, among other things, suppressing Netscape's Navigator Internet browser and Sun's Java technology. The court did not find that Microsoft's monopoly would have vanished before trial but for Microsoft's exclusionary practices. Rather, it held that Microsoft's practices delayed the emergence of competing platform technologies that might eventually have threatened Microsoft's dominance. This

11 United States v. Microsoft Corp., 87 F. Supp. 2d 30 (D.D.C. 2000); In re Intel Corp., No. 9288 (FTC filed June 8, 1998). Another case based primarily on the theory of harm to innovation is United States v. Visa U.S.A., Inc., No. 98 CIV. 7076, 1999 WL 476437 (S.D.N.Y. July 7, 1999); see also Complaint, United States v. Visa, Inc. (No. 98 CIV. 7076) ("Visa Compl."). The government alleges that the banks controlling Visa and MasterCard "restrain[] competition in the market for general purpose card network products and services." Visa Compl. ¶ 1. The government asserts that the "anticompétitive effects of [the unlawful practices] exceed what can readily be observed because many products, services, and innovations that would have emerged in a competitive environment were never even considered by" Visa and MasterCard and their managements. Visa Compl. ¶ 83. For another example, the cable television industry's practice of bundling broadband transmission and Internet services has been attacked because it allegedly threatens to dampen innovation. John E. Lopatka & William H. Page, Internet Regulation and Consumer Welfare: Innovation, Speculation, and Cable Bundling, 52 Hastings L.J. 891 (2001) (explaining and rejecting argument).

12 For example, in United States v. Continental Can Co., 378 U.S. 441 (1964), the Supreme Court condemned a merger between a large metal container manufacturer and a large glass container producer in part because it would lessen incentives for product innovation. Id. at 463, 466. More recently, in 1995, the Justice Department issued antitrust guidelines for intellectual property licensing that emphasize a concern with competition to innovate. U.S. DEP'T OF JUSTICE, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY § 3 (1995). Additionally, the enforcement agencies have voiced concern about the effects of mergers on innovation markets. E.g., Richard J. Gilbert & Steven C. Sunshine, Incorporating Dynamic Efficiency Concerns in Merger Analysis: The Use of Innovation Markets, 63 Antitrust L.J. 569, 586-87 (1995) (examining FTC and DOJ challenges to mergers based on innovation markets).

13 United States v. Microsoft Corp., 87 F. Supp. 2d 30, 38-39 (D.D.C. 2000) (conclusions of law); United States v. Microsoft Corp., 65 F. Supp. 2d 1 (D.D.C. 1999) (findings of fact). See generally John E. Lopatka & William H. Page, Antitrust on Internet Time: Microsoft and the Law and Economics of Exclusion, 7 ST.S. J. EXP. REV. 157 (1999). This Article was written before the court of appeals issued its decision in Microsoft, affirming some of the liability determinations, reversing others and the remedial order, and remanding the case. See United States v. Microsoft Corp., 253 F.3d 34 (D.C. Cir. 2001) (en banc) (per curiam). The decision does not change our analysis, though we would have liked to incorporate it in our discussion. We do note in two places in the Article that the decision affects prior statements by the appellate court, see infra notes 54 and 224, but we cannot address the differences in detail because of production constraints.

14 The district court in Microsoft found:

The actions that Microsoft took against Navigator hobbled a form of innovation that had shown the potential to depress the applications barrier to entry sufficiently to enable other firms to compete effectively against Microsoft in the market for Intel-compatible PC operating systems. That competition would have conducted to consumer choice and nurtured innovation . . . . Microsoft has retarded, and perhaps
consumer harm was primarily prospective and contingent on the effect of Microsoft's conduct on future innovation.

In the other case, the Federal Trade Commission ("FTC") charged that Intel used the intellectual property rights in its dominant microprocessors to thwart the development of competing products.\(^\text{15}\) By threatening to withhold intellectual property rights in its products, Intel allegedly induced several of its customers to surrender rights to their innovations by granting Intel royalty-free licenses. Because firms dependent on Intel could not count on reaping the rewards of their innovation, their incentives to innovate allegedly declined. The result was a reduction in "competition to develop new microprocessor technology and future generations of microprocessor products."\(^\text{16}\)

The core idea behind these cases bears a family resemblance to an argument advanced in a recent article. Jonathan Baker, a former director of the FTC's Bureau of Economics, has proposed that certain conduct by dominant firms is so likely to deter innovation that it should be held unlawful even without a showing of immediate harm to competition.\(^\text{17}\) Specifically, he has suggested that "a firm with monopoly power violates Sherman Act \$ 2 if it excludes rivals from the monopolized market by restricting a complementary or collaborative relationship without an adequate business justification."\(^\text{18}\) This "truncated" rule, which he derives from the Supreme Court's decisions in *Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*\(^\text{19}\) and *Eastman Kodak Co. v. Image Technical Services, Inc.*,\(^\text{20}\) obviates the need for the plaintiff to prove harm to competition; it may even preclude the defendant from offering evidence that competition was not harmed.\(^\text{21}\) Instead, Baker would infer competitive injury in the specified circumstances "from the absence of a valid and sufficient business justification."\(^\text{22}\) Baker argues that when the conditions of his rule are satisfied, harm to competition—in the form of a reduced incentive to innovate—usually will result; yet it will be difficult to prove.\(^\text{23}\)

Harm to innovation poses a challenge for antitrust law. Antitrust violations typically involve immediate competitive injury in the form of lower out-

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\(^{15}\) *In re Intel Corp.,* No. 9288 (FTC filed June 8, 1998).

\(^{16}\) *Id.* ¶ 39.


\(^{18}\) *Id.* at 496 (footnote omitted).


\(^{21}\) *Baker, supra* note 17, at 517. Baker would certainly eliminate the requirement in the circumstances described that a plaintiff establish competitive injury as part of its case in chief. But it is not clear whether he would permit the defendant to rebut the case by proving lack of competitive harm. It appears that he would preclude the defendant from avoiding liability by establishing a lack of competitive harm. For example, he says that his "truncated analysis . . . does not consider harm to buyers," suggesting that the defendant may not contest the issue. *Id.*

\(^{22}\) *Id.* at 502.

\(^{23}\) *Id.* at 517.
put and higher prices. In cases alleging harm to innovation, such as *Microsoft* and *Intel*, an adverse price effect sometimes is predicted, but the principal claim is often that better products would have replaced or at least competed with the monopolist's product. Though the consumer injury associated with these effects is an appropriate antitrust concern, it is speculative to a degree not found in traditional antitrust cases. As one commentator has noted, "R&D competition is more complicated than price competition, and the incentives, path of progress, and outcomes are much harder to predict." A finding of harm to innovation requires, first, a counterfactual inference that innovators would have invented new products but for the predatory conduct and, second, that those products would have been better or cheaper than others in the market.

There is reason to be skeptical of the claim of harm to innovation. Economics offers no clear guidance on the conditions and conduct that result in optimal innovation, and thus, theories predicting innovative harm tend not to be robust. Moreover, the claim usually is made in dynamic and innovative markets. A complaint that, absent exclusionary conduct, innovation would have been faster and better is easy to make but difficult either to prove or disprove. If it is accepted too readily, the scope of potential antitrust liability expands beyond appropriate limits. A loser in a dynamic market is apt to assert that the defendant's conduct thwarted the introduction of a product that was just around the corner. The danger is that antitrust will once again protect competitors at the expense of consumers, even as it purports to advance consumer welfare.

Resting antitrust liability on a prediction of future adverse consequences is particularly dangerous when the allegedly exclusionary behavior provides immediate consumer benefits. The Supreme Court has insisted on detailed support for predatory pricing claims largely because a finding of predatory pricing trades the present consumer benefit of very low prices for the possibility of avoiding higher prices in the future. The same tradeoff can arise in

24 See, e.g., DAVID S. EVANS & RICHARD SCHMALENSEE, SOME ECONOMIC ASPECTS OF ANTITRUST ANALYSIS IN DYNAMICALLY COMPETITIVE INDUSTRIES 16 (2001) (NERA working paper, on file with authors) (noting that “antitrust analysis has historically taken departures from the textbook perfect competition as signs of possible competitive problems that may warrant government intervention”).


27 Chin, supra note 25, at 124.

28 As Frederick Warren-Boulton testified on behalf of the government in *Microsoft*, “[i]t is nothing in economic theory that says if an industry is monopolized, the rate of technological change will either speed up or slow down.” Transcript of Nov. 19, 1998, 1998 WL 803825, at *14, United States v. Microsoft Corp., 87 F. Supp. 2d 30 (D.D.C. 2000); see also Richard A. Posner, Antitrust in the New Economy, 68 Antitrust L.J. 925, 939 (2001) (noting that “economic theory and empirical evidence have yet to generate a consensus on whether monopoly is on balance good or bad for innovation”).

29 See, e.g., EVANS & SCHMALENSEE, supra note 24, at 2.

30 See supra note 2.

cases in which the threat to competition stems from efficient integration. Merger analysis, for example, must weigh present benefits of a merger against the possibility that it will foster noncompetitive pricing in the future.\(^3\)

Even if a practice confers no immediate and discernable benefits, prohibiting it in hopes of promoting future innovation is problematic if the kind of practice at issue usually increases consumer welfare. Antitrust law has long resisted imposing liability for certain categories of practices, such as the unilateral choice of trading partners, that are essential to the normal functioning of markets.\(^3\) Because anticompetitive instances of this kind of practice are so rare, the threat of liability can inhibit value-enhancing transactions. Therefore, even if termination of a business relationship appears arbitrary, the law should impose liability for the action only with extreme caution.

In our view, the desire to protect innovation is legitimate, but its specific applications in the Microsoft and Intel cases and Baker’s proposal jeopardize consumer interests. The courts and Baker use the notion of harm to innovation to shift the burden to the defendant to justify conduct that harms a competitor. But to relax the antitrust plaintiff’s obligation to prove harm to competition, particularly when the conduct provides immediate consumer benefits, is unwarranted. A business justification defense does not provide dominant firms the breathing space they need to pursue legitimate objectives in a rough-and-tumble marketplace.

In the next Part, we describe the analytical framework that the Supreme Court has employed to evaluate claims of anticompetitive effects. The Court, in essence, assesses the likelihood of anticompetitive effects by a theoretical analysis of the practice’s facial characteristics. Based on that assessment, the Court allocates the parties’ evidentiary burdens. Where a practice, on its face, is virtually certain to harm competition, the Court declares it either presumptively or per se illegal. But if an anticompetitive effect is less certain, particularly where the practice provides immediate consumer benefits, the Court will insist that the plaintiff provide correspondingly convincing proof that the practice in fact reduces consumer welfare. This approach is evident in the Court’s recent monopolization cases, particularly Matsushita,\(^{34}\) Brooke Group,\(^{35}\) Discon,\(^{36}\) and Spectrum Sports.\(^{37}\) Finally, we show that Aspen and Kodak are consistent with this approach.

We then turn to the practices that are alleged to threaten innovation. In Part II, we argue that the plaintiff in an actual or attempted monopolization case based on a prediction of distant consumer injury must articulate a credible theory of specific harm and support it with some evidence. The defendant, in turn, is free to dispute that claim. In addition, a finding that the

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defendant’s conduct produced immediate and significant consumer benefits should create a presumption in favor of the defendant. In that event, the plaintiff must lose unless it can prove by compelling evidence that the expected cost of future consumer harm exceeds the immediate benefits. We argue, using *Microsoft* and *Intel* as examples, that our approach best accommodates the important interests at stake.

I. Identifying Harm to Competition

Antitrust law has always distinguished practices based upon the quality and quantity of evidence a plaintiff must produce to prove the practice is anticompetitive in a particular case. Historically, the Supreme Court assigned practices either to the per se rule, under which courts could condemn practices “without elaborate inquiry as to the precise harm they have caused or the business excuse for their use,” or to the rule of reason, under which courts could only condemn a practice after examination of “the facts peculiar to the business to which the restraint is applied; its condition before and after the restraint was imposed; the nature of the restraint and its effect, actual or probable,” in addition to any business justifications. For a time, the Court appeared to recognize an intermediate, “quick look” variant of rule of reason analysis. Today, however, the Court endorses a sliding scale inquiry in which the intensity of empirical scrutiny depends upon a facial analysis of the “obviousness” of the practice’s effect on efficiency. The primary indicium of obvious harm is immediate injury to consumers. As we show below, the Court has used this approach in all kinds of antitrust cases, including those involving exclusionary practices.

A. The Sliding Scale and Consumer Harm

Recently, in *California Dental*, the Court wrote:

[T]here is generally no categorical line to be drawn between restraints that give rise to an intuitively obvious inference of anticompetitive effect and those that call for more detailed treatment. What is required, rather, is an enquiry meet for the case, looking to the circumstances, details, and logic of a restraint. The object is to see whether the experience of the market has been so clear, or necessarily will be, that a confident conclusion about the principal tendency of a restriction will follow from a quick (or at least quicker) look, in place of a more sedulous one. And of course what we see may vary

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39 Chicago Bd. of Trade v. United States, 246 U.S. 231, 238 (1918).
40 NCAA v. Bd. of Regents of Univ. of Okla., 468 U.S. 85, 109-10 & n.39 (1984) (“The rule of reason can sometimes be applied in the twinkling of an eye.” (internal quotations omitted)).
41 Cal. Dental Ass'n v. FTC, 526 U.S. 756, 779 (1999) (“[O]ur categories of analysis of anticompetitive effect are less fixed than terms like ‘per se,’ ‘quick look,’ and ‘rule of reason’ tend to make them appear.”).
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over time, if rule-of-reason analyses in case after case reach identical conclusions.\textsuperscript{42}

The facial assessment depends upon the relative plausibility of the competing stories offered by the parties in light of the knowledge of market mechanisms the Court has accumulated over the years.\textsuperscript{43} In \textit{California Dental}, for example, the Court concluded that the procompetitive justifications offered by a dental association for its ban on certain types of advertising were sufficiently plausible to avoid condemnation under a relatively truncated "quick look" inquiry.\textsuperscript{44} In \textit{Catalano, Inc. v. Target Sales, Inc.}, in contrast, the Court concluded that a trade association's ban on free credit was per se unlawful because of its obvious effects on price, regardless of any compensating forms of competition that might occur.\textsuperscript{45}

Antitrust litigation thus typically involves an essentially theoretical facial evaluation of a practice based on its known characteristics at the summary judgment stage and a subsequent empirical evaluation during the trial. The initial evaluation is in many ways the more critical one. It may all but end the inquiry if the practice is found virtually certain to be either procompetitive, as in \textit{BMI},\textsuperscript{46} or anticompetitive, as in \textit{Catalano}. But even if the inquiry continues, the facial assessment shapes it by identifying the crucial issues and the applicable standards of proof. The bifurcated analysis mitigates the uncertainty in antitrust cases and the costs of erroneous determinations of liability. \textit{California Dental} means that when the Court is most confident that conduct harms consumers, it is willing to truncate the analysis; when it is most confident that aspects of the conduct benefit consumers, it is more circumspect.

In cases from the 1960s and earlier, the Supreme Court saw obvious anticompetitive effects where most economists would see none today.\textsuperscript{47} With

\textsuperscript{42} Id. at 780-81.
\textsuperscript{43} For an argument presaging the \textit{California Dental} approach, see John E. Lopatka, \textit{Antitrust and Professional Rules: A Framework for Analysis}, 28 San Diego L. Rev. 301, 379-81 (1991). See also Broad. Music, Inc. v. Columbia Broad. Sys., Inc., 441 U.S. 1, 19-20 (1979) ("\textit{BMI}") (holding that application of a per se rule depends upon "whether the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output . . . or instead one designed to "increase economic efficiency and render markets more, rather than less, competitive.""

\textsuperscript{44} \textit{Id.} at 760, 764-65. The Court stated that "the plausibility of competing claims about the effects of the professional advertising restrictions rules out the indulgently abbreviated review to which the Commission's order was treated. The obvious anticompetitive effect that triggers abbreviated analysis has not been shown." \textit{Id.} at 778.
\textsuperscript{45} \textit{Catalano, Inc. v. Target Sales, Inc.}, 446 U.S. 643, 649 (1980).
\textsuperscript{46} Although the Court held only that the per se rule did not apply to the blanket license, the court of appeals upheld the license under the rule of reason on virtually identical reasoning. Columbia Broad. Sys., Inc. v. ASCAP, 620 F.2d 930, 939 (2d Cir. 1980).
\textsuperscript{47} \textit{E.g.}, United States v. Arnold, Schwinn & Co., 388 U.S. 365, 379 (1967) (observing that vertical territorial restraints "are so obviously destructive of competition that their mere existence is enough"); Dr. Miles Med. Co. v. John D. Park & Sons Co., 220 U.S. 373, 400 (1911) ("That these [resale price maintenance] agreements restrain trade is obvious.").
the judicial acceptance of the Chicago School’s models of practices (and the associated empirical estimates of the prevalence and costs associated with those practices), the courts are less likely to find obvious anticompetitive effects when practices merely harm competitors or franchisees. Indeed, the Supreme Court has broadly characterized as implausible some competitors’ stories of anticompetitive effect, particularly those involving predatory pricing.

The Court, however, evidently gives substantial weight to concrete indicia of consumer harm (or benefit) in evaluating stories of anticompetitive effect. Theories vary in the immediacy of their predicted effects and the relevance of those effects to antitrust concerns. For example, standard theory predicts that cartels and mergers to monopoly will result in immediate harm to consumers. On the other hand, the Court discounts predatory pricing stories in part because many models predict that the relevant harms are in the future; in the short run, the practice benefits consumers by reducing prices. Because antitrust is all about consumer benefit, a court has every reason to discount stories that ask it to trade an immediate benefit for a larger future one. As Judge (now Justice) Breyer stated, in rejecting the assertion that pricing above average total cost could be predatory:

[A] price cut that ends up with a price exceeding total cost—in all likelihood a cut made by a firm with market power—is almost certainly moving price in the “right” direction (towards the level that would be set in a competitive marketplace). The antitrust laws very rarely reject such beneficial “birds in hand” for the sake of more speculative (future low-price) “birds in the bush.” To do so opens the door to similar speculative claims that might seek to legitimate even the most settled unlawful practices.

Moreover, theories vary in the ease and accuracy with which courts can determine whether their conditions are satisfied. Courts have also accepted their own limitations in resolving certain types of factual issues. This

49 E.g., Matsushita Elec. Indus. Co. v. Zenith Radio Corp., 475 U.S. 574, 595 (1986). The Court has stated that “economic realities tend to make predatory pricing conspiracies self-deter-
rming: unlike most other conduct that violates the antitrust laws, failed predatory pricing schemes are costly to the conspirators.” Id. at 595.
50 State Oil Co. v. Khan, 522 U.S. 3, 15 (1997) (“[W]e find it difficult to maintain that vertically imposed maximum prices could harm consumers or competition to the extent necessary to justify their per se invalidation.” (emphasis omitted)).
52 Id. at 2157-58.
53 Barry Wright Corp. v. ITT Grinnell Corp., 724 F.2d 227, 234 (1st Cir. 1983).
54 United States v. Microsoft Corp., 147 F.3d 935, 949 (D.C. Cir. 1998) (“In antitrust law, from which this whole proceeding springs, the courts have recognized the limits of their institutional competence and have on that ground rejected theories of ‘technological tying.’”). In its subsequent decision, the court expressed a greater willingness to investigate the effects of technolog-
ical tying, see United States v. Microsoft Corp., 253 F.3d 34, 92 (D.C. Cir. 2001) (en banc), though it continued to endorse a general “[j]udicial deference to product design changes.” Id. at 65.
awareness of their relative institutional competence has, in turn, shaped the sorts of empirical inquiries the courts set for themselves.

