

Buying Monopoly: Antitrust Limits on Damages for Externally Acquired Patents

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The “monopoly” authorized by the Patent Act refers to the exclusionary power of individual patents. That is not the same thing as the acquisition of individual patent rights into portfolios that dominate a market, something that the Patent Act never justifies and that the antitrust laws rightfully prohibit.

Most patent assignments are procompetitive and serve to promote the efficient commercialization of patented inventions. However, patent acquisitions may also be used to combine substitute patents from external patentees, giving the acquirer an unearned monopoly position in the relevant technology market. A producer requires only one of the substitutes, but by acquiring the combination it can impede product market rivals by limiting their access to important technological inputs. Similarly, a patent assertion entity (PAE) may acquire substitute patents to eliminate inter-licensor competition, enabling it to charge supra-competitive license fees, much like a

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merger or cartel. For example, by acquiring two or more substitute patents that collectively dominate a market a PAE can effectively monopolize the technology for that market. Such anticompetitive practices are regularly condemned in conventional product contexts, but the courts have not yet applied the same antitrust logic to patent markets. And they passively encourage anticompetitive patent acquisitions by awarding large damages when such patents are infringed.

We propose that infringement damages for an externally acquired patent be denied if the acquisition served materially to expand or perpetuate the plaintiff's dominant position in the relevant technology market. By weakening enforcement, this limits the patent holder's ability to use such acquisitions to anticompetitive ends. We do not suggest that a dominant patent holder should be prohibited from securing external patent rights in the relevant technology market, but simply that its acquisition be limited to a nonexclusive license. This will permit the acquirer to practice the patent and keep its own technology up to date, but will not enable it to restrict third party access. This is as valuable to patent policy as it is to antitrust, for it will tend to increase innovation by discouraging systematic monopoly in technology markets.

I. Introduction

Patent alienability¹ plays an important role in facilitating the efficient commercialization of patented inventions. The firm best suited to commercialize a given patent may not be the original patentee. However, while patent alienability is generally good, it can be abused. For example, virtually everyone agrees that ownership interests in a firm should be alienable, but under certain circumstances the sale of a firm to a competitor may undermine competition and injure consumers. Anticompetitive acquisitions are therefore prohibited by the antitrust laws.² Patent assignments may also be used to anticompetitive ends. In particular, they may be used to aggregate substitute patents from external sources, giving the acquirer an unearned monopoly position in the relevant technology market.³ Patents are “assets” for purposes of the antitrust laws, and thus can be made subject to the Clayton Act’s provision against anticompetitive mergers.⁴ To date, however, no court has applied the antitrust laws to the types of transactions we discuss.

Patent acquisitions by a dominant patent holder⁵ may facilitate two kinds of anticompetitive activity. First, if the acquirer is also a producer, then it may use such acquisitions to impede its product market rivals by restricting their access to important technological inputs. In this case the acquisition is aimed at exclusion in the product market. Second, a non-practicing entity (NPE⁶) may acquire a dominant position in a technology market in order to eliminate competition between licensors, allowing it to charge supra-competitive license fees. Given the limited ability of NPEs to obtain injunctions⁷ the goal is presumably not to prevent someone else from acquiring patent rights, but rather to make them pay an excessive price for the privilege. In this way, it is essentially identical to a traditional anticompetitive merger or cartel agreement.

We propose that infringement damages for an externally acquired patent should be denied if the acquisition serves materially to expand or perpetuate the plaintiff’s

¹ 35 U.S.C. § 261 (2016) (patents “shall be assignable in law by an instrument in writing”).

² 15 U.S.C. § 18 (2016) (prohibiting acquisitions of “the whole or any part of the stock or other share capital” or “the whole or any part of the assets of” another firm when the result is “substantially to lessen competition, or to tend to create a monopoly”). See generally 4 & 4A PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 900–90 (4th ed. 2016) (generally discussing mergers).

³ By “technology market” (or “patent market”) we refer to a market for the rights to technologies performing a particular kind of function, e.g., alternative methods for making solar panels. Thus, as with any market, the “goods” that comprise this market are substitutes, although not necessarily perfect substitutes.

⁴ 5 AREEDA & HOVENKAMP, *supra* note 2, at ¶ 1202f3.

⁵ By “dominant patent holder” we mean a firm which controls the rights to a significant fraction of available technologies performing a particular kind of function, i.e., it has a dominant position in the relevant technology market.

⁶ An NPE is a firm that owns and enforces patents but does not actually produce anything that reads on them. Such firms are alternatively referred to as “patent assertion entities” or, more pejoratively, as “patent trolls.”

⁷ See *infra* note 68 and accompanying text.

dominant position in the relevant technology market. Patent acquisitions are generally addressed under the antitrust laws, although patent law could achieve similar results by making anticompetitive acquisition operate as a defense to an infringement action. By preventing firms from monetizing anticompetitively acquired patents, the law could discourage them from entering into such transactions in the first place. The proposed limits do not prevent a dominant patent holder from obtaining external patent rights in the relevant technology market, but merely prevents it from acquiring more than a nonexclusive license. Nonexclusive licenses permit the dominant firm to acquire all it needs to keep its own technology up to date, but not the right to exclude others.

This proposal limits a firm's ability to use patent assignments to achieve monopoly in technology markets. Without any limitations on patent alienability, firms will tend to allocate patents in whatever way maximizes total profits of all firms in the relevant technology space. This will typically involve allocating patents to achieve monopoly, or at least to make the technology market noncompetitive, because competition erodes profits. This is not the only important benefit, however. Modern economic research on innovation suggests that innovation is maximized when a market is relatively competitive, not monopolized.⁸ This implies that the proposed limits on enforcement would promote innovation, and are therefore as important to patent law's objectives as they are to antitrust law's objectives.

Limiting infringement damages is an effective and convenient way to apply the antitrust laws to anticompetitive patent acquisitions. As we develop later, the costs of such enforcement could also be considerably less than antitrust enforcement, in at least some cases.⁹ Clayton Act enforcement attaches to the acquisition itself, and many NPEs acquire portfolios of thousands of patents, many of which have never been evaluated in an infringement action. Simply determining whether they operate as substitutes could be an extraordinarily expensive undertaking, and probably unnecessary given that many of these patents will never be asserted. By contrast, the infringement action necessarily involves a small subset of patents, and claim construction is necessary in any event. At that time, determining whether the infringement plaintiff has anticompetitively assembled a dominant position in substitute technologies adds relatively little cost. An accused infringer could either assert a defense directly under the Patent Act, or else assert an antitrust counterclaim for monopolization or attempt to monopolize under § 2 of the Sherman Act.¹⁰

Under this approach, patents obtained through anticompetitive assignments are essentially rendered benign, because their new owners cannot profitably enforce them. This makes the "shadow of litigation" largely unthreatening to prospective

⁸ See *infra* Part V.

⁹ See discussion *infra* Part IV.

¹⁰ 15 U.S.C. § 2 (2016).

users, and thus the prospect of enforcement cannot be used to exclude rivals or charge supra-competitive license fees.

A. Patents and Antitrust: Common Concerns but Distinct Approaches

Patent enforcement mechanisms are mainly private. Remedies include both damages and private injunctive relief.¹¹ Such actions are essential to patent law's overall goal of promoting innovation and the efficient commercialization of patented technologies. So they are not "private" at all in the sense that their purpose is simply to transfer wealth from one person to another, or to provide compensation for past harms. Rather, patent damages should give the patentee the correct set of incentives to innovate by deterring infringers. Antitrust damages actions serve a similar purpose within antitrust's domain.

Nevertheless, private enforcement is even more central to the patent system than to antitrust. Antitrust laws are enforced by a mixture of public and private enforcement actions.¹² Although private plaintiffs file more cases, many of the most important cases, including all criminal cases and virtually all merger cases, are brought by government agencies.¹³ Patent law's overwhelming private enforcement structure places a premium on identifying and maintaining the appropriate linkage between the goals of patent law and the remedies that shape private enforcement and licensing incentives. A well-designed system for issuing patents with the goal of facilitating innovation and efficient licensing can be undermined by a misguided, remedial system.

Although antitrust and patent law are both concerned with economic welfare and growth, they take different approaches to certain fundamental economic issues, such as market structure and strategic behavior. Antitrust law is highly sensitive to questions about market structure (the organization and competitiveness of markets), firm mobility, and information flow. Antitrust's "per se" rule, which condemns a set of antitrust practices without significant inquiry into market issues, occupies an ever-shrinking domain within antitrust law.¹⁴ Under the rule of reason that governs most antitrust claims, including those at issue here, questions concerning the structure and operations of markets are decisive.¹⁵ This is true for virtually all joint ventures, single-

¹¹ 35 U.S.C. § 283 (2016); *id.* § 284 (2016).

¹² 15 U.S.C. § 2 (2016) (permitting criminal sanctions); *id.* § 15 (2016) (permitting private civil suits); *id.* § 15a (2016) (permitting public, federal suits); *id.* § 15c (2016) (permitting *parens patriae* suits); *id.* § 26 (2016) (permitting private injunctive relief).

¹³ Bill Baer, Ass't Att'y Gen., Antitrust Div., U.S. Dept. of Justice, Remarks Delivered to European Competition Forum: Public and Private Antitrust Enforcement in the United States, at 5, 7, 10 (Feb. 11, 2014) (transcript available at <http://www.justice.gov/atr/public/speeches/303686.pdf>).

¹⁴ See Herbert Hovenkamp, *The Rule of Reason and the Scope of the Patent*, 52 SAN DIEGO L. REV. 515, 516–17 (2015).

¹⁵ *Id.* at 516; on the relevance of structure in horizontal merger cases, see Herbert Hovenkamp & Carl Shapiro, *Horizontal Mergers, Market Structure, and Burdens of Proof*, YALE L.J. (forthcoming 2018) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3046224).

firm monopolization, vertical restrictions, and mergers. One cannot determine illegality without analyzing the market, the way that firms, products, and information move within it, and how the challenged restraint affects that movement.

In sharp contrast, patent law is largely indifferent to structural issues, almost never asking these questions when adjudicating disputes. Even questions about market structure that are directly related to how innovations are incentivized or disseminated are largely ignored.¹⁶ Indeed, the only reference to market power in the Patent Act is a negative one. Section 271(d)(5) of the Patent Act permits patent tying arrangements except in circumstances where the patentee holds market power in the tying patent or patented product.¹⁷

Patent law also takes little to no account of strategic or “monopolistic” behavior, including such things as dominant firms that exclude rivals by buying up patents in their domain.¹⁸ In other words, patent law largely proceeds as if markets do not matter and is largely indifferent to the question of whether strategic behavior is harmful or beneficial. Indeed, courts often decline even to acknowledge “patent markets”—the medium through which related patents are assigned, licensed, or enforced—as a relevant market for antitrust purposes.¹⁹

Today most economists agree that relatively competitive markets are more conducive to innovation than monopolized markets.²⁰ The relationship between innovation and market structure is commonly characterized as an inverted U, with most innovation done by firms in moderately competitive markets, and less done by either perfect competitors or absolute monopolists²¹ Furthermore, much of the recent empirical work on the subject suggests that this inverted U curve is lopsided toward the competitive side, at least up to a point, suggesting more innovation as markets are more competitive.²² The curve reflects that both monopoly and perfect competition have problems that undermine innovation: a monopolist has ample means to invest in

¹⁶ See Herbert Hovenkamp, *Antitrust and the Patent System: A Reexamination*, 76 OHIO ST. L.J. 467, 503–04 (2015).