At the same time, the Court has recognized that allowing any sort of inquiry involves the danger of overdeterrence. Because the purpose of antitrust law is to promote consumer welfare, the Court is particularly wary of condemning procompetitive behavior. This concern is acute when the asserted anticompetitive practice is facially similar to or associated with a widely prevalent procompetitive practice, such as a unilateral decision to switch suppliers or to charge low prices. In general, condemnation of procompetitive practices is an important concern when judging any alleged abusive single-firm behavior because practices by a single firm often injure competitors while benefiting consumers. For example, stories of predatory innovation have made little headway because of the fear of inhibiting procompetitive conduct. But the Court also wants to avoid using antitrust liability to deter conduct that, though not procompetitive, is not anticompetitive. To that extent, the Court is not only promoting an antitrust objective, but respecting values embodied in other laws. Even when the practice may violate other laws, the Court is attempting to ensure that the costly machinery of antitrust liability and remedies is not used to promote unrelated interests.

B. Nonprice Exclusion

The Court's analysis in cases alleging exclusionary conduct is fully consistent with the sliding scale approach outlined above, including the premise that injury to consumers is the best indicium of harm to competition. Most obviously, the predatory pricing cases insist that harm to competitors be sharply distinguished from harm to consumers. Nevertheless, some have suggested that the Court's more recent cases reflect a different, more lenient "post-Chicago" approach to the requirement of competitive harm. Professor Baker has argued that Aspen and Kodak in particular state a rule that "a firm with monopoly power violates Sherman Act § 2 if it excludes rivals from the monopolized market by restricting a complementary or collaborative relationship without an adequate business justification." Certainly, Aspen and Kodak suggest that the Court is willing to allow juries to find anticompetitive effects in some instances in which a straightfor-

55 See supra note 3.
56 NYNEX Corp. v. Discon, Inc., 525 U.S. 128, 137 (1998) (finding per se illegality inappropriate because "[t]he freedom to switch suppliers lies close to the heart of the competitive process that the antitrust laws seek to encourage").
57 See id. at 136-37.
58 See, e.g., Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 224 (1993) ("That below-cost pricing may impose painful losses on its target is of no moment to the antitrust laws if competition is not injured.").
60 Baker, supra note 17, at 496.
ward Chicago analysis would find them unlikely. Nevertheless, the cases do not shift the primary focus away from injury to consumers as the primary indicium of competitive harm. They do not support Professor Baker's suggested rule, which would bypass the competitive harm requirement. The suggested rule ignores the Supreme Court's endorsement, most recently in *NYNEX Corp. v. Discon, Inc.*, and *Spectrum Sports, Inc. v. McQuillan*, of a right to terminate business relationships, a right that should only be qualified in narrow circumstances. Equally important, the proposed rule rests on misreadings of *Aspen* and *Kodak*.

I. Discon and Spectrum Sports

The Court has been at some pains since *Colgate* to emphasize that the right of a firm acting independently to refuse to deal, even when arbitrarily exercised to harm trading partners, is essential to competition. In *Discon*, for example, the Court very recently refused to apply per se analysis to a large purchaser's decision to switch suppliers allegedly in a scheme to evade rate regulation, reasoning that "[t]he freedom to switch suppliers lies close to the heart of the competitive process that the antitrust laws seek to encourage." *Discon* provided equipment removal services to New York Telephone Company. The phone company's purchasing agent decided to switch to a competing supplier of removal services, allegedly because Discon would not participate in a scheme to increase rates by defrauding state regulators.

The U.S. Court of Appeals for the Second Circuit ("Second Circuit"), using an approach consistent with Professor Baker's truncated rule, held that this conduct could be per se illegal if the defendants failed to establish a procompetitive justification. Like Baker, the Second Circuit would have allowed the inference of anticompetitive effect from the termination of a vertical relationship, so long as the defendant could not offer an efficiency rationale for the action. The Supreme Court rejected this approach, however, concluding that terminating Discon was not illegal per se under section 1, and it remanded a section 2 claim for further consideration in light of its conclusion that the conduct had to be evaluated under the rule of reason. The

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64 *Discon*, 525 U.S. at 137.
65 *Id.* at 131.
66 *Id.* at 131-32.
67 *Id.* at 132-33.
68 *Id.* at 132. It is irrelevant to the point at issue that the plaintiff alleged that a group of affiliated firms, rather than an individual firm, made the decision to stop buying from the plaintiff; the decision to terminate is unilateral in the sense that the plaintiff did not agree to the termination.
69 The references are to sections 1 and 2 of the Sherman Act, 15 U.S.C. §§ 1, 2 (1994).
70 On remand, the court of appeals itself remanded to the district court for further proceedings under a rule of reason analysis. *Discon, Inc. v. NYNEX Corp.*, 184 F.3d 111, 114 (2d Cir. 1999). The district court then granted summary judgment to NYNEX on the grounds that Discon had failed to define product and geographic markets or to show harm to competition. *Discon, Inc. v. NYNEX Corp.*, 86 F. Supp. 2d 154, 159-65 (W.D.N.Y. 2000).
Court required the plaintiff to “allege and prove harm, not just to a single competitor, but to the competitive process, i.e., to competition itself.”

Proof of its own injury coupled with the defendant’s inability to establish a justification was not enough.

It did not matter that the defendants’ conduct allegedly hurt consumers by raising telephone service rates. Any consumer injury of this type would have flowed from regulatory fraud perpetrated by a lawful monopolist, not from a lessening of competition in the removal services market. The harm, therefore, was not the kind of consumer injury the antitrust laws were intended to prevent. It did not matter that New York Telephone was the largest buyer of removal services in New York state and that Discon had only one competitor for New York Telephone’s business. It did not matter that the challenged decision was allegedly made for the illicit purpose of circumventing regulation. Practices that injure a firm but not the competitive process itself, such as decisions born of “nepotism or personal pique,” may violate some laws, but not the antitrust laws. Even in these circumstances, a “simple allegation of harm to Discon does not automatically show injury to competition.”

The category of practices that presumptively cause competitive injury is narrow. If such a practice is subject to the stringent form of the per se rule, the defendant is liable without more; if it is subject to a milder form, the defendant may escape liability by establishing a justification. But the only practices the Court now considers per se illegal under either version of the rule are horizontal price-fixing, vertical minimum price-fixing, horizontal market divisions, and some horizontal group boycotts. Notably absent from the list is a monopolist’s termination of a complementary relationship with a competitor; indeed, such a termination involves the freedom to choose business partners the Court sought to protect in Discon.

Similarly, in Spectrum Sports the Court refused to find attempted monopolization without a showing that the defendants’ economic power in a relevant market raised a dangerous probability of monopolization. The kind of vertical transactions involved, terminating the plaintiffs’ distributorship, cutting off their supply of a patented input, and launching a version of their product, do not ordinarily have anticompetitive consequences, even if in this case they may have been unfair or predatory. Harm to competition

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71 Discon, 525 U.S. at 135.
72 Id. at 136.
73 Id. at 136-37.
74 Id.
75 Id.
76 Id. (citing Brooke Group Ltd. v. Brown & Williamson Tobacco Corp., 509 U.S. 209, 225 (1993) (“Even an act of pure malice by one business competitor against another does not, without more, state a claim under the federal antitrust laws.”)).
77 Id. at 139.
78 Id. at 133-34.
79 See id. at 137.
81 Id. at 450-51.
82 Id. at 457.
cannot be inferred solely from evidence that the would-be monopolist injured a rival or even intended to monopolize a market, no matter how unfair or predatory the conduct. The Court emphasized that inferences of competitive harm are especially inappropriate in section 2 cases because concerted activity covered by section 1 "inherently is fraught with anticompetitive risk," but single-firm activity is unlike that.

2. Aspen and Kodak

As the foregoing discussion demonstrates, the Court continues to insist on proof of harm to competition, not merely competitors, in its nonprice exclusion cases. Aspen and Kodak are consistent with this approach. In Aspen, Aspen Skiing Co. ("Ski Co."), which owned three of the four skiing mountains in Aspen, had for several years jointly offered an all-Aspen ticket with Aspen Highlands Skiing Corp. ("Highlands"), the owner of the fourth mountain. The companies split the revenues based on purchasers' usage of the facilities. This arrangement collapsed after Ski Co. demanded that Highlands accept a lower percentage. When Highlands' share of skiers in Aspen declined, it sued, claiming that Ski Co.'s refusal to participate in the pass constituted monopolization. The Supreme Court upheld a jury verdict that Ski Co. had monopolized the market for "[downhill] skiing at destination ski resorts' [in] the 'Aspen area.'"

Professor Baker concludes that the Aspen "Court did not consider effect on competition in determining whether the monopolization offense could be found. Harm to competition was effectively inferred . . . from the absence of a valid and sufficient business justification." Although the Court did not require statistical evidence of a market-wide reduction in output, it explicitly inferred harm to competition from the evident effect of Ski Co.'s conduct on consumers and, in the specific circumstances of the case, the effect of Ski Co.'s conduct on Highlands. Ski Co.'s failure to offer a plausible business justification became fatal only because Highlands had otherwise established a prima facie case of anticompetitive harm.

Ski Co. did not challenge the jury's finding that it held a dominant share in a relevant market, with only one rival and no threat of new

83 Id. at 459.
84 Id. (quoting Copperweld Corp. v. Independence Tube Corp., 467 U.S. 752, 767-69 (1984)).
86 Id. at 590-91.
87 Id. at 592-93.
88 Id. at 595.
89 Id. at 596 n.20 (quoting jury findings) (second alteration added).
90 Baker, supra note 17, at 502.
91 Aspen, 472 U.S. at 605-07 ("It is relevant to consider [the challenged conduct's] impact on consumers and whether it has impaired competition in an unnecessarily restrictive way.").
92 Id. at 607-08.
93 Id. at 596. The defendant, however, had contested the issue below. Id. at 600 n.26 ("In [the district court], Ski Co. primarily questioned whether the evidence supported a finding that it possessed monopoly power in a properly defined market.").
The Court found ample evidence that Ski Co.'s conduct injured Highlands, and it concluded that Ski Co. failed "to offer any efficiency justification whatever." These findings by themselves would not have justified an inference of harm to consumers. If skiers had been indifferent among skiing locations in Aspen, for example, the elimination of the four-area ticket would only have rearranged market shares, with no harm to skiers. The Court found, however, that additional "evidence supports a conclusion that consumers were adversely affected by the elimination of the 4-area ticket." The Court relied on extensive testimony and common sense to conclude that a substantial percentage of Aspen skiers valued diversity among mountains. For a given price, including the transaction cost of obtaining access to the slopes, these skiers preferred the opportunity to choose among four mountains in a six-day period to the opportunity to choose among three or fewer mountains. The popularity of the all-Aspen ticket when offered in competition with Ski Co.'s three-area ticket implies that many consumers were willing to pay whatever incremental cost was incurred by the suppliers in collaborating on a joint ticket, for the price of the joint ticket presumably reflected its full costs. The elimination of the joint ticket injured the skiers who preferred the ticket without producing an offsetting benefit to those who did not. Perhaps the Court should have required a showing that total output declined, but it undeniably examined other evidence of consumer harm.

94 Id. at 588 ("The development of any major additional facilities is hindered by practical considerations and regulatory obstacles.").
95 Id. at 607.
96 Id. at 608, 609-10. The Court rejected all of the explanations offered by Ski Co. because the proffered explanations were undercut by the evidence. Id. at 610.
97 Id. at 606.
98 The Court alluded to testimony of the following: a marketing expert, id. at 606 n.34; the owner of a condominium management company, id; a wholesale tour operator, id. at 606-07; and the marketing director of Highlands' ski school, id. at 607 n.36. It also referred to a consumer survey. Id. at 606. The Court noted that the all-Aspen ticket accounted for nearly thirty-five percent of the total market. Id. at 591.
99 Id. at 605 (noting that "[m]ost experienced skiers quite logically prefer to purchase their tickets at once for the whole period that they will spend at the resort").
100 Id. at 605-06.
101 Frank Easterbrook argues that competitive injury cannot be inferred from the fact that some buyers preferred the all-Aspen ticket because product changes will injure some consumers even when the changes are driven by competition. See Frank H. Easterbrook, On Identifying Exclusionary Conduct, 61 NOTRE DAME L. REV. 972, 974 (1986). There is no indication, however, that the cost of the all-Aspen ticket was subsidized by the sale of other tickets or that the joint ticket was unprofitable, and those who did not want such a ticket were never forced to buy one. This was not, therefore, the typical marketing change that pleased some consumers and disappointed others. Nor was it a wholly unpopular change that was nevertheless necessary because the old order could not profitably be sustained. If the apparent consumer injury here were ignored for antitrust purposes, the reason would have to be that, given the size of the market, the injury suffered by one-third of the skiers, those who preferred a multi-area ticket, is just not large enough to matter.
102 See, e.g., id. at 974 (criticizing the Court for not looking for empirical signs of exclusion, including a change in output).
Ski Co.'s abandonment of the four-area ticket may have increased the demand for its own three-area ticket, an imperfect substitute, more than the abandonment increased the demand for Highlands' single-area ticket, which is an even less perfect substitute. Although Ski Co.'s net returns might have declined after taking account of lost revenues from the all-Aspen pass, Highlands' net returns might have declined by an even greater proportion. And overall output might have declined. Of course, such an outcome leaves money on the table: cooperation would have increased total producer surplus, so both firms could have profited by participating in some sort of joint ticket. But strategic bargaining might have thwarted the deal. The fact that Ski Co. only refused to participate on the terms insisted upon by Highlands may suggest that the parties deadlocked in their efforts to divide the cooperative surplus. In the process, consumers lost the surplus value that had been generated by the all-Aspen pass. If this reading of the facts is correct, Ski Co. rationally (but unsuccessfully) tried to induce Highlands to capitulate and participate in a joint ticket for a smaller share of the revenue than it had accepted historically.

Alternatively, the Court may have interpreted the defendant's conduct as profitably raising the costs of a rival in circumstances where consumers were bound to suffer. The monopolist's termination of an efficient arrangement increased the costs of the monopolist's only existing or potential rival, benefiting the monopolist, but hurting consumers.

Whatever one may say about the Court's analysis, which we find unconvincing, the Court did not infer competitive injury solely from a monopolist's termination of a complementary relationship with a competitor without a

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103 The Court noted that Ski Co.'s president believed that "the 4-area ticket was siphoning off revenues that could be recaptured by Ski Co. if the ticket was discontinued." Aspen, 472 U.S. at 592.

104 Unless Ski Co. intended to drive Highlands from the market, which is unlikely given the durable nature of a mountain, one might speculate that the two firms eventually would have struck a bargain to resume the ticket had the antitrust action not succeeded.

105 The Court referred to anecdotal evidence that a Ski Co. director had advocated to the board that Ski Co. make an offer that Highlands "could not accept." Id. at 592. That cuts against the suggestion that Ski Co. wanted to continue the joint ticket, but on more advantageous terms. It is hard to know, however, how much weight to place on the evidence.

106 An unfortunate implication of this reading is that the antitrust laws require a monopolist to capitulate to the demands of a rival in dividing the surplus from cooperating to produce a valuable product, at least where the monopolist had accepted those demands before and cooperation is necessary for the provision of that product.

107 If this was Ski Co.'s strategy, the Court misperceived the nature of the benefit Ski Co. anticipated. The Court believed that Ski Co. itself was injured by the elimination of the all-Aspen ticket, but that "it was willing to sacrifice short-run benefits and consumer goodwill in exchange for a perceived long-run impact on its smaller rival." Id. at 610-11. But if the strategy effectively raised its rival's costs more than its own costs, Ski Co. could profit immediately. See Thomas G. Krattenmaker & Steven Salop, Anticompetitive Exclusion: Raising Rivals' Costs To Achieve Power over Price, 96 YALE L.J. 209, 251 (1986). Given the reduced demand for the product Highlands could offer absent Ski Co.'s cooperation, Highlands conceivably could have been driven out of business, and this indeed would have further increased Ski Co.'s profits. A long-run benefit for Ski Co., therefore, was also possible, if unlikely. But its prospect was not essential to the theoretical rationality of an anticompetitive strategy based on raising rivals' costs.
business justification. The exclusionary capacity of the failure to cooperate was self-evident, given the market defined: in this peculiar market a significant injury inflicted on one rival by inefficient conduct was almost certain to hurt consumers, and no credible efficiency enhancing explanation was offered. Professor Baker suggests that the Court used evidence of consumer harm only to show that the defendant lacked an adequate business justification. But the Court never expressed any such limitation, and the structure of the opinion is inconsistent with Baker's interpretation: the Court addressed the evidence of consumer harm in a section separate from its discussion of business justification.

Baker contends that the Court was not inferring competitive injury from market structure because "the Court never makes this observation." But the Court did cite evidence showing the structure of the market, and the best interpretation of the opinion is that the Court was writing with that structure in mind. We see no need for the Court to state the obvious proposition that harm to the only actual or potential competitor in the market had implications for consumers that would not have existed had the defendant injured only one of many rivals. Stated otherwise, the Court reasoned that

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108 We do not mean to imply that an anticompetitive explanation was the only one possible or even that it was the most convincing. If, for example, the demand for the all-Aspen ticket was a function of promotional investments made disproportionately by Ski Co., Highlands would have been free riding on Ski Co.'s efforts. See Easterbrook, supra note 101, at 975-76. The reduced revenue split offered by Ski Co. as a condition of continuing in the joint arrangement might have represented compensation for its promotional investments. Id. Thus, Ski Co. ultimately offered to continue the arrangement in 1978-79 if Highlands agreed to accept a 12.5% share of the revenue, though Highlands' share of visits by skiers using the all-Aspen ticket ranged from 18.5% to 13.2% during the four previous years for which usage statistics were available. Aspen, 472 U.S. at 590, 592. In that event, the termination of the ticket would have reflected the refusal of Highlands to pay the economic cost of creating the demand for its product and the refusal of Ski Co. to absorb that cost any longer. See Easterbrook, supra note 101, at 975-76. But Ski Co. did not make this argument. What is important is that an anticompetitive explanation was plausible, and even though the Court was not clear as to what precise explanation it had in mind, the Court discerned an injury to competition from much more than Ski Co.'s failure to offer a persuasive business justification.