¹⁷ See 35 U.S.C. § 271(d)(5) (2016):

No patent owner False . . shall be deemed guilty of misuse or illegal extension of the patent right by reason of his having False . . (5) conditioned the license of any rights to the patent or the sale of the patented product or the acquisition of a license to rights in another patent or purchase of a separate product, unless, in view of the circumstances, the patent owner has market power in the relevant market for the patent or patented product on which the license or sale is conditioned.

¹⁸ See *infra* text accompanying notes 89–91.

¹⁹ See, e.g., *Intellectual Ventures I LLC v. Capital One Fin. Corp.*, No. 1:13–cv–00740, 2013 WL 6682981, at *9 (E.D. Va. Dec. 18, 2013) (rejecting the possibility that Intellectual Ventures’ patent portfolio provided a dominant position in a “relevant market”).

²⁰ Philippe Aghion et al., *Competition and Innovation: An Inverted-U Relationship*, 120 Q.J. ECON. 701, 701 (2005); see *infra* text accompanying notes 133–35.

²¹ Herbert Hovenkamp, *Intellectual Property and Competition*, in RESEARCH HANDBOOK ON THE ECONOMICS OF INTELLECTUAL PROPERTY 2 (Peter Menell et al. eds., 2015), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2569129.

²² *Id.*

innovation, but the absence of competition diminishes its incentive to do so.²³ By contrast, a perfectly competitive firm is highly motivated to innovate and thereby distinguish itself from competitors, but it lacks the resources to make significant investments in R&D.²⁴

Unlike patent law, antitrust law attempts to manage competition and innovation issues simultaneously, knowing that they are interlinked and one cannot be controlled without affecting the other. For example, anticompetitive restraints on innovation can be just as unlawful as anticompetitive restraints on product competition—even more to the extent that innovation contributes more to economic growth than does increased competition under constant technology.²⁵ The Government’s Merger Guidelines recognize that mergers should be prohibited if they reduce innovation incentives.²⁶ On the other side, antitrust policy is highly tolerant of true innovation even if it is achieved through monopoly. For example, the courts more or less consistently hold that innovation itself can never be attacked as an antitrust violation, even if it transforms the innovator into a dominant firm.²⁷ Acting under the rule of reason, antitrust law is also highly sensitive to both the significant benefits and competitive threats that can result from collaborative innovation, pooling or other sharing of IP rights, and standard setting.²⁸ In short, built into antitrust is a set of tools that permit courts simultaneously to address the costs and benefits to innovation and competition in specific settings.

Another difference between patent law and antitrust law lies in the way that courts are forced to confront fundamental policy issues. In patent cases, the lower courts apply the statute, but they rarely address directly the question of whether a particular practice promotes innovation. Patent law has no equivalent to the “antitrust injury” doctrine in antitrust law, which is entirely judge made.²⁹ Under that doctrine a court must dig below the surface when assessing a private claim for antitrust damages in order to confirm that the request for damages is consistent with antitrust’s goals.³⁰ Its main message is that even if an alleged harm flows from an antitrust

²³ Aghion et al., *supra* note 20, at 702.

²⁴ *Id.*

²⁵ *E.g.*, *Allied Tube & Conduit Corp. v. Indian Head, Inc.*, 486 U.S. 492, 510 (1988) (condemning restraint intended to exclude innovative product from market); see Herbert Hovenkamp, *Restraints on Innovation*, 29 CARDOZO L. REV. 247, 253–54 (2007).

²⁶ U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, HORIZONTAL MERGER GUIDELINES §§ 6, 6.4, 10 (2010). See also Deborah L. Feinstein, Dir., Bureau of Competition, Fed. Trade Comm’n, Speech at Advanced Antitrust U.S.: The Forward-Looking Nature of Merger Analysis (Feb. 6, 2014) (transcript available at https://www.ftc.gov/system/files/documents/public_statements/forward-looking-nature-merger-analysis/140206mergeranalysis-dlf.pdf).

²⁷ *E.g.*, *Allied Orthopedic Appliances Inc. v. Tyco Health Care Grp. LP*, 592 F.3d 991, 998 (9th Cir. 2010).

²⁸ See generally 13 HERBERT HOVENKAMP, ANTITRUST LAW ¶¶ 2230–35 (3d ed. 2012) (discussing the making and enforcement of industry standards).

²⁹ See, e.g., Jonathan M. Jacobson & Tracy Greer, *Twenty-one Years of Antitrust Injury: Down the Alley with Brunswick v. Pueblo Bowl-O-Mat*, 66 ANTITRUST L.J. 273, 273 (1998).

³⁰ See, e.g., *id.* at 281, 285–86.

violation, no antitrust damages will be available if the rationale for recovery is inimical to the goals of antitrust policy.³¹

The “antitrust injury” doctrine originated with Justice Thurgood Marshall’s opinion in the *Brunswick* case, which was a private challenge to a merger.³² Brunswick, a large supplier of equipment to bowling allies, operated a program under which it acquired and rehabilitated failing alleys that owed it money.³³ Brunswick purchased one of the two operating bowling alleys in Pueblo Colorado, as well as other alleys in other cities.³⁴ These were vertical mergers because of Brunswick’s supplier relationship with the alleys.³⁵ Some of them were also horizontal mergers to the extent that Brunswick already owned alleys in the area of an acquired alley.³⁶ The district court had found that at least some of the mergers were unlawful and awarded significant damages.³⁷

The private challenger in *Brunswick* was an acquired alley’s rival who claimed that, as a result of the acquisition, Brunswick rehabilitated its languishing competitor, forcing the plaintiff to compete with a much more robust firm than before.³⁸ In sum, whether or not the merger was unlawful, the plaintiff was complaining about more rather than less competition in the market.³⁹ Justice Marshall wrote for the Court that in order to recover the plaintiffs

“must prove more than injury causally linked to an illegal presence in the market. Plaintiffs must prove antitrust injury, which is to say injury of the type the antitrust laws were intended to prevent and that flows from that which makes defendants’ acts unlawful. The injury should reflect the anticompetitive effect either of the violation or of anticompetitive acts made possible by the violation. It should, in short, be “the type of loss that the claimed violations. . . would be likely to cause.”⁴⁰

The *Brunswick* message is that one seeking damages in an antitrust case⁴¹ must show not merely a violation and injury, but also that the injury is consistent with the underlying goals of the antitrust laws to promote competition. This reflects that most antitrust doctrines are directed at protection of consumers, not firms.⁴² Thus, if an

³¹ See, e.g., *id.*

³² *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 489 (1977).

³³ *Id.* at 479–80.

³⁴ *Id.* at 480.

³⁵ A vertical merger is one between a purchaser and a seller, such as when a manufacturer acquires a dealership or retailer.

³⁶ A horizontal merger is one between competitors.

³⁷ *Treadway Cos. v. Brunswick Corp.*, 364 F. Supp. 316, 318–19 (D.N.J. 1973). The Ninth Circuit vacated the judgment on remedies, but agreed with the district court on the mergers’ illegality. 523 F.2d 262, 273 (3d Cir. 1975).

³⁸ *Brunswick Corp. v. Pueblo Bowl-O-Mat, Inc.*, 429 U.S. 477, 479–81 (1977).

³⁹ *Id.* at 488.

⁴⁰ *Id.* 489 (emphasis added) (quoting *Zenith Radio Corp. v. Hazeltine Res.*, 395 U.S. 100, 125 (1969)).

⁴¹ The doctrine was later extended to injunctions: *Cargill, Inc. v. Monfort of Colorado, Inc.*, 479 U.S. 104, 126 (1986).

⁴² E.g., *Jacobson & Greer*, *supra* note 29, at 286.

alleged antitrust violation injures a rival firm in a way that is unrelated to its potential injury to competition, or if it is not sufficiently clear that consumers are likely to be injured at all, then the rival will generally be precluded from recovering damages.

The antitrust injury doctrine cannot be defended as an exercise in statutory interpretation. Just like the Patent Act damages provision, the antitrust provision is very broad, giving damages to any person injured in his business or property by an antitrust violation.⁴³ Also like the patent damages provision, the antitrust statute makes no mention of principles of equity or other factors that may entitle a judge to reduce or reject damages once the violation and injury have been established. This is in sharp contrast to the injunction provisions in both statutes, which qualify entitlement to relief according to general equitable principles.⁴⁴ For example, acting under the Patent Act provision the Supreme Court held in *eBay* that entitlement to an injunction was not automatic, but must be governed by equitable principles.⁴⁵ In sum, the injunction provisions in both statutes permit judges to “make policy” in deciding whether to grant an injunction by weighing factors that reach beyond the plaintiff’s harm. In both cases the damages provisions contain no such authorization.

To be sure, there may be structural reasons that account for the Supreme Court’s willingness to recognize such a judge-made departure from statutory language in antitrust law but not patent law. The Patent Act is a detailed code, which is frequently amended,⁴⁶ inducing judges to stick more-or-less closely to its provisions. By contrast, the antitrust laws are relatively spare and amended less often. This has served to make judges much more comfortable about fashioning antitrust doctrine that is not called for by the statutory text.⁴⁷ For example, neither the per se rule nor antitrust’s rule of reason is specified in the antitrust statutes.

But this difference is readily exaggerated. Patent law has its own judge-made rules that strongly limit entitlement to damages. For example, the “first sale,” or patent exhaustion, doctrine is well over a century old and in patent law is entirely

⁴³ 15 U.S.C. § 15 (2016) (“[A] . . . ny person who shall be injured in his business or property by reason of anything forbidden in the antitrust law may sue therefor and shall recover threefold the damages by him sustained False”).

⁴⁴ In antitrust, 15 U.S.C. § 26 (2016) (There is a private right to injunction “when and under the same conditions and principles as injunctive relief is granted by the courts of equity, under the rules governing such proceedings False”); in patent law, 35 U.S.C. § 283 (2016) (Courts “may grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable.”).

⁴⁵ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 390 (2006).

⁴⁶ John C. Stolpa, Case Comment, *Toward Aligning the Law with Biology? The Federal Circuit’s About Face in Anzo Biochem, Inc. v. Gen-Probe, Inc.*, 4 MINN. INTELL. PROP. REV. 339, 346 (2003).

⁴⁷ See, e.g., *Nat’l Soc. Of Prof’l Eng’rs v. U.S.*, 435 U.S. 679, 688 (1978).

judge made,⁴⁸ although it is statutory in copyright.⁴⁹ Under the doctrine, someone who purchases a patented good takes it free of any patent law restrictions placed on that good, thereby providing a complete defense to an action for infringement based on violation of the restriction.⁵⁰ By the same token, the exclusion of “laws of nature, natural phenomena, and abstract ideas” are recognized by the Supreme Court as an “implicit exception” to the Patent Act, which nowhere mentions them.⁵¹

Similarly, a rule that the Supreme Court recently affirmed in the *Kimble* decision prohibits the assessment of royalties based on use after a patent has expired.⁵² Since the Patent Act says nothing about the duration of royalty provisions in license agreements, the rule is entirely judge made and provides a complete defense to an action seeking to enforce royalties that accrue after patent expiration.⁵³ For that reason the three dissenters protested that “nothing in the text of the Act even arguably forbids licensing agreements that provide for post-expiration royalties.”⁵⁴ Indeed, the entire judge-made law of patent “misuse” was not statutory, and was intended to condemn patent restrictions that reached “beyond the scope” of the patent.⁵⁵ In sum, while the Supreme Court may not have been as aggressive about grafting doctrine onto the Patent Act as it has done for the antitrust laws, judge-made policy limitations on the ability to collect patent damages are hardly a rarity.