109 Baker, supra note 17, at 503.

110 The Court cited a passage of the Areeda and Turner treatise that Baker insists is concerned only with business justification, even though the passage attempts to explain the nature of exclusionary conduct. See id. at 503 n.34. On its face, the passage does not support the assertion that harm to consumers relates exclusively to business justification, but in any case the Court is hardly placing heavy reliance on the cited work.

111 Id. at 502 n.33.

112 See supra notes 94-101 and accompanying text.

113 Baker's last argument is that the Court, in Kodak, read Aspen "not to require proof of an effect on competition." Baker, supra note 17, at 503. But the Kodak Court cites Aspen for the proposition that, once the plaintiffs "presented evidence that Kodak took exclusionary action to maintain" one monopoly and strengthen another, "[i]iability turns, then, on whether 'valid business reasons' can explain Kodak's actions." Eastman Kodak Co. v. Image Technical Servs., Inc., 504 U.S. 451, 483 (1992) (emphasis added). Baker reads this as establishing that once it is proven that a monopolist terminated a complementary relationship with a rival, liability turns on business justification. This is not what the passage says. Rather, Aspen stands for the proposition that the plaintiff must adduce evidence that the defendant's conduct is exclusionary before a business justification is relevant. Part of the evidence in Aspen of the exclusionary nature of the conduct was competitive injury. Nothing in the passage implies that the termination of a com-
conduct is presumptively exclusionary for antitrust purposes when, in light of the market structure, it contributes to a monopolist's power and thereby injures consumers.

Professor Baker, implicitly conceding that his interpretation of *Aspen* is less than conclusive, contends that a narrower reading of *Aspen* (like the one we offered above) does not survive *Kodak*. In the latter case, a manufacturer of high-volume photocopiers and micrographic equipment instituted a policy that it would sell unique replacement parts only to equipment owners that bought repair service from it or provided their own service. Previously, independent service organizations ("ISOs") had been able to obtain Kodak parts and sell service to equipment owners. After Kodak implemented the policy, ISOs could no longer acquire parts from Kodak or equipment owners, and Kodak took steps to prevent ISOs from acquiring parts from other sources, such as manufacturers that made and supplied the parts to Kodak. The policy largely prevented ISOs from servicing Kodak machines. The ISOs complained that, although Kodak had, by assumption, an essential-facility relationship automatically is exclusionary in an antitrust sense regardless of the presence or absence of evidence of consumer injury. Indeed, the Court makes clear that conduct is not exclusionary unless it contributes to the acquisition or maintenance of monopoly power. See *id.* at 483. Simply put, there must be an adverse effect on competition before finding that conduct is exclusionary.

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114 Baker, *supra* note 17, at 500-01. Baker in particular takes issue with Judge Posner's interpretation of the case. *Id.* at 500-01 n.25. Posner observed that *Aspen* "is narrowly written" and concluded: "If it stands for any principle that goes beyond its unusual facts, it is that a monopolist may be guilty of monopolization if it refuses to cooperate with a competitor in circumstances where some cooperation is indispensable to effective competition." *Olympia Equip. Leasing Co. v. W. Union Tel. Co.*, 797 F.2d 370, 379 (7th Cir. 1986). Posner observed that *Aspen* "is not a conventional monopoly refusal-to-deal case . . . because Aspen Highlands was never a customer of Aspen Skiing Company." *Id.* at 377. Baker complains that Posner's distinction is "unconvincing," because the two ski firms, "as sellers of products that were complements (in an all-Aspen ski package) as well as substitutes, were in essentially the same economic relationship as competitors who were also customers." Baker, *supra* note 17, at 500 n.25. Baker's economic analysis is correct, but his criticism of Posner is misplaced. Posner accurately observed that *Aspen* is not a conventional monopoly refusal-to-deal case, and he continued, "[b]ut it is like the essential-facility cases in that the plaintiff could not compete with the defendant without being able to offer its customers access to the defendant's larger facilities." *Olympia*, 797 F.2d at 377. In effect, Posner makes the same economic point that Baker makes. Moreover, Posner's characterization of *Aspen* as unusual is entirely appropriate. We would suggest, however, that *Aspen* may stand for the troubling principle that a monopolist violates the antitrust laws by refusing to continue to cooperate with a rival on terms demanded by the rival where cooperation would generate an economic surplus.

115 *Kodak*, 504 U.S. at 458. There is a dispute as to precisely what agreement Kodak reached with its equipment owners. The Court understood that "Kodak would sell parts to third parties only if they agreed not to buy service from" independent service organizations. *Id.* at 463. But in its opinion, the Court cites a passage from the appellate court that is slightly different. The appellate court had stated: "Kodak entered into agreements with its equipment owners . . . that it will sell parts only to users who service only their own Kodak equipment." *Image Technical Servs., Inc. v. Eastman Kodak Co.*, 903 F.2d 612, 619 (9th Cir. 1990) (quoting the terms of sale), cited in *Kodak*, 504 U.S. at 463 n.8.

116 *Kodak*, 504 U.S. at 457.

117 *Id.* at 458.

118 *Id.*
no market power in equipment markets, it had illegally tied the sale of service for its equipment to the sale of its parts in violation of section 1 and had attempted to monopolize the sale of service for its machines in violation of section 2. After minimal discovery, the district court granted summary judgment in favor of Kodak.

The Supreme Court, however, concluded that factual issues remained for trial. The Court held that the sale of Kodak parts and service for Kodak machines could be separate antitrust markets. Kodak's principal defense was that it could not exercise market power in these aftermarket markets because it lacked market power in equipment markets. The Court's rejection of that theoretical argument was the focus of its analysis of the tying claim and served as the backdrop for its analysis of the monopolization claim as well. The Court reasoned that information and switching costs allowed Kodak profitably to induce consumers to buy Kodak equipment, then exploit this locked-in base through supracompetitive prices for parts and service.

The Court's logic was aided by the assumption that Kodak changed its approach to parts distribution after consumers had purchased equipment. Kodak claimed that exploitation of these locked-in consumers would inevitably be a short-run game, because no new customer, aware of the supracompetitive package price, would elect to buy a Kodak machine. It therefore argued that it was entitled to summary judgment on the ground that the alleged strategy was irrational, but the Court rejected the argument, apparently believing that, in theory, Kodak could sustain supracompetitive prices in the aftermarket despite lack of monopoly power in equipment.

The ISOs did not ask the Court to find that Kodak had monopolized or attempted to monopolize any market. Because the Court was reviewing a grant of summary judgment in favor of Kodak, the Court needed only to find a plausible theory of competitive harm and that material facts were in

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119 Id. at 465-66 n.10.
120 Id. at 459.
121 Id.
122 Id. at 486. The U.S. Court of Appeals for the Ninth Circuit had reversed the district court's grant of summary judgment. Id. at 460.
123 Id. at 462, 481.
124 See, e.g., id. at 465-67.
125 Id. at 467-78.
126 Id. at 473.
127 See id. at 457-58 (stating that ISOs were able to buy the parts in question from Kodak in the early 1980s, but that Kodak stopped selling parts to them in 1985 and 1986). Lower courts since Kodak have read the case to require plaintiffs to show that the defendant changed its policy after the product or service was purchased. See, e.g., SMS Sys. Maint. Servs., Inc. v. Digital Equip. Corp., 188 F.3d 11, 18-22 (1st Cir. 1999); PSI Repair Servs., Inc. v. Honeywell, Inc., 104 F.3d 811, 818-21 (6th Cir. 1997); Queen City Pizza, Inc. v. Domino's Pizza, Inc., 124 F.3d 430, 440 (3rd Cir. 1997); Digital Equip. Corp. v. Uniq Digital Techs., Inc., 73 F.3d 756, 762-63 (7th Cir. 1996); Lee v. Life Ins. Co. of N. America, 23 F.3d 14, 20 (1st Cir. 1994).
128 Kodak, 504 U.S. at 470.
129 Id. at 465-67.
130 Id. at 470-71. Our point is not that the Court's theoretical conclusion was correct. In fact, we do not agree with it. But regardless of our disagreement with the Court's conclusion, the Court did consider an array of evidence in its analysis of competitive injury.
131 Id. at 456.
dispute in order to rule for the plaintiffs. To that end, the Court pointed to evidence that “ISO's [sic] provide service at a price substantially lower than Kodak does” and that “[s]ome customers found that the ISO service was of higher quality.”\textsuperscript{132} The Court also cited evidence that “many [ISOs] were forced out of business, while others lost substantial revenue,” and that “[c]ustomers were forced to switch to Kodak service even though they preferred ISO service.”\textsuperscript{133} Further, the record was clear that Kodak imposed its new policy comprehensively, so that all ISOs were affected.\textsuperscript{134}

In the Court's view, the ISOs presented sufficient evidence to show that Kodak's action was exclusionary to preclude summary judgment for Kodak.\textsuperscript{135} A jury could find the conduct to be exclusionary because there was sufficient evidence of harm to competition, given the markets as defined, the across-the-board impact on the monopolist's only significant class of competitors, and evidence of actual harm to some consumers.\textsuperscript{136} Once the Court concluded that the trier of fact could find that the challenged policy contributed to the acquisition or maintenance of monopoly power, summary judgment was improper unless Kodak offered a valid and sufficient business justification that established beyond dispute that its policy was in fact effi-

\begin{itemize}
  \item \textsuperscript{132} Id. at 457.
  \item \textsuperscript{133} Id. at 458.
  \item \textsuperscript{134} Id. (Kodak's policy was to sell “only to buyers of Kodak equipment who use Kodak service or repair their own machines” (emphasis added)).
  \item \textsuperscript{135} Id. at 486. Unlike in Aspen, the evidence of adverse impact on consumers cited by the Court does not fairly imply harm to competition in a relevant sense. The Kodak Court cites evidence that some ISOs charged lower service prices than Kodak, that some customers found that some ISOs provided higher quality of service than Kodak, and, not surprisingly in light of the first two assertions, that some customers who preferred ISO service were forced to buy service from Kodak. But changing its parts distribution policy might have increased the efficiency with which Kodak supplied service. In that case, the disappointment of some consumers might well have been offset by benefits to others. For present purposes, though, what is important is that the Court believed that the plaintiffs had introduced evidence of competitive injury.
  \item \textsuperscript{136} See Kodak, 504 U.S. at 486. Again, Baker argues that the Court cannot be said to have inferred effect on competition from market structure because “the Court never makes this observation.” Baker, supra note 17, at 502 n.33. There was no reason for the Court to state the obvious, and the idea that the Court was oblivious to the importance of market structure is simply untenable. Baker also dismisses the significance of the evidence that service prices charged by Kodak allegedly rose, arguing that the Court cited this evidence only to bolster its conclusion that Kodak was not entitled to summary judgment based on the competitive structure of the equipment market. Id. But the Court also alluded to evidence that Kodak's policy led to higher service prices by excluding low-cost ISOs in its recitation of the facts. See Kodak, 504 U.S. at 457-58. More generally, Baker seems to discount the Court's entire discussion of the tying claim as of little relevance to the monopolization claim. But the Court unmistakably drew upon its tying analysis in conducting its monopolization analysis. The Court explained, “As recounted at length above, [i.e., in the discussion of the tying claim,] respondents have presented evidence that Kodak took exclusionary action to maintain its parts monopoly and used its control over parts to strengthen its monopoly share of the Kodak service market.” Kodak, 504 U.S. at 483 (emphasis added). The Court's conclusion that the plaintiff had stated a plausible case that Kodak's conduct was exclusionary for section 2 purposes was derived almost entirely from its analysis of the section 1 tying claim.
\end{itemize}
The Court found that each of Kodak's asserted justifications raised issues of fact. In sum, the Kodak Court did not state or imply that competitive injury is to be inferred from lack of a business justification. To the contrary, the Court found that the plaintiffs had introduced sufficient evidence of competitive injury to avoid summary judgment.

II. Proving Harm to Innovation in Monopolization Cases

Analysts on both sides of the issue tend to substitute assumptions for evidence in resolving claims of harm to innovation in monopolization cases. Professor Baker asserts that when a monopolist restricts a complementary relationship with a rival without a business justification, the threat to innovation is so great that the plaintiff should not be required to prove a reduction in competition, and perhaps the defendant should not even be permitted to rebut the presumption of such a reduction. And, as we show below, in some recent cases, appellate courts have suggested that a monopolization defendant's assertion of intellectual property rights provides a sweeping business justification for refusals to deal with rivals. Both approaches to claims of harm to innovation in monopolization cases are inadequate.

In our view, the plaintiff in a monopolization or attempted monopolization case must articulate a credible theory of specific consumer harm and support it with some evidence. If the plaintiff does not do so, the defendant is entitled to judgment as a matter of law. If the plaintiff offers a prima facie case of consumer harm, the defendant is free to respond either by articulating a procompetitive explanation for its conduct and supporting that with evidence or by contesting the allegation that the conduct is likely to injure competition. If the defendant comes forward with such a response, the resolution of the case depends upon the strength of the competing stories. In addition, when the plaintiff relies on a counterfactual inference that, absent the defendant's conduct, consumers would be better off, a finding that the defendant's conduct produced immediate and significant consumer benefits creates a presumption in favor of the defendant. In that event, the plaintiff loses unless it can prove by compelling evidence that the expected cost of future consumer harm exceeds the immediate benefits. As is plain from our discussion above, we believe this approach is consistent with the analysis adopted by the Supreme Court.

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137 See Kodak, 504 U.S. at 483.
138 Id.
139 That Baker misinterprets Kodak is reinforced by the Court's decision in Discon, which was decided after Kodak and repudiated the approach Baker ascribes to Kodak. See supra notes 63-79 and accompanying text. If the Discon Court had intended to alter fundamentally an analysis adopted only a few years earlier, one would have expected the Court to make its intention plain.
140 Baker, supra note 17, at 517; supra note 21.
141 Our focus in this Article is on the section 2 offenses. But the approach could be used in other contexts as well, such as claims of exclusion through exclusive dealing in violation of section 1.
In this Part, we explain the approach in more detail and argue that it best accommodates the interests at stake. In addition, we reject the recent tendency of courts of appeals to elide the question of business justification by the invocation of intellectual property rights.

A. Why Section Two Plaintiffs Must Prove Consumer Harm

The ultimate goal of antitrust policy is to maximize social wealth by deterring anticompetitive conduct.\textsuperscript{142} But antitrust enforcement is costly.\textsuperscript{143} It is justified only to the extent that antitrust produces marginal gains in economic welfare that exceed the costs of enforcement.\textsuperscript{144} In general, antitrust doctrines should be crafted to minimize the sum of the following costs: (1) the expected costs of error in failing to impose liability for conduct that does injure competition (a false negative in terms of the standard of efficiency);\textsuperscript{145} (2) the direct costs of litigation; and (3) the expected costs of error in imposing liability for conduct that does not injure competition (a false positive).

These criteria focus on expected costs of error because any antitrust rule involves some probability of a mistake with attendant costs.\textsuperscript{146}

The social loss associated with false negatives is the deadweight loss from anticompetitive conduct that is not deterred. It includes the value of products that would have been developed but for the conduct. The loss is greatest when rules fail to proscribe easily identifiable monopolistic conduct. The direct social cost of litigation includes the judicial and legal resources consumed during litigation and the lost productivity of business personnel whose attention is diverted to trial. Again, the more clear-cut the violation, the more readily administrable the rule, and thus the lower the direct costs of enforcing it. The costs of false positives mirror the costs of false negatives and the direct costs of litigation. The more ambiguous the monopolistic conduct, and the more difficult it is to distinguish from productive conduct, the greater the costs associated with false positives. These costs include the welfare forgone when an efficient practice is avoided out of fear of misplaced liability as well as the excessive investment in identifying antitrust risks and in planning ways to avoid them. The incentive effect of the risk of erroneous antitrust liability is magnified because of the large and punitive nature of the potential sanctions.\textsuperscript{147}

\textsuperscript{142} See supra note 3.


\textsuperscript{144} See, e.g., ELZINGA & BREIT, supra note 143, at 12.

\textsuperscript{145} We use the term false negative to encompass underinclusiveness—instances in which a rule clearly permits anticompetitive conduct. Application of such a rule to permit the practice would be erroneous in terms of the standard of efficiency, even if the rule were correctly applied.


\textsuperscript{147} Successful plaintiffs in civil antitrust cases are entitled to recover threefold the damages sustained as a result of the defendant's violation, along with the cost of suit and attorneys' fees. 15 U.S.C. § 15 (1994). Criminal sanctions, including fines and imprisonment, are available for both section 1 and section 2 violations. 15 U.S.C. §§ 1, 2 (1994). In practice though, section 2
These considerations imply first that a defendant should never be prevented from proving absence of competitive harm to avoid liability in a monopolization case. A defendant may be able to establish the lack of competitive injury easily, while proving a business justification may be difficult or impossible, and so permitting the defense minimizes litigation costs.\(^{148}\) In theory, if a particular practice always harms competition or if the defendant can for some reason easily mislead the court into declaring an anticompetitive practice benign, prohibiting the defense might be justified. But no such monopolizing conduct has been identified.

Second, the considerations imply that the plaintiff in a monopolization case ordinarily must come forward with evidence of actual consumer harm. Because the consumer interest is the central concern of antitrust law,\(^ {149}\) good evidence of consumer harm is normally the surest way of avoiding false negatives, and good evidence of consumer benefit is the surest way of preventing false positives. In unusual instances, relieving the plaintiff of the burden of establishing competitive harm may make sense. If a robust theory predicts that a practice, like horizontal price fixing, nearly always produces competitive injury, but proving competitive injury in particular cases is difficult, the practice should be presumptively unlawful. The difficulty of proof implies that requiring the plaintiff to prove harm to competition would only increase the direct costs of litigation and the expected costs of false negatives. But this presumption would only be justified in the rare case that the practice almost always harms competition.

Under Professor Baker’s approach, when a monopolist restricts a complementary relationship with a rival without a business justification, the plaintiff is not obliged to prove consumer harm, and the defendant apparently may not even rebut the presumption of harm.\(^ {150}\) But existing theory fails to justify such a per se rule. Refusing to maintain a vertical relationship with a rival is often efficiency-enhancing; it may well reflect an effort to mini-

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\(^{148}\) See Easterbrook, supra note 101, at 974-75. An argument for depriving the defendant of the opportunity to show lack of competitive injury is that, though the defendant incurs lower litigation costs, the plaintiff’s costs on the competitive injury issue are higher than on the business justification issue. The defendant has no incentive to consider the plaintiff’s litigation costs in deciding what defense to assert, and so opening the door for the defendant to assert lack of competitive injury could result in higher total litigation costs. This strikes us as a remote possibility. The sensible assumption is that permitting the defendant to assert the defense is likely to lower litigation costs.

\(^{149}\) See supra note 3.