B. Patent Damages vs. Patent Policy

The antitrust injury doctrine has given antitrust law something that patent law lacks, which is a mechanism for confronting the monster head on—asking whether recovery in a particular case is consistent with the purposes of the statute, or is simply based on raw faith that anything that infringes a patent must harm innovation, or perhaps worse yet, that once infringement is found it does not matter.

In fact, the idea that recovery for infringement is sometimes at odds with patent policy is not entirely unprecedented. The so-called “reverse doctrine of equivalents”

⁴⁸ E.g., Herbert Hovenkamp, Post-sale Restraints and Competitive Harm: The First Sale Doctrine in Perspective, 66 N.Y.U. ANN. SURV. AM. L. 487, 491 (2011); see also Herbert Hovenkamp, *Reasonable Patent Exhaustion*, YALE J. REG. (forthcoming 2018) (available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2995751).

⁴⁹ 17 U.S.C. § 109(a) (2016); see *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S.Ct. 1351, 1355 (2013).

⁵⁰ E.g., *Adams v. Burke*, 84 U.S. 453, 459 (1873) (refusing to enforce territorial restriction on use of a patented coffin lid after it had been sold); *Quanta Computer, Inc. v. LG Elecs., Inc.*, 553 U.S. 617, 621 (2008) (adhering to first sale doctrine and refusing to enforce quasi-exclusive dealing).

⁵¹ *Alice Corp. Pty. Ltd. v. CLS Bank Int'l*, 134 S.Ct. 2347, 2354 (2014).

⁵² *Kimble v. Marvel Entm't, LLC*, 135 S.Ct. 2401, 2406 (2015) (adhering on grounds of *stare decisis* to rule originally adopted in *Brulotte v. Thys Co.*, 379 U.S. 29, 30 (1964)).

⁵³ *Id.*

⁵⁴ *Id.* at 2415 (Alito, J., dissenting.). See Herbert Hovenkamp, *Brulotte's Web*, 11 J. COMP. L. & ECON. 527, 531 (2015).

⁵⁵ E.g., *Morton Salt Co. v. G. S. Suppiger Co.*, 314 U.S. 488, 493 (1942) (refusing to enforce patent tie via infringement action). See generally, Herbert Hovenkamp, *The Rule of Reason and the Scope of the Patent*, 52 SAN DIEGO L. REV. 515, 515 (2015).

eliminates liability for a literal infringement in situations where the infringing technology is so much cleverer than the plaintiff's embodiment as to make infringement liability inequitable.⁵⁶ Under this doctrine, the courts rely on principles of equity to deny recovery notwithstanding that the defendant's device reads on valid claims in the plaintiff's patent.⁵⁷ The logic is simply that it would run contrary to patent policy to impose liability on a defendant whose device, while literally infringing, nevertheless constitutes a substantial innovation. To punish these innovators would undermine the patent system's principal ambition. Our proposals rest on a similar proposition, namely that the courts ought not issue damages that passively reward patent holders for conduct that is likely to retard innovation or unreasonably limit access to patented technologies.

Without proposing anything so broad as a general "patent injury" or "innovation injury" doctrine for patent damages, the balance of this essay makes narrower proposals that are consistent with the current text of the Patent Act and that could be used to make patent enforcement actions more consistent with the underlying goals of the patent laws to promote innovation. We focus mainly on enforcement of patents that were not developed by their current enforcers but rather were acquired by assignment or license. Thus, the relevant innovation incentives belong in the first instance not to the plaintiffs, but to their assignors.

Further, this inquiry is not limited to practices that also violate the antitrust laws. An antitrust violation could certainly suffice to undermine a patent damages claim based on the same conduct, but that decision would result from application of the antitrust laws. In fact, one of the most severe criticisms of the patent "misuse" doctrine was that at some level it sought to apply antitrust principles but in fact often found misuse when there was no antitrust violation.⁵⁸ Patent law may have its own reasons for denying or limiting patent damages even when no antitrust violation has been proven.⁵⁹

Nevertheless, finding an antitrust violation can operate as an important policy lever and can affect entitlement to patent damages. Any patent practice that is expressly authorized by the Patent Act is immune from antitrust scrutiny, provided that the challenged practice stays within the scope of the authorization. For example, the

⁵⁶ See, e.g., *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608–09 (1950) (“[W]here a device is so far changed in principle from a patented article that it performs the same or a similar function in a substantially different way, but nevertheless falls within the literal words of the claim, the doctrine of equivalents may be used to restrict the claim and defeat the patentee’s action for infringement.”).

⁵⁷ *Scripps Clinic & Research Found. v. Genentech, Inc.*, 927 F.2d 1565, 1581 (Fed. Cir. 1991) (“The so-called “reverse doctrine of equivalents” is an equitable doctrine” used to “prevent unwarranted extension of the claims beyond a fair scope of the patentee’s invention . . .”).

⁵⁸ See Christina Bohannon, *IP Misuse as Foreclosure*, 96 IOWA L. REV. 475, 492–93 (2011).

⁵⁹ Cf. *Assessment Tech. of WI, LLC v. WIREdata, Inc.*, 350 F.3d 640, 647 (7th Cir. 2003) (finding practice to be close to copyright misuse and denying enforcement, even though it did not violate antitrust law).

Patent Act expressly authorizes infringement actions⁶⁰ and domestic exclusive territorial licenses,⁶¹ and provides that patent tying is lawful unless the patentee has market power in the patent upon which the tie is conditioned.⁶² By contrast, the Patent Act does not authorize price fixing or resale price maintenance of patented products, field-of-use restrictions, exclusive dealing in patented products, pay-for-delay settlements, or infringement actions based on patents that the plaintiff knows or should know to be unenforceable.

Justice Breyer noted the importance of statutory authorization in the Supreme Court's 2013 *Actavis* decision, observing repeatedly that a payment to another firm to stay out of the patentee's market for a specified period was not authorized anywhere in the Patent Act.⁶³ Although the Patent Act expressly authorizes licenses,⁶⁴ a payment to someone not to produce is not a "license," and no other language in the Patent Act served to immunize such agreements from antitrust scrutiny. A rule such as this one is particularly appropriate when a statute is amended frequently, as the Patent Act is.⁶⁵ If Congress objects to the Supreme Court's refusal to declare a particular immunity because it is not expressly authorized by the Patent Act, it can add authorizing language any time it pleases—including language that would authorize pay-for-delay pharmaceutical settlements. That is precisely what it did in 1988, when it added language that made patent ties lawful unless the patentee had market power in the tying product.⁶⁶

Second, an important principle of statutory interpretation that applies to the relationship between any body of law and federal antitrust law is that general authorizing language does not serve to immunize particular anticompetitive instances of that authorization. For example, all corporations are statutorily authorized to make contracts,⁶⁷ but that does not create an antitrust immunity for anticompetitive contracts such as price fixing agreements. And while corporation law expressly permits corporations to acquire the stock or assets of other corporations,⁶⁸ this authorization does not apply to anticompetitive acquisitions, and thus does not create an immunity from the antitrust laws.⁶⁹ For that reason, although patents are expressly assignable by

⁶⁰ 35 U.S.C. § 271(a) (2016); *id.* § 281 (2016) (recognizing infringement action); *id.* § 283 (2016) (permitting injunction, consistent with principles of equity); *id.* § 284 (2016) (damages).

⁶¹ 35 U.S.C. § 261 (2016).

⁶² 35 U.S.C. § 271(d)(5) (2016).

⁶³ *See* *FTC v. Actavis, Inc.*, 133 S. Ct. 2223, 2233 (2013) ("the dissent does not identify any patent statute that it understands to grant such a right to a patentee, whether expressly or by fair implication"). *But see id.* at 2238 (Robert, C.J., dissenting) (complaining that the majority's "novel approach is without support in any statute . . .").

⁶⁴ 35 U.S.C. § 261 (2016).

⁶⁵ *See supra* note 46 and accompanying text.

⁶⁶ 35 U.S.C. § 271(d)(5) (2016).

⁶⁷ *See, e.g.*, Del. Code Ann. tit. 8, § 122(13) (2016) ("Every corporation created under this chapter shall have power to . . . (13) make contracts . . .").

⁶⁸ *See id.* § 122(4) (right to "purchase" and "acquire" both "real or personal property").

⁶⁹ *E.g.*, *FTC v. Phoebe Putney Health Sys., Inc.*, 133 S.Ct. 1003, 1015 (2013) (provision in statute authorizing hospital corporation to acquire different corporation did not justify merger to monopoly).

statute,⁷⁰ they are also productive assets and are treated as such under the Clayton Act's prohibition of anticompetitive asset acquisitions.⁷¹ And while the Patent Act expressly authorizes infringement lawsuits,⁷² it does not authorize improper, anticompetitive lawsuits based on patents that should be known to the patent holder to be improper.⁷³

Third, to conclude that a practice is not authorized under the Patent Act says nothing about its legality under the antitrust laws. Rather, antitrust law is then free to apply the analysis that it ordinarily applies in other settings, including per se illegality for a very small set of "naked" restraints and rule of reason analysis for others, which mandates proof of market power and anticompetitive effects. Innovation harm must of course be considered, but antitrust law in fact has far better tools for assessing innovation harm than patent law does for assessing competitive harm, which it virtually always ignores.

Nevertheless, failure to find an antitrust violation is not the end of the matter. Patent law needs to have its own interest in assertions of rights to damages that are fundamentally inimical to the purposes of the Patent Act or, in some cases that are anticompetitive and do not further any legitimate Patent Act goal.

II. Competition Policy and Externally Acquired Patents

Permitting issued patents or patent licenses to be transacted in a market produces considerable gains in both static (output) and dynamic (innovation) efficiency. The trick is to identify the relatively small subset of market transactions that are harmful. For assessing market transactions, the tools of antitrust have important advantages over patent law. Guided by industrial economics, antitrust law has well-developed methodologies for assessing market power, identifying agreements that restrain trade, predicting the effect of specific practices, and individual tailoring of remedies in order to further competition as well as innovation.⁷⁴ By contrast, patent law analysis is typically indifferent to market effects, and sometimes even proceeds as if competition itself were the evil to be resisted.⁷⁵

Section 261 of the Patent Act authorizes patentees to grant exclusive licenses and also provides that patents can be assigned in writing.⁷⁶ Clearly someone who has

⁷⁰ 35 U.S.C. § 261 (2016).

⁷¹ *E.g.*, *Telectronics Proprietary, Ltd. v. Medtronic*, 687 F. Supp. 832, 844 (S.D.N.Y. 1988); *In re Great Lakes Chem. Corp.*, 103 *Federal Trade Commission* (F.T.C.) 467, 467 (1984) (consent decree). *See* 5 AREEDA & HOVENKAMP, *supra* note 2, at ¶ 1202f3.

⁷² 35 U.S.C. § 281 (2016).

⁷³ *E.g.*, *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172, 178 (1965).

⁷⁴ Jonathan B. Baker & Timothy F. Bresnahan, *Economic Evidence in Antitrust: Defining Markets and Measuring Market Power*, in *HANDBOOK OF ANTITRUST ECONOMICS* (Paolo Buccirossi, ed., 2008).