\(^{150}\) See supra note 21. Professor Baker suggests that the burden of production in asserting a business justification is on the defendant, but who bears the burden of persuasion on the issue is undecided. See Baker, supra note 17, at 504.
mize costs or enhance value. In most other cases it is competitively neutral. Thus, Professor Baker’s rule would systematically lead to false positives: imposition of liability for conduct that is competitively benign or is mistakenly found to lack a business justification. And it would deter the termination of relationships whenever the costs of formulating a business justification were significant, even if termination would be competitively neutral. Although the rule would also reduce false negatives, Professor Baker offers no empirical evidence showing that the avoided costs of false negatives would outweigh the costs of false positives.

Proving likely future harm to competition is possible. A plaintiff can prove predatory pricing by establishing, among other things, that the market structure would allow the defendant to recoup predatory losses. A merger can be condemned based on a prediction of likely future collusion or predation. Similarly, intellectual property licensing arrangements can be attacked on the ground that they harm competition for the development of new goods. In all cases alleging that present conduct will harm competition in the future, whether by collusion or exclusion, the plaintiff must establish the conditions for the prediction of future harm to competition in order to shift the burden to the defendant to establish the efficiency of the transaction.

Allegations that an allegedly exclusionary practice inhibits innovation do not change the issues. Standards used to assess the likely impact of mergers and joint ventures on innovative activity offer useful guidance in defining the kind of showing a plaintiff in a monopolization case must make when asserting analogous harm. As those standards indicate, a plaintiff must at a minimum articulate a coherent theory explaining how particular conduct by the defendant both will hamper innovation and is rational. Economics knows too little about the conditions that promote optimum innovation to allow a plaintiff to discharge its obligation by establishing merely that the defendant caused an increase in concentration or imposed costs on some rival. Rather, the plaintiff will almost always have to show that the defendant’s conduct injured a firm actively engaged in research and development designed to result in products or processes that will compete with the monopolist.

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152 Kenneth G. Elzinga & David E. Mills, Trumping the Areeda-Turner Test: The Recoupment Standard in Brook Group, 62 ANTITRUST L.J. 559, 584 (1994) (explaining that the “plausibility of recoupment . . . is accomplished by a fact-intensive examination of the market’s structure”).
153 See, e.g., Hosp. Corp. of Am. v. FTC, 807 F.2d 1381, 1386 (7th Cir. 1986) (Posner, J.) (noting that the ultimate issue in a merger case is “whether the challenged acquisition is likely to facilitate collusion”).
154 See, e.g., Cargill, Inc. v. Monfort of Colo., Inc., 479 U.S. 104, 121-22 (1986) (recognizing that in an appropriate case a competitor would have standing to block a merger because of the threat of predatory pricing).
155 See U.S. DEP’T OF JUSTICE, supra note 12, § 3.2.3.
156 See generally Page & Lopatka, supra note 10.
158 In any private case in which a firm alleges that it was wrongfully prevented from enter-
claim that a firm might have pursued such a strategy had it not been injured would be fatally speculative.\textsuperscript{159}

Moreover, the conduct alleged must adversely affect enough competitors to have a predictable impact on the market. If the conduct affects only a single firm, there must be reason to believe that the victim has some unusual advantage in pursuing research and development in competition with the monopolist. The enforcement agencies presume that the elimination of one competitor through a joint venture when at least four other similarly situated competitors remain is unlikely to injure competition in an innovation market.\textsuperscript{160} Analogously, they presume a merger will not injure actual potential competition, a future adverse effect, when three or more firms other than the firm at issue have the same advantage in entry as that firm.\textsuperscript{161} Normally, eliminating an innovation rival will not harm competition when a significant number of comparable competitors remain uninjured. When an insignificant number of firms are injured by the monopolist’s conduct, the plaintiff at a minimum must offer some evidence that the conduct deters innovation by an appreciable number of other would-be competitors.

Once a plaintiff satisfactorily asserts the prospect of consumer injury, the defendant may respond by asserting that the challenged conduct in fact benefits consumers. The issue then turns on whether the net effect of the conduct will be harmful or beneficial, discounting any predicted future effects to present value. Conduct can in theory provide consumer benefits in the near term, substantial consumer losses in the long term, and a negative net effect. But a showing that conduct produces immediate, significant consumer benefits should create a strong presumption in favor of legality when the alleged consumer injury is merely predicted.

Predictions of future harm in real markets are necessarily uncertain. Changes in taste and new competing or complementary products can topple successful products. Advantages any firm might have in developing competing products are unlikely to be unique, and if unique, they are apt to be short-lived. Firms tend to be surprisingly creative when healthy profits hang in the balance. In retrospect, for example, the competitive forces that dissolved IBM’s dominance in computer markets seem obvious. But at the time, some believed that IBM’s commanding position in the industry was impregnating a market, the plaintiff must establish not only a desire to enter, but also a substantial level of ability and preparedness. See, e.g., Midwestern Waffles, Inc. v. Waffle House, Inc., 734 F.2d 705, 723 (11th Cir. 1984); Grip-Pak, Inc. v. Illinois Tool Works, Inc., 694 F.2d 466, 474-75 (7th Cir. 1982); Heatransfer Corp. v. Volkswagenwerk, A.G., 553 F.2d 964, 986-87 n.20 (5th Cir. 1977).

\textsuperscript{159} See U.S. DEP’T OF JUSTICE, supra note 12, § 3.2.3 (“The Agencies will delineate an innovation market only when capabilities to engage in the relevant research and development can be associated with specialized assets or characteristics of specific firms.”).

\textsuperscript{160} See id. § 3, Example 4.

\textsuperscript{161} See U.S. DEP’T OF JUSTICE, MERGER GUIDELINES (1984). The sections of the 1984 Guidelines pertaining to potential competition were not supplanted by the 1992 Horizontal Merger Guidelines. See also 5 PHILLIP AREEDA & DONALD F. TURNER, ANTITRUST LAW ¶ 1123, at 120-38 (1980) (suggesting that “elimination of a potential entrant should probably be considered immaterial when the universe of potential entrants exceeds three firms and should clearly be considered immaterial when it exceeds six”).
Antitrust should not sacrifice significant present consumer benefits because of a prediction of remote and uncertain consumer injury.

Professor Baker argues that a truncated analysis is particularly appropriate in winner-take-all markets. In these markets, a single product or standard dominates because of scale economies in production, network effects, or some other factor. Baker seems to argue that, in such a market, a dominant firm will be able to capture the full value of its innovations. Consequently, the firm’s incentives to innovate will be so strong that it will continue to innovate, even if it is prevented from severing a complementary relationship with a firm that is trying to develop a competing product. The vertically related firm, however, is particularly vulnerable to the dominant firm’s control over its supply, so its incentives to innovate are more fragile.

The assertion that the dominant firm will be unaffected is implausible. Even extraordinarily strong incentives to innovate can be dampened by ill-founded antitrust rules. In fact, a rule barring the dominant firm from severing vertical relationships is likely to be costly even if it does not deter the dominant firm from innovating. Firms usually switch outlets or suppliers for efficiency reasons; as Discon recognizes, their freedom to do so benefits consumers. To outlaw conduct that provides immediate consumer benefits absent a compelling demonstration that consumers will eventually suffer offsetting harm is unjustified.

Nor is it clear that in winner-take-all markets terminating a vertical relationship will have an appreciable effect on the efforts of competitors to develop competing products. Markets do not tip forever. The existence of significant monopoly profits is a powerful incentive to develop competing products that will displace the presently dominant firm. Given the prospect of these profits, the injury that results from being denied the preferred relationship may not be sufficiently severe to discourage the impaired firm from innovating. Further, other firms, unaffected by the conduct, may be equally well situated to innovate, or may simply acquire the injured firm’s assets. Not every potential competitor is likely to be vulnerable to the demands of

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163 Baker, supra note 17, at 512-17.
165 Baker, supra note 17, at 513-14.
166 For example, Professor Baker states, “[e]nforcement of antitrust’s prohibition against monopolization thus can be expected to encourage fringe firm innovative effort without markedly discouraging dominant firm innovative effort when innovation competition is winner-take-all and the dominant firm takes advantage of a complementary or collaborative relationship to exclude.” Baker, supra note 17, at 514. Baker notes that, in winner-take-all markets, “it is unlikely that small reductions in the expected return to the dominant firm would make much difference to that firm’s innovative effort and prospects for innovation success.” Id. at 515. The predicted effect does not depend on whether the marginal loss in expected return flows from a lost efficiency or the elimination of an exclusionary strategy that merely increases costs.
the dominant firm, because not every one of them is likely to occupy a supply relationship with it.

Finally, dampening rivals' efforts at innovation in winner-take-all markets may have an insubstantial effect on consumers. The products in these markets tend to be extraordinarily durable.\(^{169}\) As a consequence, once the dominant firm achieves a substantial installed base of customers, its continued existence depends upon the development of products that render the prior generation obsolete.\(^{170}\) A computer operating system, for example, does not wear out, and the seller, even if it faces no competitor, will soon have to convince its prior customers to buy a better version, or, having no new buyers, it will slide into commercial oblivion. The powerful incentives in this market for the product leader to compete against itself diminishes the importance of innovation rivals.

B. Why Intellectual Property Is Not a Universal Justification

A monopolist that owes its position in a product market to a patent or copyright cannot in general be forced to license its intellectual property in order to promote competition in that market. The patent and copyright laws reflect Congress's evident determination that conferring limited monopolies to spur innovation is dynamically efficient despite the static inefficiencies they may create.\(^{171}\) The Patent Act now specifies that a patent owner does not illegally extend the patent right by refusing to license the patent or to sell the patented product.\(^{172}\) But patent owners may misuse the patent and violate the antitrust laws if they "attempt to broaden the physical or temporal scope of the patent monopoly."\(^{173}\) The Act recognizes, for example, that tying arrangements may unlawfully extend the patent, where the patent owner has market power.\(^{174}\) These doctrines roughly parallel antitrust law's recognition that a monopolist has a right to refuse to deal that may be lost if it is accompanied by improper conditions.\(^{175}\) But just where lawful exploitation of intellectual property rights ends and where illegal extension begins is the subject of heated debate.\(^{176}\)

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\(^{169}\) See, e.g., LIEBOWITZ & MARGOLIS, supra note 164, at 258 (noting that, unlike most other products, software, which tends to be sold in winner-take-all markets, "never wears out").

\(^{170}\) See, e.g., id. at 258-59.

\(^{171}\) Sony Corp. v. Universal City Studios, Inc., 464 U.S. 417, 429 (1984) ("[T]he limited grant ... is intended to motivate the creative activity of authors and inventors by the provision of a special reward, and to allow the public access to the products of their genius after the limited period of exclusive control has expired.").


\(^{176}\) As one court recently put it, "[a]t the border of intellectual property monopolies and antitrust markets lies a field of dissonance yet to be harmonized by statute or the Supreme Court." Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1217 (9th Cir. 1997).
As we emphasize above, the Court's primary guide in recent antitrust cases has been immediate consumer harm. In intellectual property law, however, it is rarely clear where the consumer interest lies. Ideally, intellectual property law seeks "to allow exclusion to the point where the marginal gain in innovation or creation equals the marginal social cost of excluding access to the work." But no one knows if intellectual property law's present definition of the duration and scope of the exclusive rights represents an optimal balance of incentives and access. Courts regularly enforce intellectual property rights that inflict serious immediate harm on consumers, presuming that to do so is necessary to provide the proper incentives for invention. Introduction of antitrust concepts does little to sharpen the focus of the consumer interest.

Two recent court of appeals decisions involving alleged refusals to deal in aftermarkets reached very different accommodations of intellectual property and antitrust concerns. Following remand from the Supreme Court's decision in Kodak, discussed above, the plaintiff ISOs chose to pursue only their section 2 claims that Kodak had sought to monopolize its service markets by refusing to sell replacement parts (some of which were patented) and refusing to license copyrighted diagnostic software. The trial court instructed the jury that Kodak's intellectual property rights provided no defense if its actions otherwise constituted monopoly leveraging. On appeal from a jury verdict for the ISOs, the U.S. Court of Appeals for the Ninth Circuit ("Ninth Circuit") disagreed, adopting the U.S. Court of Appeals for the First Circuit's view that "a monopolist's desire to exclude others from its [intellectual property] is a presumptively valid business justification." Nevertheless, it held that the erroneous jury instruction was harmless, because the evidence showed that the presumption of a valid justification had been rebutted: Kodak's refusal to sell its parts, the court held, was motivated only by the desire to monopolize the service market, not by the desire to enforce its intellectual property rights.

177 Supra Part I.
180 E.g., A&M Records, Inc. v. Napster, Inc., 239 F.3d 1004, 1022 (9th Cir. 2001) (holding that a firm operating an Internet site that facilitated the exchange of copyrighted music among users probably was engaged in contributory infringement).
181 Supra Part 1.B.2.
182 Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1201, 1212 (9th Cir. 1997).
183 Id. at 1214.
184 Id. at 1218 (quoting Data Gen. v. Grumman Sys. Support, 36 F.3d 1147, 1197 (1st Cir. 1994)) (emphasis added).
185 Id. at 1219-20.
This result is dubious on several grounds. First, the basis for the presumptive business justification was inadequate. The court acknowledged that in tying cases the protection of intellectual property is not a valid business justification, but insisted that "there is an important difference between § 1 tying and § 2 monopoly leveraging: the limiting principles of § 1 restrain those claims from making the impact on intellectual property rights threatened by § 2 monopoly leveraging claims." The court appeared to suggest by this statement that the requirement of concerted action in tying cases protects the policies of the intellectual property laws better than the elements of monopolization. But concerted action only makes a restraint more likely to reduce competition (and therefore less defensible) when the concert is horizontal. In the context of tying, the concerted action is vertical; the essence of the offense is the seller's unilateral imposition of a condition. The underlying economic concern in monopoly leveraging and tying cases is the same.

Second, if the desire to exclude others from intellectual property provides a business justification, the court did not explain why the justification should only be presumptive. Monopoly leveraging necessarily involves a desire to exclude others in order to increase profits. Consequently, all cases in which intellectual property is used for monopoly leverage would seem to involve a desire to exclude others. The court's suggestion that Kodak's assertion of intellectual property rights was pretextual because Kodak really only wanted to monopolize its service markets is unhelpful. Such a standard makes the issue of business justification hinge on the motivation for exclusionary refusals, a determination that will be impossible to make consistently.

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186 Michelle Burtis and Bruce Kobayashi argued that the court's decision depended on the fact that Kodak refused to sell both parts protected by intellectual property rights and unprotected parts. Michelle M. Burtis & Bruce H. Kobayashi, 9 Sup. Ct. Econ. Rev. (forthcoming 2001). They assert that the court might have conclusively permitted a refusal to deal limited to protected parts. That reading is clever and textually defensible, but it is not wholly convincing.

187 Image Technical Servs., 125 F.3d at 1215-16.

188 Id. at 1217.

189 Andrew I. Gavil, Secondary Line Price Discrimination and the Fate of Morton Salt: To Save It, Let It Go, 48 Emory L.J. 1057, 1066 (1999) ("In contrast to the rhetoric of Copperweld, therefore, proof standards in most vertical cases are quite elevated, and do not evidence the harsh treatment envisions [sic] by Copperweld for all 'concerted' actions. Today, that harsh treatment is reserved for horizontal agreements lacking plausible business justifications and for resale price maintenance." (citations omitted)).

190 James C. Burling, et al., The Antitrust Duty to Deal and Intellectual Property Rights, 24 J. Corp. L. 527, 537 (1999) (noting that "in the intellectual property context, statutory protections mean that, absent patent misuse, fraud in the acquisition of the patent, or some other qualification of intellectual property rights, a monopolist is under all circumstances justified in asserting its intellectual property rights to their fullest extent" regardless of any intent to exclude rivals).

191 Image Technical Servs., 125 F.3d at 1219

192 Id. The court said that the presumption of legitimacy can be rebutted not only by evidence of pretext, but also by evidence that the monopolist acquired its intellectual property rights in an unlawful manner. Id. To be sure, the illegal acquisition of a patent or copyright results in no intellectual property that can be exploited free of antitrust exposure. See, e.g., Walker Process Equip., Inc. v. Food Mach. & Chem. Corp., 382 U.S. 172, 178 (1965) (holding that fraud in the acquisition of a patent may serve as the predicate for a section 2 violation).
In *In re Independent Service Organizations Antitrust Litigation*, a case closely analogous to *Kodak*, the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") explicitly rejected the Ninth Circuit’s presumptive justification approach. The plaintiff service organizations had alleged that Xerox refused to sell patented parts and copyrighted manuals and to license copyrighted diagnostic software to them unless they were also end-users of Xerox’s copiers, thereby leveraging its dominance in the equipment and parts markets into dominance in the service market. The court repudiated the relevance of Xerox’s subjective motivation for refusing to sell or license its patented products, holding that “[i]n the absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws.” The Federal Circuit reasoned that a unilateral refusal to sell or license, in contrast to a tying arrangement, is legal even if it has “an anticompetitive effect, so long as that anticompetitive effect is not illegally extended beyond the statutory patent grant.” It did not matter to the court that the exercise of intellectual property rights in certain antitrust markets allegedly had anticompetitive effects in another.

The result in *ISO* avoids the troublesome inquiry into motivation proposed by the Ninth Circuit in *Kodak*, but raises questions of its own. As an economic matter, it is difficult to reconcile the sweeping business justification in *ISO* with the treatment of tying arrangements in the Supreme Court’s *Kodak* decision. The court observed that, unlike *ISO*, “*Kodak* was a tying case when it came before the Supreme Court.” Yet the *Kodak* plaintiffs also asserted section 2 claims, and nothing in the language or the logic of

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194 Id. at 1332. Burtis and Kobayashi argue that the decisions in fact can be reconciled on the ground that the Ninth Circuit might have adopted the Federal Circuit’s approach if *Kodak*, like *ISO*, had involved only a refusal to deal parts protected by intellectual property. See Burtis & Kobayashi, supra note 186.
195 ISO, 203 F.3d at 1324-25.
196 Id. at 1327. The court announced a similar standard applicable to cases involving copyright protection, holding that, “in the absence of any evidence that the copyrights were obtained by unlawful means or were used to gain monopoly power beyond the statutory copyright granted by Congress,” a copyright holder’s “subjective motivation in asserting its right to exclude under the copyright laws” may not be examined “for pretext.” Id. at 1329.
197 Id. at 1327-28.
198 See id. at 1327 (noting that “absent exceptional circumstances, a patent may confer the right to exclude competitors altogether in more than one antitrust market”).
199 Supra Part II.B.2.
200 ISO, 203 F.3d at 1327. Though the two appellate courts reached different conclusions, the Ninth Circuit, like the Federal Circuit, believed that the Supreme Court in *Kodak* did not resolve the antitrust implications of “a unilateral refusal to deal in a patented or copyrighted product.” Image Technical Servs., Inc. v. Eastman Kodak Co., 125 F.3d 1195, 1216 (9th Cir. 1997).
201 Image Technical Servs., 125 F.3d at 1201. Because the Federal Circuit must have known that section 2 claims were made in that case, it apparently meant that even the section 2 claims were based on tying as the exclusionary conduct. Nevertheless, exclusionary conduct need not take the form of a tying agreement, and the court did not emphasize the importance of an agreement in its section 2 analysis.
the Supreme Court's decision suggests that the result would have been different had the plaintiffs not asserted an agreement between equipment owners and Kodak conditioning the purchase of parts on the purchase of service from Kodak. The essence of an illegal tying violation, like the alleged unilateral refusal to deal in ISO, is an extension of economic power in one market into a separate market. Both appear to involve an anticompetitive effect outside of the market in which intellectual property rights are held. But the fact that a tying product is patented or copyrighted does not insulate the tie from liability, while in ISO, the existence of intellectual property protection is a complete defense to a monopolization claim based on a unilateral refusal to deal.