⁷⁵ *E.g.*, *Trebro Mfg., Inc. v. FireFly Equip., LLC*, 748 F.3d 1159, 1171 (Fed. Cir. 2014); *see infra* pp. 18–19.

⁷⁶ 35 U.S.C. § 261 (2016).

acquired a patent from someone else can enforce it by either damage actions or an injunction, and when the patent case law assesses entitlement to damages it does not generally distinguish between internally developed patents and those acquired from outside inventors.⁷⁷

Further, any treatment that disfavors externally acquired patents too severely can restrain innovation, particularly by smaller inventors who do not produce themselves and rely on a secondary patent market for their returns. A well-functioning patent market necessitates that patents generally be assigned and licensed freely. As noted above, however, the power to transact does not include the power to transact anti-competitively. Further, nonexclusive licenses typically achieve all of the appropriate goals of patent transfer without any of the anticompetitive effects.⁷⁸

For purposes of competition policy, the distinction between internally developed and externally acquired patents can be quite important. First, internal development is presumptively unilateral, although some research is conducted jointly. By contrast, transacting in patents is necessarily bilateral. This has important implications for antitrust policy. Only a small number of unilateral actions are unlawful under the antitrust laws. By contrast, multilateral actions are covered much more aggressively by § 1 of the Sherman Act (all contracts and agreements, and some mergers),⁷⁹ § 3 of the Clayton Act (tying and exclusive dealing),⁸⁰ and § 7 of the Clayton Act (mergers).⁸¹

Second, in order to maintain a dominant position a firm must not merely keep its own technology up to date, it must also control the innovations of rivals or potential rivals. Developing valid patents internally and enforcing them is unilateral conduct, clearly authorized by the Patent Act and cannot be an antitrust violation. But in many cases internal development alone will not exclude competing innovations by rivals. To the extent that more competitive markets are conducive to more innovation, as the literature largely concludes,⁸² increased innovation is likely to come heavily from firms that compete with the dominant firm. But many of these gains could be lost if the dominant firm were free simply to acquire exclusive rights in patents, particularly of patents that it does not intend to use.

The market generally determines the value of a patent, but this value will differ depending on the degree of competitiveness and the identity of the buyer. For example, all things equal, a dominant firm will pay more for an exclusive right to a patent

⁷⁷ See, e.g., *Trebro*, 748 F.3d at 1171 (holding that injunctive relief may be appropriate for an externally acquired and unused patent if the parties are competitors). See also Erik Hovenkamp & Thomas F. Cotter, *Anticompetitive Patent Injunctions*, 100 MINN. L. REV. 871, 873–76 (2016).

⁷⁸ See discussion *infra* Section III.

⁷⁹ Sherman Act, ch. 647, 26 Stat. 209 (1890).

⁸⁰ Clayton Act, ch. 323, 38 Stat. 731 (1914).

⁸¹ *Id.* at 731–32.

⁸² See discussion *supra* pp. 7–8.

essential to the maintenance of its dominant position than would a firm attempting to compete with the dominant firm. For the former, the value of the patent is the enhancement or maintenance of its dominant position. For the competitor, by contrast, it is the much less valuable right to competitive returns in the dominant firm's market. This reflects that industry-wide profits are generally higher when the market is less competitive. Thus transactions that enhance or maintain market dominance will tend to be more profitable than those that foster competition. Consequently, a patent holder can earn more by selling an exclusive license to a dominant firm than to its competitor, all else being equal. Note, however, that these are also the transactions most likely to injure consumers. Further, the continued absence of competition will tend to suppress market-wide innovation.⁸³

How much a dominant firm will pay for a *nonexclusive* right to a patent presents a completely different question, and depends on the relationship between the patent and the firm's existing technology, and on the possible effects of competing uses of the patents. If the patent is a desirable complement to or improvement upon the firm's existing technology, then it will practice the patent in order to improve its own product. In that case even a nonexclusive license is valuable, since the firm can earn more by selling a more desirable product. An exclusive license would be more valuable to the dominant firm, however, because this precludes competitors from implementing competing uses of the patented technology.

By contrast, if the firm's product does not benefit from the patented technology, then it will not use it, and thus a nonexclusive license provides no value. However, an exclusive license may still remain quite valuable to the extent that it excludes rivals from using the invention to improve their own products, which would increase the level of competition faced by the dominant firm.

In speaking of firms that systematically buy up patents in their area of production, the courts sometimes suggest that they are almost always acting anticompetitively.⁸⁴ The issue is complex, however. A firm that aggregates complementary patents and uses them in its products is certainly not behaving anticompetitively. Xerox

⁸³ See discussion *infra* pp. 33–34.

⁸⁴ *E.g.*, *United States v. Line Material Co.*, 333 U.S. 287, 304, 307 (1948) (“[T]here may be an aggregation of patents to obtain dominance in a patent field. False . . . By aggregating patents in one control, the holder of the patents cannot escape the prohibitions of the Sherman Act.”); *United States v. Singer Mfg. Co.*, 374 U.S. 174, 196–97 (1963) (similar, quoting *Line Material*); *Hartford-Empire Co. v. United States*, 323 U.S. 386, 443 (1945) (discussing a requirement of license on “patents illegally aggregated”); *United States v. Nat’l Lead Co.*, 332 U.S. 319, 367 (1947) (similar). See also *United States v. Gen. Elec. Co.*, 82 F.Supp. 753, 816 (D.N.J. 1949):

. . . General Electric regimented an industry by, among other things, its acquisition of patents to perpetuate a control over the incandescent electric lamp long after its basic patents expired to maintain a dominant position, rendering it possible for it to eliminate competition and maintain an industrial monopoly. Its aggregation of patents into its control permitted General Electric to monopolize patents and by so doing it violated Sec. 2 of the Sherman Anti-Trust Act.

is an example of a firm that created market leading products by doing that.⁸⁵ By contrast, aggregations of exclusive rights in substitute patents are much more suspicious. A firm does not need multiple substitute patents, since it will practice only one of them. So the systematic aggregation of substitute patents by a firm with substantial market power (or where the aggregation threatens to produce substantial market power) raises the possibility of unlawful monopolization.