The Federal Circuit also attempted to distinguish ISO by observing that "no patents had been asserted in defense of the antitrust claims against Kodak." But the plaintiffs in Kodak never challenged the legitimacy of Kodak's market power in parts, regardless of its source. Whether that dominance flowed from statutory intellectual property rights or some other source would appear to be of no moment. In any event, Kodak could have asserted such rights, because it did just that on remand. It is hard to believe that Kodak lost in the Supreme Court because of an oversight in pleading.

The inadequacies of the approaches in Kodak and ISO stem from the inadequacies of tying law and the specific language of the patent statute. Lacking any clear indication of where the consumer interest lies, courts grasp at formalistic resolutions. Tying law does not allow rational consideration of the efficiencies of particular practices. Kodak, in particular, should have been resolved for the defendant on grounds of market definition, wholly apart from intellectual property issues. One can sympathize with courts and litigants who seize upon an irrelevant difference, like the absence of an agreement, to avoid outlawing an efficient unilateral refusal to license intellectual property. They are attempting, admirably but disingenuously, to limit the damaging reach of Kodak.

It may be, however, that Congress, in enacting 35 U.S.C. § 271(d)(4) in 1988, intended to immunize all unilateral refusals to license patents from an-

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202 Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 25 ("Only if patients are forced to purchase Roux's services as a result of the hospital's market power would the arrangement have anticompetitive consequences.").


204 ISO, 203 F.3d at 1327-28, 1329.

205 Id. at 1327.

206 Kodak asserted that it "holds 220 valid United States patents covering 65 parts" for its equipment and that all of its "diagnostic software and service software are copyrighted." Image Technical Servs., 125 F.3d at 1214.


Congress simultaneously enacted § 271(d)(5), which requires a showing of market power to prove illegal extension of the patent right through tying, apparently in order to overrule case law suggesting that the patent itself conferred market power. One might infer that Congress sought in both instances to limit the reach of antitrust in the patent context. Such an interpretation is by no means necessary, however, and it would threaten to create serious incongruities in antitrust law. The antitrust treatment of tangible property and patents would differ because there is no blanket antitrust immunity for unilateral refusals to deal in tangible property. Patent law and copyright law might diverge because there is no comparable provision in the copyright statutes. And antitrust liability for withholding patent rights from a would-be user might turn on whether the arrangement is characterized as a unilateral refusal to deal or a tying arrangement.

It remains appropriate, therefore, to consider the possible competitive effects of leveraging monopoly power that rests on intellectual property rights. Both the law of tying and the law of monopoly leveraging seek to prohibit a firm with economic power in one market, whether from intellectual property or not, from extending that power into another market. A sufficient condition for illegality should be that the monopolist, through its conduct, derives monopoly profits in a market, in which its intellectual property is not practiced, that it could not have obtained by fully exploiting its monopoly power in markets in which that property is practiced. This condition is not satisfied merely because a patent owner derives profits from sales in a separate market. For instance, the value of a patent monopoly may be impossible to appropriate except through sales in an ancillary market. But,

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209 Data General Corp. v. Grumman Sys. Support Corp., 36 F.3d 1147, 1187 (1st Cir. 1994) ("Section 271(d) clearly prevents an infringer from using a patent misuse defense when the patent owner has unilaterally refused a license, and may even herald the prohibition of all antitrust claims and counterclaims premised on a refusal to license a patent." (emphasis added)). The Ninth Circuit interpreted the language narrowly, Image Technical Servs., 125 F.3d at 1214 n.7, but the district court in ISO gave it far greater weight, In re Indep. Serv. Orgs. Antitrust Litig., 989 F. Supp. 1131, 1135 (D. Kan. 1997) ("[Section 271(d)(4)] illustrates that a patent holder's unilateral refusal to deal cannot constitute unlawful leveraging of monopoly power."). The court of appeals stated only that the "patentee's right to exclude is further supported by section 271(d)." ISO, 203 F.3d at 1326. For an argument that section 271(d)(4) does not "remove[] unilateral refusals to license a patent as a basis for any antitrust liability," see Marina Lao, Unilateral Refusals to Sell or License Intellectual Property and the Antitrust Duty to Deal, 9 CORNELL J.L. & PUB. POL'Y 193, 206 (1999).

210 See, e.g., Jefferson Parish Hosp. Dist. No. 2 v. Hyde, 466 U.S. 2, 16 (1984) (dictum) ("[I]f the Government has granted the seller a patent . . . it is fair to presume that the inability to buy the product elsewhere gives the seller market power."). But see Jefferson Parish, 466 U.S. at 37 n.7 (O'Connor, J., concurring) ("A common misconception has been that a patent or copyright . . . suffices to demonstrate market power."); Abbott Labs. v. Brennan, 952 F.2d 1346, 1354 (Fed. Cir. 1991) ("A patent does not of itself establish a presumption of market power in the antitrust sense."). See generally William Montgomery, Note, The Presumption of Economic Power for Patented and Copyrighted Products in Tying Arrangements, 85 COLUM. L. REV. 1140, 1150-51 (1985).

211 See Randal C. Picker, Regulating Network Industries: A Look at Intel, 23 HARV. J.L. & PUB. POL'Y 159, 180 (1999) (arguing that "the generally applicable anti-competition policy should apply equally to rights tangible and intangible").

212 See, e.g., Dawson Chem. Co. v. Rohm & Haas Co., 448 U.S. 176 (1980); Mercoid Corp.
if proven, acquiring monopoly profits in a second antitrust market, in which the protected property is not used, whether through tying or unilateral refusals to deal, is not included in a statutory grant of intellectual property rights and should be open to antitrust analysis. For instance, a threat to withhold access to intellectual property in order to induce a potential competitor to refrain from developing a competing technology would not automatically escape antitrust scrutiny.

III. Microsoft

The discussion so far has developed the analytical framework for antitrust cases alleging harm to innovation as a form of exclusion. In United States v. Microsoft Corp., the most famous such case in recent years, the district court concluded that Microsoft engaged in a variety of predatory acts in order to suppress threats to its monopoly of operating systems.\(^{213}\) The heart of the case is Judge Jackson’s holding that Microsoft’s bundling of its Web browser, Internet Explorer (“IE”), into the Windows operating system constituted both monopolization and tying.\(^{214}\) We limit our discussion here to that aspect of the case.\(^{215}\)

The practice constituted monopolization because “Microsoft bound Internet Explorer to Windows with contractual and, later, technological shackles in order to ensure the prominent (and ultimately permanent) presence of Internet Explorer on every Windows user’s PC system, and to increase the costs attendant to installing and using [Netscape’s] Navigator on any PCs running Windows.”\(^{216}\) This harm to Navigator prevented the evolution of Navigator into a competing middleware platform for applications that would have eroded Microsoft’s dominance in operating systems.\(^{217}\) Nor was Microsoft able to offer a business justification that explained to Judge Jackson’s satisfaction the full extent of the harm to Navigator.\(^{218}\) Microsoft’s suggested quality-related or technical justifications did not fully explain Microsoft’s refusal to license a version of Windows without IE.\(^{219}\) For example, its assertion that it should have the ability to incorporate best of breed

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\(^{214}\) Id. at 39, 49-51.


\(^{216}\) Microsoft, 87 F. Supp. 2d at 39.

\(^{217}\) Id. at 40.

\(^{218}\) Id.

\(^{219}\) Id.
functionalities in browsers failed because IE is not the best of breed and Microsoft knew it. Consequently, the inclusion of IE in Windows “cannot truly be explained as an attempt to benefit consumers and improve the efficiency of the software market generally, but rather as part of a larger campaign to quash innovation that threatened its monopoly position.”

The inclusion of IE in Windows was also, according to Judge Jackson, an illegal tying arrangement. Illegal tying occurs only if the defendant links two separate products. Many observers believed that the U.S. Court of Appeals for the D.C. Circuit’s (“D.C. Circuit”) decision in a 1997 Microsoft consent decree case stated the controlling standard for evaluating whether separate products exist in cases of technological integration: the products are integrated if the combination offered a facially plausible claim that the bundling “combines functionalities ... in a way that offers advantages unavailable if the functionalites are bought separately and combined by the purchaser.” Microsoft must thus make the relevant combination, and it must offer benefits that a combination accomplished by the purchaser, for example, by installing a stand-alone browser, would not provide. Though it was interpreting a consent decree, the appellate court emphasized the need to “keep procompetitive goals in mind” in resolving the integration issue. Moreover, the court asserted that the standard it announced was “consistent with tying law.” Judge Jackson himself, in denying Microsoft’s motion for summary judgment, acknowledged with misgivings that the D.C. Circuit’s standard controlled the antitrust case.

If the D.C. Circuit’s standard did control the case, Microsoft’s inclusion of IE in Windows undoubtedly created an integrated product. The court of appeals stated that the combination of IE and Windows occurred at the design stage, not at the moment of installation of IE from a separate disk. The integrated design offered some facially plausible benefits because it up-

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220 Id.
221 Id.
222 Id. at 50.
224 United States v. Microsoft, 147 F.3d 935, 950 (D.C. Cir. 1998). Because of “the limited competence of courts to evaluate high-tech product designs and the high cost of error,” id. at 950 n.13, a “court’s evaluation of a claim of integration must be narrow and deferential,” id. at 949-50. The court retreated from this approach in its subsequent decision. See United States v. Microsoft Corp., 253 F.3d 34, 92 (D.C. Cir. 2001) (en banc) (“To the extent that the [prior] decision completely disclaimed judicial capacity to evaluate ‘high-tech product design,’ it cannot be said to conform to prevailing antitrust doctrine ....” (citation omitted)). Nevertheless, the court endorsed a general “[j]udicial deference to product innovation.” Id. at 65.
225 Microsoft, 147 F.3d at 948. The combination “must be different from what the purchaser could create from the separate products on his own” and the combined form must “be better in some respect ... The concept of integration should exclude a case where the manufacturer has done nothing more than to metaphorically ‘bolt’ two products together.” Id. at 949.
226 Id. at 946.
227 Id. at 950.
230 Microsoft, 147 F.3d at 952.
graded nonbrowsing features of the operating system in ways that a standalone browser could not. As Judge Jackson's appointed expert, Lawrence Lessig, stated:

While this Court has found instances of the design of Windows 95/98 that serve no efficiency function—indeed instances that hamper the efficiency of Windows 95/98—the question is not whether there is any bad in the design. The Court of Appeals’ test is whether there is “some good.” The Court's findings indicate there is some good, even if the Court believes that on balance the net is not good.

In the final decision on the merits, however, Judge Jackson concluded that the D.C. Circuit did not intend the test to govern the legality of software bundling under section 1 and, if it did have such an intent, the test was inconsistent with Supreme Court precedent. The test, according to Judge Jackson, inappropriately deferred to the defendant's asserted perception of the market, required only a facial assertion of benefits, and allowed no balancing of anticompetitive effects. In Judge Jackson's reading of the precedents, even if a combination of products involves clear-cut efficiencies, the products remain separate if consumers view them as different products, a proxy for whether providing the products separately is efficient. Because consumers view browsers and operating systems as separate products, they are so, no matter how thoroughly the code is commingled and no matter how many benefits the combination provides. The court also noted that all other sellers of operating systems offer browsers in separable form.

The court recognized that other courts had treated issues of technological tying differently from conventional tying arrangements, and Judge Jackson conceded that technological integrations hold the potential for greater benefits than the typical tie. He further acknowledged that a “mechanical" application of the separate products test would block virtually all upgrades of software that involve addition of functionalities that had previously been provided separately. But Judge Jackson deemed himself bound by the Supreme Court's precedents.

In our experience, the judge's claim that he has no choice is often a rhetorical ploy to avoid troublesome issues. The Supreme Court's antitrust decisions do not require lower courts to ignore obvious benefits of practices

231 Id. at 951.
232 Brief of Amicus Curiae Professor Lawrence Lessig at 16, United States v. Microsoft Corp., 87 F. Supp. 2d 30 (D.D.C. 2000) (No. CIV.A.98-1232) (citation omitted). Professor Lessig noted that the court had found “some good” by “indirectly recognizing [the] platform value of exposed browser functionality APIs” associated with IE's componentized design. Id.
234 Id. at 47-49.
235 Id. at 48-49.
236 Id.
237 Id. at 51.
238 Id.
239 Id.
240 Id.
that literally come within a per se rule.\textsuperscript{241} Antitrust law exists to promote consumer welfare;\textsuperscript{242} a court must return to that policy in its interpretation of the scope of antitrust rules. The court initially must examine a complex practice to determine if its facial effects on consumer welfare justify their inclusion in the same category as practices that precedent deems per se unlawful.\textsuperscript{243} Such an analysis would have led to a different opinion in \emph{Microsoft}.

The surest indicator of the effect of a practice on efficiency is its immediate effect on consumers. If a cartel gains control over its members’ production decisions, consumers immediately pay more for the product and get less of it. In the case of tying arrangements, the harm is subtler. Consumers do not necessarily pay more; indeed the Supreme Court has recognized that a seller is free to charge what it can for the products sold separately, including a monopoly price for the tying product.\textsuperscript{244} But if the products are linked, even if the total price remains the same, consumers may be injured because they are forced to pay for a product from the defendant that they may have chosen to purchase elsewhere.\textsuperscript{245} The practice is thus thought to inhibit competition on the merits: consumers do not choose the tied product based on its intrinsic qualities and price, but because of the compulsion imposed by the tie. This compulsion excludes the competing supplier of the tied product, thus injuring the consumer.

One might in principle rebut a showing of this kind of forcing by evidence of technological advantages, as the D.C. Circuit appeared to recognize.\textsuperscript{246} But there should be no need to parse the technical issues in any detail in \emph{Microsoft}, because the decision to bundle IE with Windows does not involve forcing. It results in a clear-cut consumer benefit, with no impairment of consumer choice. At a minimum, the bundling provided those users of Windows who preferred IE or were indifferent between browsers with the convenience of preinstalled browsing functionality, without hurting those who preferred Navigator.\textsuperscript{247} The district court itself recognized that “many—

\textsuperscript{241} See, e.g., \textit{Broad. Music, Inc. v. Columbia Broad. Sys., Inc.}, 441 U.S. 1, 19, 23-24 (1979) ("\textit{BMI}") (holding that a practice that literally fixes prices is not necessarily per se illegal price fixing).

\textsuperscript{242} See supra note 3.

\textsuperscript{243} \textit{BMI}, 441 U.S. at 19-20 (observing that whether a practice should be characterized as price fixing depends upon “whether the practice facially appears to be one that would always or almost always tend to restrict competition and decrease output”).


\textsuperscript{245} Id. at 15 ("[T]he freedom to select the best bargain in the second market is impaired by his need to purchase the tying product, and perhaps by an inability to evaluate the true cost of either product when they are available only as a package.”).

\textsuperscript{246} \textit{Supra} notes 224-226 and accompanying text.

\textsuperscript{247} The district court acknowledged as much, observing that Microsoft made it “significantly less convenient” for users to obtain and use Navigator, because “[o]nce Internet Explorer was seen as providing roughly the same browsing experience as Navigator, relatively few PC users showed any inclination to expend the effort required to obtain and install Navigator.” United States v. Microsoft Corp., 65 F. Supp. 2d 1, 89 (D.D.C. 1999). See generally Page & Lopatka, \textit{supra} note 10. This is not to say that convenient access was the only benefit from integration; Microsoft demonstrated that integrating IE into Windows provided several other consumer benefits.
if not most—consumers can be said to benefit from Microsoft’s provision of Web browsing functionality with its Windows operating system at no additional charge.”

Despite claims of immediate consumer harm, the inference is strong that the integration produced immediate consumer benefits, which should be sacrificed only if the prospect of long run benefits is compelling. Thus, the burden of showing a long-term effect on innovation should be high, and the record does not support an inference of such an effect on innovation from this practice. Bundling Windows and IE does not involve forcing for two reasons: first, the inclusion of IE in Windows does not physically exclude other browsers, and second, IE, and indeed all browsers, are free in all channels of distribution.

The fact that the design of Windows does not prevent consumers from installing a second, non-Microsoft browser means that the Windows/IE bundle does not physically force consumers to choose IE over another browser. If Windows were designed so that only IE would function on Windows, then consumers who wanted a browser would be effectively forced to choose IE. Such a design would be exclusionary even if IE were not bundled with Windows; consumers would only be able to use a browser by installing IE. But Windows is not so designed, and the inclusion of IE, whatever its degree of integration, does not impose any physical impediments to acquiring a second browser. Nor is the nature of the products such that they can be used only in fixed proportions. The government itself has recognized that many users have and use two different browsers for different purposes on the same computer.

The fact that IE is free means that the purchase of the Windows/IE bundle does not economically force consumers to use IE. Were the price of IE and other browsers positive, the Windows/IE bundle would compel consumers to pay for a browser along with Windows. That payment might satisfy the demand of at least some consumers for a browser, if they viewed IE as sufficient to their needs. The law of demand predicts that, having already paid for one browser, the consumer would be willing to pay less, even zero, for a second one, unless the second one had unique characteristics. But,

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249 Id. at 102 (“Many of [Microsoft’s] actions have harmed consumers in ways that are immediate and easily discernible.”).
250 Id. at 35. Indeed, the court held that offering IE free to Internet access providers was a predatory act. United States v. Microsoft Corp., 87 F. Supp. 2d 30, 41 (D.D.C. 2000).
251 The court suggested that consumers who preferred Navigator were injured because the presence of a second browser on the hard drive resulted in a waste of valuable space and needless confusion. Microsoft, 65 F. Supp. 2d at 41, 102. In light of the capacity of modern computer systems and assuming even minimal sophistication on the part of users, neither effect is significant.
253 See supra note 250.
254 E.g., Berkey Photo, Inc. v. Eastman Kodak Co., 603 F.2d 263, 270 (2d Cir. 1979): Before 1954, Kodak’s Color Print and Processing Laboratories (CP&P) had a nearly absolute monopoly of color photofinishing maintained by a variety of practices. Accounting for over 95% of color film sales, Kodak sold every roll with an
because browsers are free in every channel of distribution from every source, the inclusion of one browser does not affect the price consumers are willing to pay for the second browser; it remains zero. Consumers are able, so far as the cost of acquisition goes, to acquire the competing browser as they would have been had IE not been included.

Judge Jackson, however, rejected the assertion that because IE was free it was not a separate product. He reasoned that consumers "are forced to take, and pay for, the entire package of software[,] and . . . any value to be ascribed to Internet Explorer is built into this single price." Judge Jackson cited a treatise for the proposition that a tie is present "when a machine is sold or leased at a price that covers 'free' servicing." But this statement is only true if service is free solely in the specious sense that its price is included in a package. If service were truly free in all channels of distribution, the inclusion of free servicing in the price of a machine would not force consumers to use the defendant's service because they could just as easily choose another provider. This is the case with browsers: the court specifically found that IE was included in Windows at no additional charge and all browsers are really free. Because there is no increase in price when IE is included with Windows, and the product is free from other sources, consumers' demand for competing browsers is not satisfied by purchasing the package. They remain free to acquire Navigator by other means at the same cost they would have been required to pay had they not received IE with Windows.

It is true that consumers obtain the value of IE by paying a single price for Windows. But obtaining that value does not force consumers economically to use only IE. Judge Jackson appears to respond to this point with the following passage:

[The purpose of the Supreme Court's "forcing" inquiry is to expose those product bundles that raise the cost or difficulty of doing business for would-be competitors to prohibitively high levels, thereby depriving consumers of the opportunity to evaluate a competing product on its relative merits. It is not, as Microsoft suggests, simply to punish firms on the basis of an increment in price attributable to the tied product.]

Judge Jackson thus recognized that the inclusion of IE in Windows does not affect the price of Windows; it is simply the addition of value to the operating system. Nevertheless, he held the inclusion to be unlawful.

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256 Id. (quoting 3A Philip E. Areeda & Herbert Hovenkamp, Antitrust Law § 760b6, at 51 (1996)).
257 See supra note 254.
258 See supra note 250.
259 Microsoft, 87 F. Supp. 2d at 50.
260 Id.
It is true that an increment in price to consumers, in the sense of an increase in the total price of the package, is not the essence of tying. The essence of tying is forcing that inhibits competition on the merits. But an increment in price, in the sense of an increase in the price of the tied products by inclusion of the price of the tied product, is the very mechanism by which consumers' choice would be forced. In the absence of a price increase, consumers do not pay for a browser when they purchase Windows, so their freedom to choose another browser is unaffected.

There is, however, a sense in which Netscape is harmed by inclusion of IE in Windows. Judge Jackson found that “few new users (i.e., ones not merely upgrading from an old version of Navigator to a new one) had any incentive to install—much less download and install—software to replicate a function for which [original equipment manufacturers] and [Internet access providers] were already placing perfectly adequate browsing software at their disposal.” Providing IE free in this limited sense satisfies the demand for browsing software. Having gotten a perfectly adequate browser free, consumers would have less incentive to seek and acquire another. This inertia works against a competitor. But it is beyond all reason to characterize the inertia a free browser creates as “forcing” consumers.

The Supreme Court in Jefferson Parish characterized forcing as requiring consumers to take something they “might have preferred to purchase elsewhere on different terms.” Nothing involved in providing a free browser prevents consumers who prefer another browser from acquiring one. Only consumers who are indifferent among browsers or prefer IE will be influenced by inclusion of the free browser. As the Court emphasized in Jefferson Parish, consumers who are indifferent between suppliers are not forced to buy anything. The harm to competitors from this sort of inertia is the by-product of an unequivocal benefit to consumers—a free product provided to consumers who want it at zero search costs. Because consumers are being provided with something they would otherwise have had to acquire at some cost, by downloading or through an Internet access provider, competitors must now make it easier and more worthwhile for consumers who value their browsers only slightly more than IE to acquire their browsers. This effect has nothing to do with the bundling. Rather, it is the result of a zero price and

261 See supra note 245.
264 Id. at 27-28. The Court observed that, when products do not compete on price or quality because consumers are unable to evaluate their differences there is no forcing:

If consumers lack price consciousness, that fact will not force them to take an anesthesiologist whose services they do not want—their indifference to price will have no impact on their willingness or ability to go to another hospital where they can utilize the services of the anesthesiologist of their choice. Similarly, if consumers cannot evaluate the quality of anesthesiological services, it follows that they are indifferent between certified anesthesiologists even in the absence of a tying arrangement—such an arrangement cannot be said to have foreclosed a choice that would have otherwise been made on the merits.

Id. at 28.
costless provision of the product. Given that the court does not find the price itself predatory, it cannot be illegally exclusionary.265

Judge Jackson did point to other purported harms to consumers, not from the bundle itself, but from the fact that IE is bound by shackles to Windows.266 For example, he referred to consumer demand for a browserless version of Windows as a demand that Microsoft ignored for predatory reasons.267 There are, of course, features in any complex software that consume system resources but do not provide value to all consumers. But whatever inconvenience such consumers suffer has no antitrust significance.268 If consumers simply do not want those features, their inconvenience in accepting them does not foreclose any other supplier and thus has no competitive impact.

More important, whether consumers enjoyed benefits from not being given the option to acquire unbundled versions of Windows is less clear than that they derived gains from the integration itself. At a minimum, lack of an easy method to obtain an unbundled version of Windows caused no significant foreclosure injury. But in any event, we are unconvinced that the court or the government would have been satisfied had Microsoft offered consumers an unbundled version of Windows. The relative convenience of the bundled version still would have provided Microsoft with an advantage unavailable to Netscape; stripped to its essence, the case against Microsoft was based on the proposition that Microsoft and Netscape should have been on equal footing in promoting their browsers. Only then could there be competition on the merits, under the theory of the case.

Judge Jackson also noted that Microsoft denied original equipment manufacturers (“OEMs”) the ability to provide a browserless version of Windows or one with only Navigator.269 But interference with the preferences of OEMs is not equivalent to interference with consumer preferences. To say that OEMs can remove IE and other components of Windows is to say that

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265 The court found that Microsoft gave up substantial resources it could have made by selling IE, Microsoft, 65 F. Supp. 2d at 35, but it did not characterize this choice as predatory pricing.


267 Microsoft, 65 F. Supp. 2d at 102.

268 For consumers who want to use Navigator, the only plausible adverse effects of designing Windows so that IE cannot be easily uninstalled are that more system memory is allocated to browsers and that the desktop is cluttered by the inclusion of an unwanted icon. Given the capacity of modern computers and the size of the desktop, and assuming normal competence on the part of consumers, neither effect is significant. The court also found that Microsoft’s method of integrating IE into the operating system’s files caused the operating system to run more slowly. Microsoft, 65 F. Supp. 2d at 44. But the precise act found anticompetitive by the court was Microsoft’s refusal to include an easy method to uninstall IE, not the means by which the integration was accomplished. Id. at 46. The speed of the operating system after a prototype IE removal program was run improved only slightly. Id. Particularly in light of the ever increasing speed of modern computers, this difference is surely trivial. Finally, the court found that Microsoft’s integration exposes “those using Navigator on Windows 98 to security and privacy risks” and subjects them to unexpected invocation of IE, and even injures those who use IE by increasing the likelihood of a system crash and infection by viruses. Id. at 43-44. Even if these harms exist, however, they are not the result of any lessening in competition.

269 Id. at 102.
they can sell exclusive rights in the desktop.\textsuperscript{270} Even if the OEM market is competitive, OEMs may have incentives to sell a competing browser supplier the right to be the only browser on the desktop, even if consumers would prefer to have both browsers. This conclusion would be reinforced if, as the court presumably would require, Microsoft were precluded from compensating OEMs for leaving IE on the desktop. It is by no means clear that consumers would be better off if OEMs had this sort of power.

Quoting from Justice Steven's opinion in \textit{Jefferson Parish}, Judge Jackson stated that the "essential characteristic" of an illegal tying arrangement is a seller's decision to exploit its market power over the tying product "to force the buyer into the purchase of a tied product that the buyer either did not want at all, or might have preferred to purchase elsewhere on different terms."\textsuperscript{271} The court's use of this language suggests that buyers who did not want a browser at all would be harmed by receiving one. But in another passage of the \textit{Jefferson Parish} opinion, Justice Stevens recognized that "when a purchaser is 'forced' to buy a product he would not have otherwise bought even from another seller in the tied product market, there can be no adverse impact on competition because no portion of the market which would otherwise have been available to other sellers has been foreclosed."\textsuperscript{272} Forcing consumers who want no browser to take one anyway, even if the browser were not free, is of no competitive significance. These consumers did not want Netscape's browser either, and so they could not have contributed to any long-run evolution of that browser into a competing operating system.

The clearest effect of bundling is an immediate benefit to consumers. The only significant harms from the bundling were to an existing monopolist of browsing software, which was forced to reduce prices and improve its product, effects that provided corresponding benefits to consumers. Though the court does not quantify them, any immediate harms to consumers from bundling are trivial by comparison. We are thus left with a comparison between an immediate, significant consumer benefit and the court's speculation that, had Microsoft's competitors been properly nurtured, their products would, by innovation, have enhanced competition in the operating system market.\textsuperscript{273} In such a case, the claim of harm to innovation should be held to a very high standard of proof.

The court, however, found that the bundling was illegal because the motivation for it made no economic sense except as a means of maintaining monopoly power.\textsuperscript{274} This line of reasoning is quite similar to Baker's suggestion that actions that harm potential competitors are illegal unless they are supported by a legitimate business justification.\textsuperscript{275} But \textit{Microsoft} shows the difficulty with such an approach. First, it ignores the exigencies of competi-

\textsuperscript{270} \textit{See generally} Liebowitz \& Margolis, \textit{supra} note 164, at 260-63.
\textsuperscript{272} \textit{Jefferson Parish}, 466 U.S. at 16.
\textsuperscript{273} \textit{Microsoft}, 65 F. Supp. 2d. at 103.
\textsuperscript{274} \textit{Id.} at 37.
\textsuperscript{275} \textit{See supra} notes 22, 60 and accompanying text.
tion in winner-take-most markets in which it is essential to invest heavily to build user share. Internet firms routinely attract investors even though they have no profits and do not even project profits for years into the future. To speak of conventional business justifications in such an environment is meaningless.

More important, the Baker/Microsoft approach devalues consumer interests in an uncertain market. Where a practice provides immediate consumer benefits, even if there is no apparent gain to the dominant firm, courts should intervene only with caution. Thus, above-cost price-cutting with no purpose other than to drive out a competitor and reinforce monopoly power is per se lawful because its dominant effect is to benefit consumers. Such a categorical good should not be sacrificed for a speculative bad.

IV. Intel

In the Intel litigation, which ended in a consent decree, the FTC alleged that Intel used its monopoly power in general-purpose microprocessors to force several customers to grant Intel royalty-free licenses to microprocessor-related technology the customers owned. The complaint identified three instances in which the customer had asserted that an Intel product infringed its intellectual property rights. Intel responded by threatening to withhold or actually withholding proprietary technical information, which the FTC alleged was necessary for the profitable use of Intel products, unless

277 See Complaint ¶ 11, In re Intel Corp. (FTC June 8, 1998) (No. 9288) ("Intel Compl.").
278 Intel Compl. ¶¶ 18, 28, 34. The alleged victims of Intel's tactics were Digital Equipment Corp., Intel Compl. ¶ 15, Intergraph Corp., Intel Compl. ¶ 22, and Compaq Computer Corp., Intel Compl. ¶ 32. Intergraph, a manufacturer of computer workstations used in producing computer-aided graphics, brought a parallel private claim. Intergraph Corp. v. Intel Corp., 2 F. Supp. 2d 1255 (N.D. Ala. 1998). The Federal Circuit reversed a preliminary injunction entered in Intergraph's favor, holding that Intergraph was not a competitor of Intel and consequently any refusal to continue supplying Intergraph with important proprietary information and technical assistance could not reduce competition. Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1354 (Fed. Cir. 1999). The district court later dismissed all of Intergraph's antitrust claims on the merits. Intergraph Corp. v. Intel Corp. 88 F. Supp. 2d 1288, 1295 (N.D. Ala. 2000). But this disposition does not resolve the larger issue of a dominant firm's refusal to deal aimed at compelling surrender of competing intellectual property rights. The relevant market was microprocessors, and Intergraph claimed that it competed in this market by virtue of its patents on the Clipper technology, which it had purchased from another company. See Intergraph, 195 F.3d at 1350, 1355. But the court found that, several years before Intel cut off Intergraph's supply of special benefits, Intergraph had "abandoned the production of Clipper microprocessors . . . and states no intention to return to it." Id. at 1355.
279 Intel Compl. ¶¶ 21, 31, 37. Intel was not accused of terminating a customer's supply of microprocessors, but rather technical information, and in some cases advance chips, that was necessary for the customer to derive the full value of the microprocessors and therefore remain competitive in its output market. Id. ¶ 11. Still, the FTC asserted that "time to market is crucial" in this industry and that "the denial of advance product information is tantamount to a denial of actual parts, because an OEM customer lacking such information simply cannot design new computer systems on a competitive schedule with other OEMs." FTC, ANALYSIS OF PROPOSED CONSENT ORDER TO AID PUBLIC COMMENT (In re Intel Corp., No. 9288) (Mar. 17, 1999), available at http://www.ftc.gov/os/1999/9903/. Intel denied that the information (or advance
the customer, in effect, dropped its infringement claim by granting Intel a royalty-free license to use its intellectual property.\textsuperscript{280} According to the FTC, Intel coerced customers into relinquishing critical intellectual property rights in return for continued supplies of an essential input.\textsuperscript{281} Intel thereby further entrenched its monopoly power by diminishing the incentives of the three customers, and any other firm dependent on Intel that would observe the plight of the three, to develop innovations relating to microprocessor technology.\textsuperscript{282} If we assume that Intel had monopoly power\textsuperscript{283} and 35 U.S.C. § 271(d)(4) does not bar the FTC’s claim,\textsuperscript{284} the interesting issue is when, if ever, a dominant firm should be held to violate the antitrust laws by refusing to supply valuable intellectual property to a customer unless the customer abandons its infringement claim against the firm. We first consider the anticompetitive potential of the practice, then address the possible business justifications.

chips) was crucial to the profitable use of the microprocessors. See Brief for Intel Corp. at 11-12, In re Intel Corp. (FTC Feb. 25, 1999) (No. 9288). For purposes of our analysis, we accept the FTC’s allegation about the importance of the information withheld, though note that it is a critical part of the agency’s theory. Whether the input withheld was the microprocessors themselves or ancillary products and services that as a matter of commercial reality were necessary for the customer to be able to compete in the output market, the denial of that input would impose a serious cost on the customer. From the standpoint of the customer, the only difference is that the denial of the microprocessors themselves might impose a higher cost than the denial of the information, but the prospect of either might be equally effective in coercing the customer to surrender its intellectual property rights.

\textsuperscript{280} Intel Compl. ¶¶ 19, 29, 35. Intel also allegedly stopped supplying two of the victims—Digital Equipment Corp. and Intergraph—microprocessor prototypes, or advance chips. Id. ¶¶ 19, 29.

\textsuperscript{281} Intel Compl. ¶ 11.

\textsuperscript{282} The FTC alleged that Intel’s conduct reinforced Intel’s dominance in at least three separate ways. See FTC, supra note 279. One was the reduction in the incentives to innovate. The FTC also claimed that the conduct tended to give Intel preferential access to the technologies developed by many other firms in the industry, which gave Intel an advantage relative to competitors in the microprocessor market. Id. Finally, the FTC claimed that the conduct made it more difficult for OEMs to differentiate their computer systems from their competitors’, thereby making it more difficult for an OEM to serve as a platform for microprocessors that compete with Intel’s. Id. The theory of the last effect makes absolutely no sense. In any event, the claim that Intel’s conduct harms competition by reducing innovation is the critical one in the case, and it is the only one we address here.

\textsuperscript{283} Intel denied that it has monopoly power. Intel Answer ¶ 6, In re Intel Corp., (FTC July 13, 1998) (No. 9288).

\textsuperscript{284} Intel claimed that the patent law, as well as the copyright law, does confer antitrust protection. Brief for Intel Corp. at 49-56. As explained previously, we do not believe that § 271(d)(4) provides blanket antitrust immunity for conduct that can be described as a refusal to license. See supra notes 209-211 and accompanying text. This provision’s basic purpose seems to be to protect a patentee’s right to prevent licensees from competing with it by use of the patentee’s own patented property. The provision would even protect the patentee’s right to prevent use of its property when it is not itself participating in the relevant market. But the allegation here was that Intel threatened to deny customers its intellectual property in order to induce them not to compete using their own intellectual property. See McGowan, supra note 178, at 496-97 (arguing that the sort of coercive reciprocity alleged in Intel represents a departure from the “pure exclusion” that should be immune from antitrust attack).
A. A Showing of Competitive Harm

Under our approach, the plaintiff complaining about the kind of conduct attributed to Intel must articulate a credible theory of harm to competition and support it with some evidence. Like the theories of liability advanced by Professor Baker and the district court in Microsoft, the FTC's theory of liability rests on a presumption of consumer harm when a dominant firm hurts a rival. While consumer harm in such a situation is theoretically possible, there are also theoretical objections. Even setting aside those objections, the FTC's case fails for lack of essential evidence.

1. The Hold-Up Scenario

A simple hypothetical captures the essence of the FTC's theory. Suppose both parties agree that the infringement claimant has a one hundred percent probability of winning a judgment for $100,000. If the defendant terminates a supply relationship with the claimant and defends itself in the infringement action, it will have to pay the judgment, and it will incur modest additional costs totaling, say, $20,000, which reflect the direct costs of litigation, any loss associated with product-specific investments, and the slight cost of losing one customer in a competitive market, assuming the worst possible consequence for the customer of losing access to the valuable technical information. We can assume that the claimant would incur roughly comparable direct litigation costs, but termination would inflict a severe injury on it, totaling, say, $300,000, because it has no feasible alternative supplier and it cannot exit the market without cost. In this situation, the customer's vulnerability arises not simply because the customer commits to a supply relationship with a particular partner, but also because that partner is a monopolist.

The expected monetary value of the litigation for the defendant is $120,000 (the judgment and direct costs it must pay) and for the plaintiff is $200,000 (the judgment it will recover less the costs of termination). For sim-
plicity, assume that neither party would incur costs in settling the dispute. The cooperative surplus, or the total amount that would be saved by avoiding trial, is $320,000.\textsuperscript{289} If the parties agree to divide the surplus equally, the defendant would pay the claimant nothing in a settlement. Instead, the plaintiff will simply forgo its meritorious infringement action, and the defendant will thus appropriate the plaintiff's intellectual property in return for a continuous supply of inputs.\textsuperscript{290}

In general, whenever the full expected costs of litigating a claim are higher for one party than for the other, the party in the advantageous position may have an opportunity to extract a favorable settlement. This condition implies a hold-up scenario. Here, the opportunity for a hold-up arises because the costs of pursuing the infringement claim are asymmetrical and fall disproportionately on the claimant. The danger to efficiency is that firms dependent on the monopolist will have reduced incentives to innovate because the full rewards for their investments in innovative activity will be insecure. Consumers suffer when disadvantaged rivals as well as any potential competitors chilled by the prospect of hold up refrain from innovating.

2. \textit{Theoretical Difficulties}

The use of hold-up as a viable anticompetitive strategy is a controversial idea, so there is reason to view the FTC's story skeptically. While its theory of consumer injury seems coherent, the predicted result is by no means certain to occur.

First, it is not clear that increasing the number of firms engaged in research will increase innovation. Research and development may proceed most efficiently when undertaken as a coordinated effort by a single firm. Economics knows too little about the optimal industry structure for innovation to reach the FTC's conclusion with any confidence.\textsuperscript{291} Nevertheless, it is certainly possible that the FTC's premise is correct, and the antitrust laws in any event may embody a legislative judgment that competition to innovate will benefit consumers.

Second, the FTC's case fails to distinguish between different forms of innovation and the attendant incentives they create for market actors. Innovation by a microprocessor customer might create a wholly noninfringing, substitute microprocessor, or it might create an improvement to Intel's technology. In the latter case, the intellectual property of Intel and its customer are complementary inputs that they can combine to produce a more valuable

\textsuperscript{289} In the language of game theory, the claimant's threat value is -$200,000, which is the expected net monetary value of pursuing its claim. The defendant's threat value is -$120,000. The noncooperative value of the game, which is the sum of the threat values, is -$320,000.

\textsuperscript{290} Technically, under these assumptions, the settlement due the claimant would equal the claimant's threat value plus half of the cooperative surplus. That amount would be -$200,000 + $160,000, or -$40,000. But obviously, the claimant would not pay the defendant $40,000 to resolve the dispute. The claimant would simply avoid the dispute by not suing for infringement.

\textsuperscript{291} See, e.g., Picker, \textit{supra} note 211, at 172 (noting that it is next to impossible to assess whether we as a society are doing the right level of research); Posner, \textit{supra} note 28, at 939.
product than either could produce separately. If the patents protect the intellectual property involved, the patents would be termed blocking.  

The focus of the FTC's case on complementary innovation raises theoretical concerns. The loss of either substitute or complementary innovation injures consumers, but the analytical implications are critically different. Intel would be hurt by development of a substitute but could well benefit by development of a complement. Ideally, Intel would want to thwart substitute innovations but encourage complementary innovations, at least when other firms can innovate more efficiently than it can, and garner the maximum share of the incremental profits associated with the resulting product improvements. This difference in incentives suggests that Intel's apparent holdups involving complementary innovations may well have had more complex goals than would first appear and might actually benefit consumers.

Although the FTC undoubtedly wanted to prevent Intel from suppressing the development of substitute microprocessors, its case apparently was based on the suppression of complementary innovation. When complementary inputs are owned by separate monopolists, a double-marginalization, or successive monopoly, problem arises. Each firm will set a royalty for its input at a monopoly level, taking the other input's monopoly royalty as a given. The result is that deadweight loss is greater and total industry profits are lower than would be the case if a single monopolist owned both inputs. As Randal Picker points out, the royalty-free licenses that Intel was attempting to obtain from its complaining customers would have had the effect of eliminating double-marginalization, a result that promised to benefit consumers.

Such licenses are equivalent to integration of the two input owners for

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293 In each of the instances outlined in the complaint, an Intel microprocessor allegedly infringed another firm's patents, but there was no claim that the microprocessor did not also embody valid patents owned by Intel. It is true that Intergraph allegedly owned the rights to a competing, substitute technology. See Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1350 (Fed. Cir. 1999). But Intergraph had abandoned the technology, and there was no allegation that any firm wanted to resurrect it. Certainly Intergraph had no intention to return to it. See id. at 1355.


295 See Picker, supra note 211, at 178-80. In the context of this case, it was important only that Intel obtain a royalty-free license to use the other firm's patent. No one expected the other firm to receive a royalty-free license to use Intel's intellectual property, then market competing microprocessors. Picker talks about the case as involving royalty-free cross-licensing, e.g., id. at 159, 178, but this is misleading. It is true that Intel was apparently offering licenses to use proprietary technical information and advance chips at no positive price in exchange for the other firm's royalty-free license. But clearly what Intel was offering would not have been enough to allow any of these firms to market noninfringing microprocessors, and it did not mean that the firm could make microprocessors for its own use and pay Intel no royalties. There is good reason for this. The basic, or dominant, patents owned by Intel were undeniably valid. To the extent that these patents conferred monopoly power, and the FTC implicitly concedes that Intel legitimately acquired monopoly power through its patents, Intel would expect a monopoly profit. The complementary innovation owned by the other firm would have improved Intel's product, thereby increasing the available monopoly profit. Intel would have insisted at a minimum on the monopoly profit associated with its unimproved product. That would be Intel's
these purposes. Picker criticizes the FTC for giving too little weight to the benefits of royalty-free licenses. He argues that Intel's conduct increased the likelihood that Intel would obtain royalty-free licenses, and so that conduct, by eliminating double-marginalization, would have improved consumer welfare in a static sense. Strictly from this perspective, the FTC harmed consumers by restraining Intel's ability to withhold intellectual property as a method of coercing firms to grant royalty-free licenses.

Picker's argument contains a questionable assumption. It depends on the premise that Intel was less likely to obtain royalty-free licenses if it could not threaten to withhold its own intellectual property. In fact, while the division of surplus produced by a royalty-free license to use the complementary invention is likely to differ depending on Intel's ability to withhold its intellectual property, it is not at all clear that the parties would be less likely to strike a bargain. The complementary patent increases the value of Intel's own dominant patents, and the royalty-free license increases the total monopoly profits available from the improved product. Integration that eliminates successive monopolies, other things equal, increases total industry profits. This condition does not, of course, guarantee that bargaining will result in mutually beneficial licenses, even if both parties can withhold their rights. But denying the ability to withhold does not foreclose an agreement. If Intel could not buy a royalty-free license by supplying proprietary information that it would otherwise withhold, Intel could buy it in other ways, such as by charging a lower royalty rate on microprocessors.

The FTC's focus on complementary innovation raises other theoretical problems. First, hold-up stories are often criticized for failing to take due account of the injury a firm suffers by developing a reputation as a bandit and thus deterring firms from dealing with it over the long run. When the threat value, or the position it would have been in absent cooperation. The dispute with the other firm would revolve around the division of the surplus profit created by the improvement and the elimination of double-marginalization.

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296 Id. at 178.
297 Id. at 180-81.
298 Id. at 178.
299 Id. at 181 ("There is every reason to think that it would be more difficult for Intel to get access to the patents of others if it lacked the power to withhold its own intellectual property.").
300 The situation alleged does not appear to be one in which no product could be produced without both firms' intellectual property. The allegation seems to be that earlier generations of Intel microprocessors were not infringing and conferred monopoly power. Therefore, Intel could make a microprocessor without the use of the other firm's intellectual property, albeit an inferior one. For this reason, Intel's patents can fairly be described as dominant.
301 See BLAIR & KASSERMAN, supra note 294, at 34-35.
302 See generally Merges & Nelson, supra note 179.
303 Picker alludes to the "unexamined question of the relative importance for a licensor of cash returns versus the in-kind returns that are obtained from cross-licenses." Picker, supra note 211, at 159. Though efficiency may be affected differently by the two kinds of payment, there is no obvious reason to believe that the probability of cooperation is less if the payment by Intel takes the form of a royalty rate reduction than the provision of in-kind services.
304 See, e.g., R.H. Coase, The Nature of the Firm: Origin, Meaning, Influence, 4 J.L. ECON. & ORG. 3, 44 (1988) ("[T]he propensity for opportunistic behavior is usually effectively checked by the need to take account of the effect of the firm's actions on future business."). The reputational harm suffered by the predator is part of a broader objection, namely that the full costs to
victim selects a supplier in a competitive market and becomes vulnerable by making relationship-specific investments, post-hoc exploitation creates the obvious risk for the supplier that customers in the future will choose other suppliers. In Intel, of course, Intel allegedly did not have to worry about losing customers to competing suppliers because it supposedly had a monopoly, but it would still be concerned about its perception among customers. Intel might not mind developing a reputation for stealing substitute innovations, the development of which it would like to deter. It does not, however, want to deter the development of complementary innovations, which increase the value of its own property, and so it should fear developing a reputation for extorting this kind of intellectual property. And recall that the FTC’s case seems to revolve around just such complementary intellectual property. Intel cannot systematically usurp the entire surplus generated by complementary innovations without suppressing their development. Rather, Intel has the delicate task of allowing the producer of complementary intellectual property to receive just enough of the surplus to stimulate optimal innovation but no more. It is unclear whether the facts of the case are consistent with such a goal.

Second, the FTC’s theory of anticompetitive effect depends on Intel’s use of postcontractual hold up. But that story is less persuasive if Intel could have reached the same objectives as easily at the contracting stage. Though the customer allegedly could not opt for an alternative supplier, it was not obligated to enter the industry. Suppose, then, that Intel insisted on a term in all of its supply contracts that gave it a royalty-free license to any microprocessor-related intellectual property owned by the customer. From Intel’s perspective, such a clause might have the undesirable effect of deterring complementary innovation, for the customer would be giving up a right to share in the resulting surplus. Intel presumably would like to draft a con-

the predator of engaging in hold up are not taken into account by those who claim that hold up is a rational anticompetitive strategy. Here, one might argue that supplying technical information to customers returned benefits to Intel, as well as to the customers. Indeed, Intel admitted that both parties to the transaction benefit, asserting that Intel expects valuable feedback from OEMs that receive the information and advance microprocessors. See Brief for Intel Corp. § III.C., In re Intel Corp. (FTC Feb. 25, 1999) (No. 9288). But Intel also admitted that it would not lose any valuable feedback by refusing to supply technical information to those who had filed infringement actions against it because these firms are hostile toward Intel. Id. 306 See Intel Compl. ¶ 6.
307 See supra note 293 and accompanying text.
309 Again, the absence of an alternative supplier was an implication of Intel’s alleged monopoly. See Intel Compl. ¶ 6.
tract that specified a reduction in the royalty paid by the customer for microprocessors in exchange for a royalty-free license to use the customer's intellectual property. This kind of contract would enable Intel to offer ex ante a split of the surplus calibrated to the value of the innovation. But it would seem difficult to draft such a contract before the innovation occurs.\textsuperscript{310}

In addition, if the potential customer knows it has valuable intellectual property and Intel does not, it will refuse to enter into a contract that grants Intel a royalty-free license without consideration.\textsuperscript{311} Instead, it might choose to pursue the development of a substitute microprocessor, whether the potential customer had by then developed merely complementary intellectual property or an unperfected substitute. This reaction is exactly wrong from Intel's perspective. A better strategy for the monopolist is to share its profits with its most likely potential rivals in order to reduce their incentive to develop competing products.\textsuperscript{312}

Third, hold-up stories tend to collapse if they do not account for methods by which victims can protect themselves. Intel presumably could not extort intellectual property from an entrenched customer by threatening to raise the royalty for its microprocessors because the contract almost certainly will guarantee the customer a price and quantity.\textsuperscript{313} But then why could not the customer similarly protect itself from in-kind exploitation by insisting on a contractual right to technical information and advance chips? The FTC seems to assume that OEMs lack the knowledge or sophistication necessary to protect themselves from post-contractual opportunism, which is a weak foundation for antitrust policy.

Still, one can imagine reasons why customers might be systematically vulnerable. Maybe it is unreasonable to expect a customer to anticipate the need for protection when it has no inkling that it will develop valuable intellectual property during the contract term. Maybe the FTC believes that Intel, by virtue of its dominance, will be able to refuse a demand for such protection. Maybe it would be difficult to write an enforceable contract that prevents Intel from withholding intellectual property in response to a con-

\textsuperscript{310} This is not to say that the task is impossible. Commercial entities are often ingenious at allocating risks contractually, but no solution is self-evident here.

\textsuperscript{311} Picker, supra note 211, at 189.

\textsuperscript{312} See id. at 186; Nancy T. Gallini, Deterrence by Market Sharing: A Strategic Incentive for Licensing, 74 AM. ECON. REV. 931, 936 (1984) (demonstrating that an incumbent might share the available rents with an entrant to reduce the entrant's incentive for further research).

\textsuperscript{313} We surmise that optimal investments by an OEM specific to a particular microprocessor technology generally require a relatively long-term relationship between the OEM and the microprocessor supplier. We would therefore expect contracts of substantial duration in this industry.

\textsuperscript{314} Indeed, Intergraph alleged that it did have a contractual right to receive the technical information withheld, but the court of appeals rejected the claim. See Intergraph Corp. v. Intel Corp., 195 F.3d 1346, 1366 (Fed. Cir. 1999). Intel provided the information at issue under agreements that recited, "'[n]either party has any obligation to disclose Confidential Information to the other,'" both parties may "'cease giving Confidential Information to the other party without liability,'" and "'either party can 'terminate this Agreement at any time without cause upon notice to the other party' with return of the confidential information." Id. at 1364 (quoting a 1994 nondisclosure agreement). The court found that Intel had not modified these rights and obligations in a subsequent letter. Id. at 1366.
flicting intellectual property right claim while preserving the flexibility to withhold intellectual property for other reasons. Maybe firms likely to develop intellectual property will be reluctant to signal that fact by demanding contractual protection from in-kind exploitation, for fear that Intel would refuse to enter into a supply relationship with them; indeed, we explain below that owners of complementary intellectual property may have a strong incentive to hide their status. This assumes that Intel, instead of trying to co-opt its strongest potential rivals, would prefer to have nothing to do with them; this, too, may be a rational anticompetitive strategy. This also assumes that the refusal to initiate a supply relationship with a potential competitor is not itself an antitrust violation, but it is doubtful that either the FTC or an antitrust court would recognize an obligation to begin to deal.\textsuperscript{315} None of these explanations is compelling, but perhaps there is something to them.

Finally, Intel has a strong interest in promoting competition in OEM markets, so it would not necessarily be indifferent to the demise of a customer. Intel certainly has an interest in encouraging innovations in OEM technology that is not physically embodied in microprocessors. This technology relates to Intel's microprocessors as a complementary product, and thus these innovations stand to benefit Intel. But because Intel has not integrated into OEM markets,\textsuperscript{316} there is no opportunity to eliminate double-marginalization through a royalty-free license.

Despite some misgivings, we therefore conclude that the FTC satisfied its burden of articulating a theory under which a monopolist's refusal to continue supplying important intellectual property unless the customer grants a royalty-free license to its own intellectual property could injure consumers by suppressing innovation. Though the monopolist has reason to encourage the development of complementary innovations, the effective reward it offers when it can threaten to withhold its own intellectual property may result in a lower rate of innovation than is socially desirable. In a nutshell, the monopolist may use its right to withhold the intellectual property to obtain a larger share of the surplus from the innovation than it otherwise would. As a result, this distributional effect may adversely affect dynamic efficiency by reducing incentives to innovate. Finally, we assume that potential victims of hold-up could not or would not protect themselves contractually.

3. Evidentiary Failures

Theoretical possibility does not, however, prove consumer harm. For example, the claimant in the hold-up example above will pursue its infringement action if its expected recovery exceeds the cost of termination.\textsuperscript{317} It will not be deterred. Further, consumers will not suffer unless the misappropriation has a market-wide impact on competitive innovation, not simply an im-

\textsuperscript{315} In Intergraph's action, the district court held that Intel violated the antitrust laws by enforcing its contractual right to terminate the supply of confidential information to Intergraph, but the appellate court reversed. \textit{Intergraph}, 195 F.3d at 1364-65.

\textsuperscript{316} Although the district court in \textit{Intergraph} found that Intel planned to enter the workstation market as an OEM, there was no evidence that it had entered the market. \textit{See id.} at 1354, 1355, 1360.

\textsuperscript{317} \textit{See supra} notes 287-290 and accompanying text.
pact on one of the many equally well-situated innovators. The more often a monopolist threatens to withhold intellectual property, the more likely the adverse effect on the market in innovation. Repetition implies that more firms are direct victims and that other potential rivals will find the threat more believable. Nevertheless, a market-wide impact is not inevitable, for the conduct may affect only an insignificant proportion of the firms engaged in research and development. The plaintiff should be required to come forward with some evidence, first, that firms dependent on the monopolist were actually deterred from pursuing competitive innovation, and second, that the market in innovation was likely to suffer. These requirements are important given the tenuous nature of the anticompetitive theory in Intel.

One firm, Intergraph, had abandoned the technology that it claimed Intel's microprocessors infringed before Intel made any threat to restrict a supply relationship.\(^{318}\) Evidently, Intel did not deter Intergraph from competing through innovation. Compaq, another of the alleged victims of Intel's tactics, apparently did not compete with Intel in the development and sale of microprocessors during the relevant period.\(^{319}\) Furthermore, the FTC offered no other example of a firm actually deterred; rather, it relied upon a theoretical prediction that Intel's conduct was bound to have such an effect eventually.\(^{320}\)

Moreover, Intel offered strong evidence that its conduct did not in fact deter anyone from pursuing a course of innovation.\(^{321}\) Digital, the only one of the three alleged victims that was engaged in the design and development of general-purpose microprocessors at the relevant time, did not alter its efforts as a result of Intel's conduct.\(^{322}\) Under the FTC's theory, of course, it would not be sufficient to show that the research activities of the three firms threatened by Intel were unaffected. Rather, any firm dependent on Intel's products that was aware of the conduct could be deterred.\(^{323}\) Intel, therefore, surveyed the universe of known microprocessor innovators, some fifteen other firms, and offered evidence that Intel's conduct had not deterred any of them.\(^{324}\) Even if the evidence had indicated that a firm was chilled by Intel's behavior, the requisite prediction of harm to competition would likely be un-

\(^{318}\) Intergraph, 195 F.3d at 1355.

\(^{319}\) Brief for Intel Corp. at 10, In re Intel Corp. (FTC Feb 25, 1999) (No. 9288) (stating that the government's economic expert conceded that Compaq and Intergraph did not compete with Intel).

\(^{320}\) The FTC complaint counsel's expert economics witness, F.M. Scherer, opined that the consequences of Intel's conduct were likely "to unravel over a period of probably ten or so years, and it's just too early to assess those consequences." Id. at 30 (quoting deposition transcript).

\(^{321}\) See Id. at 10-19.

\(^{322}\) According to Intel, the chairman of Digital testified that the "company did not cancel, curtail, delay, defer, scale back, reduce, or otherwise limit any research and development related to microprocessors as a result of Intel's conduct." Id. at 12.

\(^{323}\) See Intel Compl. ¶ 14.

\(^{324}\) Brief for Intel Corp. at 13-14, In re Intel Corp. (FTC Feb 25, 1999) (No. 9288). Of course, this does not comprise the universe of firms that may be dependent on Intel products. For example, in theory, the FTC could assert that a dependent firm would have entered the field of microprocessor innovation but for the specter of Intel's strong-arm tactics. Given the evidence that sixteen actual competitors were not deterred, however, it is inconceivable that the
warranted. In a market of seventeen actual competitors, an adverse effect on one would not imply probable consumer harm unless that firm was somehow uniquely situated. To be successful, a plaintiff would have to offer evidence that Intel had deterred an appreciable number of competitors.

In our view, therefore, the FTC's complaint counsel failed to meet its burden of adducing evidence to support its theory of competitive harm. The case should have failed at that point. Intel should certainly have been allowed to offer evidence of the absence of competitive harm, as it did, though such a showing was probably unnecessary in light of the deficiency in the plaintiff's case.

B. Business Justifications

Proof of a business justification was unnecessary in Intel because the FTC failed to make a prima facie case. But it is important for our purposes to explore what that justification might be because the showing of potential competitive harm might be made in another case. Intel suggested a business justification that is a mirror image of the FTC's theory of anticompetitive hold-up: Intel must be able to withhold its intellectual property to prevent infringement claimants from holding it up because of the unrecoverable investments it has made in bringing the allegedly infringing microprocessor to market.\(^2\)

To understand Intel's argument, change the numbers in the earlier hypothetical.\(^3\) Suppose the plaintiff has a claim for $100,000 in damages that both parties believe has a ten percent chance of succeeding. The expected monetary value of a damage award is $10,000. Suppose that the plaintiff expects to incur unrecouped costs of $9,000 in litigating the claim, so that the expected net value of the litigation to it is $1,000. The defendant, however, expects to incur litigation costs of $100,000 if the claim proceeds. Though the direct costs of litigation for the parties are still assumed to be roughly comparable, the full expected litigation costs are dramatically asymmetrical because the defendant has made disproportionately large product-specific investments.\(^4\) The normal remedy in an infringement action includes an injunction barring future infringement.\(^5\) The defendant faces a ten percent...
chance of losing far more if the court enjoins it from selling its products than the plaintiff stands to lose if the claim fails. The expected net value of the claim to such a defendant is $110,000. Again assuming zero settlement costs, the cooperative surplus is $109,000. The parties could be expected to settle the claim by dividing the surplus, perhaps on a fifty-fifty basis. In that case, the defendant would pay the plaintiff $55,500. The plaintiff is better off by $54,500 than it would have been had it litigated the claim, and the defendant is better off by $54,500.

In this scenario, the plaintiff earns $55,500 on a claim that both parties agree had an expected monetary value of only $10,000. This logic implies that a plaintiff may profit from bringing a claim even when the claim has a negative expected monetary value, such as one that would cost the plaintiff more to litigate than the expected value of the recovery. Indeed, if the pendency of the litigation prevented the defendant from ever recouping product-specific investments, the plaintiff could exact a favorable settlement even if the parties agreed that the claim had a zero percent chance of success.

These circumstances may give rise to a business justification for a refusal to deal. This kind of hold-up distorts the monopolist’s incentives by encouraging it, first, to reduce technology-specific investments in developing and marketing its products and, second, to increase spending on otherwise unnecessary measures to protect against exploitation. The monopolist might therefore be justified in threatening to terminate an important supply relationship with the claimant if the claimant pursues its claim. Assume that termination would impose a cost of $91,000, reducing the expected monetary value of the claim to the plaintiff to -$90,000. Because the value of the claim to the defendant is still -$110,000, the parties’ cooperative surplus is $200,000. If they divide the surplus equally, the defendant will settle the patent claim for $10,000. In these circumstances, the mutual hold-up results in the claimant receiving the expected monetary value of the judgment. As a general matter, if the full expected costs of continued litigation are perfectly symmetrical and the other simplifying assumptions used above are made, the settlement amount will always equal the expected monetary value of the judgment.

The claim that a monopolist must be free to stop supplying intellectual property as a defense to hold up has its own weaknesses. A technologically complex product may use hundreds of patents, and it may arguably infringe hundreds of other patents held by a host of individuals some of whose identities are not even known. Indeed, some of these individuals may have purchased their patent rights solely in order to bring infringement actions against

to deny the patentee’s right to exclude others from use of his property . . . . It is the general rule that an injunction will issue when infringement has been adjudged, absent a sound reason for denying it.

\[329\] In these circumstances, the plaintiff’s threat value is $1,000, the defendant’s threat value is -$110,000, and the noncooperative value of the game is -$109,000.

\[330\] An equal division of the surplus is a conventional assumption in bargaining models, but the point of the example is unaffected if other divisions are assumed.

\[331\] A nuisance suit can be defined as one in which the plaintiff’s expected monetary value of trial is nonpositive. See, e.g., ROBERT COOTER & THOMAS ULEN, LAW & ECONOMICS 403 (3d ed. 2000). The example above demonstrates that nuisance suits can be rational in the context of intellectual property infringement actions.
the dominant firm. By developing its product, the dominant firm must cross a patent minefield. The transaction costs of resolving all potential intellectual property disputes before development are prohibitive, but cutting off the supply of technical information can at best only have a coercive effect on those infringement claimants that are Intel licensees. As to these firms, Intel potentially could have demanded a term in the original licensing contracts granting Intel a royalty-free license to use their property, thereby protecting itself from hold-up. If it did not do so, perhaps it ought not be shielded from antitrust charges based on the unilateral refusal to continue to supply the relevant input. The ability of customers and the ability of the monopolist to protect themselves from hold-up contractually seem roughly symmetrical.

The justification, however, is more substantial than it might first appear. First, at least in Intergraph's case, Intel claimed that it did acquire just such a royalty-free license in its contract to use any intellectual property owned by Intergraph that was infringed by its microprocessors, though a district court rejected the assertion. The fact that the scope of the cross-licensing provision was seriously disputed may suggest that these contractual provisions are more difficult to draft than one might think. Further, even if Intel secured such a contractual right, the FTC might claim that insisting on the provision is itself anticompetitive. After all, in the agency's view, the chief harm presented by the termination of a supply relationship in response to an infringement claim is the potential reduction in the incentives to innovate. The cross-licensing provision arguably has the same effect, even if such agreements are common in high-tech industries. Moreover, Intel may be reluctant to insist on such a term generally for fear that it would encourage rivals to develop competing microprocessors. That is not much of an excuse in an antitrust context, but it would be a stretch to say that the reason for not seeking a contractual right to a royalty-free license initially is illegitimate.

Despite our reservations, we assume that an intellectual property monopolist's refusal to deal with an infringement claimant may represent either an inefficient hold-up or an efficient response to an attempted hold-up. One way to address this dilemma is to permit the monopolist to restrict or sever its relationship with the claimant in all circumstances but include the damages caused by termination in a successful claimant's infringement recovery. The recovery would then equal infringement damages plus termination damages. This resolution would tend to make the net expected costs of pursuing the litigation symmetrical and thereby lessen the monopolist's ability to hold

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334 Intel Compl. ¶ 14.

335 See generally Picker, supra note 211, at 188 (observing that royalty-free licenses between trading partners are "the order of the day in the high-tech business").
up the claimant by threatening to terminate a critical supply relationship. Indeed, the defendant's full litigation costs may then exceed the claimant's expected net litigation costs to the extent that the defendant incurs some cost in refusing to supply the claimant. But such a remedy is probably not available under intellectual property law. Further, the remedy could leave the claimant vulnerable to the extent that it cannot expect to recover fully compensatory damages caused by termination.

Another response is to prevent the defendant from terminating the supply relationship with the claimant, and also prohibit the claimant from pursuing injunctive relief for infringement. This resolution is essentially what Intel agreed to accept in the FTC's case against it: Intel may not restrict a supply relationship with a customer claiming infringement so long as the claimant agrees to forgo injunctive relief in its case. The logic behind this approach is that it prevents the supplier from holding up the customer, but only if the customer severely curtails its ability to hold up the supplier. Recall that the supplier can be held up only if it incurs disproportionately large indirect costs as a result of the infringement action, and these costs are primarily a product of the claimant's ability to render the monopolist's product-specific investments valueless by having future infringement enjoined. Thus, the net expected monetary value of pursuing the infringement claim when the monopolist cannot sever the supply relationship and the claimant cannot procure an injunction will tend to be symmetrical between the parties. Under the assumptions used above, the monopolist and the claimant will settle the infringement claim for approximately its expected monetary value.

Although the FTC and Intel reached an imaginative resolution of their dispute, that settlement does not resolve the status of a retaliatory termination of a supply relationship as a business justification in antitrust litigation.

336 In general, a patentee is entitled to damages for past infringement measured either by the lost profits attributable to the infringement or a court-determined reasonable royalty. A court may treble damages if it finds that the defendant's infringement was willful or deliberate. 35 U.S.C. § 284 (1994). See generally ALAN L. DURHAM, PATENT LAW ESSENTIALS 161-64 (1999); MICHAEL A. EPSHTN, EPSHTN ON INTELLECTUAL PROPERTY § 5.04[E][2]-[3] (4th ed. 1999). Neither measure would include profits lost by the claimant, not because of the infringement, but because of the inability to obtain a supply of the infringer's products. Similarly, a copyright holder may recover statutory damages or "the actual damages suffered by him or her as a result of the infringement, and any profits of the infringer that are attributable to the infringement and are not taken into account in computing the actual damages." 17 U.S.C. § 504(b) (1994). See generally 4 MELVILLE B. NIMMER & DAVID NIMMER, NIMMER ON COPYRIGHT § 14.01 (2000). Again, the measures would not appear to include termination damages.


338 The FTC and Intel apparently envision that a claimant successful at trial would recover damages for past infringement. A claimant could not recover the present value of future infringement damages because the damages could not be calculated with acceptable precision. The claimant would, however, have the right to return to court and recover any damages sustained since the last award. In reality, the parties would be expected to settle the dispute after the resolution of the merits. The greatest obstacle to settlement of any claim is the relative optimism about the probability and magnitude of recovery. Once a court has ruled in the claimant's favor, both parties will assume that a subsequent action would have virtually a one hundred percent chance of success, and the method of calculating damages will have been decided. At that point, settlement is all but assured.
Suppose the monopolist in fact cuts off a claimant that is suing for an injunction. May it assert the hold-up rationale as a justification? We are inclined to treat the defense skeptically because, like the FTC's theory of liability, it rests on an unwarranted generalization from a merely plausible scenario. We are not confident that efficient instances can be isolated, and we expect that the harm from erroneous rejection of the defense will do minimal harm.

Under our approach, the justification would become relevant only after the plaintiff has established the defendant's market power and likely competitive harm. The terminated firm must be one of only a few firms equally well-situated to develop a competing technology because otherwise, any cost imposed on it will have no market-wide effect on innovation. The firm must be near the stage at which its innovation can be marketed, because otherwise the claim of consumer injury is fatally speculative. But the firm cannot in fact have finished developing the technology, because otherwise, the defendant will likely lack the power to induce the firm to relent. Finally, there can be no good alternative suppliers of the necessary input, or again, the defendant will lack market power.

Many refusal-to-deal cases are likely to founder at this stage. If the plaintiff satisfies the necessary elements though, and the defendant wants to assert the hold-up justification, we would require a persuasive showing that tends to exclude the possibility of inefficient hold-up. The analysis above suggests that the defendant would have to demonstrate that its product-specific investments substantially exceed the plaintiff’s expected litigation costs. An unexplained delay by the plaintiff in asserting its infringement claim, for example, might suggest a plan to hold up the defendant. In the usual case, presumably a firm's investments in its products will increase over time. A claimant bent on hold-up has an incentive to increase its likely payoff by lying in wait while the defendant's investments mount. The doctrine of laches should deter such opportunistic behavior to some extent because its application would reduce the claimant’s recovery. Because proving that the claimant unreasonably and inexcusably delayed in filing suit is likely to be difficult, however, the claimant might be willing to run the risk. We doubt that the monopolist could show a hold-up scheme in many cases, but the showing may be possible in some.

339 Indeed, under the consent decree, Intel is free to cut-off a customer that refuses to forgo a request for injunctive relief in an infringement action, see supra note 337 and accompanying text, and presumably that customer could allege in a private action that the termination violates the antitrust law.

340 The equitable principle of laches applies in both patent and copyright infringement actions to bar recovery of damages incurred before trial in limited circumstances. E.g., A.C. Aukerman Co. v. R. L. Chaides Constr. Co., 960 F.2d 1020, 1032 (Fed. Cir. 1992) (en banc) (patent); Roulo v. Russ Berrie & Co., 886 F.2d 931, 942 (7th Cir. 1989) (copyright). See generally Durham, supra note 336, at 169; 3 Nimmer, supra note 336, at §12.06; Epstein, supra note 336, at §§ 4.02[C][4], 5.04[D][4].

341 See Aukerman, 960 F.2d at 1032 (holding that laches in a patent case requires unreasonable and inexcusable delay); MacLean Assocs., Inc. v. Wm. M. Mercer-Meidinger-Hansen, Inc., 952 F.2d 769, 780 (3d Cir. 1991) (holding that laches in a copyright infringement case requires a showing that the plaintiff “engaged in unreasonable and inexcusable delay that prejudiced the defendant”).
This hold-up justification, in any event, assumes that the monopolist acts in response to an infringement claim. It would not comfortably apply if the monopolist used the threat of termination to deter a potential rival from developing competing intellectual property, claiming that the rival, if successful, would ultimately try to hold up the monopolist. For example, Microsoft was accused of threatening to impair access to its products by vertically-related firms or otherwise impose burdensome conditions on them if they pursued plans to develop competing products. The monopolist could not justify such conduct as a response to potential hold-up because the threat to the monopolist would likely be far too remote to be cognizable.

A more general business justification for refusing to supply essential intellectual property concerns the risk of misappropriation by the recipient. The monopolist may fear that a recipient will use its intellectual property to develop a competing product. The monopolist will be able to prohibit such misuse contractually because voluntary disclosure implies a contractual relationship between the two parties. But breach of the contract may be difficult to prove, especially given the intangible nature of the subject matter. The cost to the monopolist of cutting off the culprit may be less than the cost of litigating a contract claim. In these circumstances, the refusal to deal with the firm, whether it takes the form of a termination of an existing relationship or the refusal to enter into a relationship, is in effect a more efficient method of securing property interests than is contract law. The fact that the monopolist selectively cuts off a customer that is in the process of developing a competing product, instead of customers that are not, does not suggest an anticompetitive intent but supports the justification.

In our view, the theory behind this justification is sound, but again we are skeptical about its application in litigation. The danger is that the defense will be used as a pretext in cases where the monopolist is merely attempting to stifle legitimate competition. A monopolist could demonstrate a well-founded fear of misappropriation despite the ability to resort to contract law. For instance, the justification would have merit if in prior litigation the terminated firm had been found liable for breach of contract by misusing intellectual property, or the monopolist might prove that contractual security is peculiarly ineffective in a particular case. We would accept the justification when the monopolist demonstrates that termination was a more efficient method of intellectual property protection than was contract law, but we are not sanguine that the showing could often be made. In any event, the de-

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343 Intel suggests this justification as well. See Brief for Intel Corp. § III.C, In re Intel Corp. (FTC Feb. 25, 1999) (No. 9288).

344 For example, the consent order in Intel permits Intel to restrict the use of its technical information “to the customer’s design and development of computer systems that incorporate the microprocessor to which the [technical] information pertains.” Agreement Containing Consent Order ¶ II.B.5, In re Intel Corp. (FTC Mar. 17, 1999) (No. 9288), available at http://www.ftc.gov/os/1999/9903/. Apparently, the point of this provision is to recognize Intel’s right to try to prevent its intellectual property from being misappropriated for use in potentially competing products.
fense will not be relevant unless the elements of probable consumer harm have been established.

Both of the business justifications described above could be characterized as methods of self-help by which the monopolist attempts to maintain and appropriate the value of its intellectual property. The consumer benefits are not immediate, however, as they are when Microsoft integrates a browser into its operating system. Therefore, the comparison between possible consumer harm and possible consumer benefit is less clear. On the one hand, if rivals are deterred from innovating because of the possibility of hold-up, consumers may be injured by virtue of forgone innovation. On the other hand, if the monopolist’s conduct serves to protect the value of its intellectual property from hold-up, consumers may benefit as a result of increased innovative activity both by the monopolist and any other firm that may find itself in a similar situation. These cases cannot be resolved by resort to the simple rule that immediate consumer benefits create a strong presumption of legality when consumer harm is only a distant possibility. Rather, if the termination occurs under conditions in which competitive harm is possible, a conclusion has to be reached based on the relative strength of the competing stories.

Other long-standing per se rules have been challenged on the grounds that they inhibit necessary self-help. For example, the per se illegality of vertical territorial restraints was overruled in part because manufacturers have a legitimate interest in controlling free riding by their distributors, conduct that could in principle be controlled by detailed, legally enforceable contractual requirements of point-of-sale services. The need to resort to self-help in defense of legal attacks on intellectual property, however, has no precise counterpart in tangible property. An infringement claim implies that every unit of the product sold by the defendant misappropriates the claimant’s property, a condition that is inconceivable when the claimant alleges that the defendant stole its tangible property. Further, a monopolist may be unaware that its product allegedly infringes another’s intellectual property rights until a claim is made against it, whereas rights in tangible property are far clearer. This distinction is important because it is the unpredictability of the infringement claim that renders the monopolist susceptible to hold-up. Finally, a monopolist may face claims from multiple intellectual property claimants, whereas it is fanciful to imagine a monopolist stealing the tangible property of numerous firms.

The self-help rationale failed in Fashion Originators’ Guild of America v. Federal Trade Commission (“FOGA”). The Court there condemned a boycott by dress manufacturers intended to squeeze from the market rivals that had pirated dress designs that were arguably protected by state tort law. The Court characterized Fashion Originators’ Guild of America as an extra-governmental agency, suggesting only intra-governmental efforts to

345 Supra Part III.
347 Fashion Originators’ Guild of America v. FTC, 312 U.S. 457 (1941).
348 Id. at 461, 468.
349 Id. at 465.
protect intellectual property were legitimate. But it may be that the per se condemnation of the boycott in *FOGA* depended upon the fact that the case involved an agreement among competitors, which is more likely to result in an abuse of power than is a vertical agreement. A self-help claim is more likely to provide a justification for unilateral action, particularly in the context of an effort to resolve intellectual property suits.

### Conclusion

Innovation is essential to economic efficiency in the modern economy. In recent years, antitrust scholars and the enforcement agencies have suggested that innovation is so important that courts should apply special rules to limit practices of dominant firms that might inhibit innovation. But in framing antitrust rules, the importance of protecting innovation from monopolistic practices must be weighed against the equivalent danger of deterring procompetitive conduct. Dominant firms benefit consumers by competing aggressively and by seeking out the most advantageous outlets and sources of supply. Any truncated standards of liability raise the danger of unduly restricting the ability of dominant firms to innovate or respond to competitive challenges. Consequently, we argue that claims of harm to innovation should meet the same criteria as other claims of monopolization. We would require any claim of harm to innovation to be justified by credible theory and evidence, particularly when the dominant firm’s actions provide immediate benefit to consumers.

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350 See *NYNEX Corp. v. Discon, Inc.*, 525 U.S. 128, 135, 137 (1998) (noting that *FOGA* involved an agreement among competitors and that vertical transactions are less competitively dangerous).