Aggregation and nonuse of competing patents by a non-practicing entity poses a significant competitive threat if it threatens dominance in either a product market or in the technology market covered by the patents. The reference to technology markets is critical because a non-practicing entity by definition cannot be a monopolist in the *product* market, where its output is zero. In one case involving patent aggregator *Intellectual Ventures* (IV) the district court mistakenly dismissed a claim of monopolization on the grounds that IV had no market position in the product market for banking services, which it of course was not providing.⁸⁶ It rejected a claim that IV was monopolizing “the ex post market for technology used to provide commercial banking services.”⁸⁷ IV had acquired numerous patents directed at such services.⁸⁸ The plaintiff argued that because the patents that IV had collected into its portfolio had included all known substitutes for operating in the market it had effectively placed banks into a position where they had to obtain a license from IV in order to offer banking services.⁸⁹ This claim seems completely consistent with § 2 of the Sherman Act, which does not distinguish technology markets from product markets. For that matter, it could also be addressed under Clayton Act § 7’s prohibition of anticompetitive asset acquisitions.

The patent laws permit and even encourage the development of market shifting innovations that might serve to give the inventor substantial market power. Nothing in the patent act, however, permits the assignment of competing patents to a single owner with the power to foreclose all available avenues to a certain result. Suppose, for example, that three separate inventors develop alternative technologies A, B, and C for achieving a certain outcome. The Patent Act contemplates that these three technologies can be independently practiced by the inventors, licensed to others either exclusively or nonexclusively, or assigned. Further, nothing in the Patent Act explicitly prohibits the three technologies from being assigned to the same firm. But the

⁸⁵ See *SCM v. Xerox Corp.*, 645 F.2d 1195, 1198–99 (3d Cir. 1981) (recounting Xerox’s assembly of patents in order to create plain paper copier). *But cf.* *Intellectual Ventures, LLC v. Capital One Fin. Corp.*, 99 F.Supp.3d 610, 623 (D.Md. 2015) (describing aggregation by non-practicing entity and enforcement as potential antitrust violation). See generally Alan Devlin, *Antitrust Limits on Targeted Patent Aggregation*, 67 FLA. L. REV. 775 (2015) (advocating limited use of antitrust).

⁸⁶ *Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, No. 1:13-cv-00740, 2013 WL 6682981, at *4–5 (E.D. Va. Dec. 18, 2013).

⁸⁷ *Id.* (internal quotation marks omitted). See *infra* pp. 26–27 (discussing the decision more fully).

⁸⁸ In a separate infringement litigation between IV and Capital One, several of these patents were invalidated, and this decision was recently upheld by the Federal Circuit. See *Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1332 (Fed. Cir. 2017).

⁸⁹ *Intellectual Ventures I*, 2013 WL 6682981, at *3–5.

general assignment provision in the Patent Act does not expressly authorize such a transfer either, and here antitrust has an independent role.⁹⁰ By contrast, if a single entity invented technologies A, B, and C and then selected one of them as optimal, its enforcement actions based on any of the three technologies would be purely unilateral acts, generally difficult to reach under the antitrust laws.⁹¹

In this case the practicing acquirer of the three technologies would employ the one that serves it best. Because the technologies are competing, however, it would not practice the other two but hold them only for the purpose of excluding rivals or potential rivals.⁹² That conduct is not addressed by the patent laws and is fully reachable by antitrust laws. Indeed, it is akin to a situation in which a vertically integrated firm buys all competing upstream manufacturers (effecting a horizontal merger in the upstream market) in order to deprive downstream rivals from the upstream good.

Any rule for assessing damages actions based on externally acquired patents must then make some important tradeoffs. First, effective innovation incentives should include the right of inventors to assign their patents to others. Second, by common consensus, monopoly is much less conducive to innovation than is competitive patent ownership. One rule that would particularly discourage innovation would permit a single dominant firm to buy up exclusive rights to patents by others and then keep these patents unpracticed, using them only to deter rivals from entering its market. The courts may facilitate this outcome to the extent that they award substantial damages to plaintiffs that acquire patents to achieve monopoly in the relevant technology market.

III. Antitrust Limits on Damages for Externally Acquired Patents

Patent enforcement by damages actions is often more conducive to maintaining competition than patent enforcement by injunction. Injunction remedies can prevent a competitor from entering a market at all to the extent that entry requires practice of the infringed patents. By contrast, damages remedies place a price on competitive entry while not necessarily excluding it altogether. To be sure, a monopolist patentee can obtain the same result by placing an unacceptably high royalty on any patent it

⁹⁰ For example, *see* Antitrust Div., U.S. Dep't of Justice, Antitrust Division Policy Guide to Merger Remedies, p. 11 (June 2011) (providing for IP licensing as a remedy).

⁹¹ Patenting of substitute inventions by a single inventor—sometimes called “preemptive patenting”—is not *prima facie* anticompetitive. It may reflect, for example, that inventing around just one of the patents would be relatively easy, leaving the patent weak. Thus, the inventor may be willing to invest in innovation only if he can patent multiple variants of his idea and, therefore, prevent others from easily inventing around him.

⁹² The discussion here oversimplifies by assuming that competing patents cannot also function as complements. When patents have numerous claims they may sometimes operate as both complements and substitutes. *See, e.g.,* *Princo Corp. v. Int'l Trade Comm'n*, 616 F.3d 1318, 1324, 1345 (Fed. Cir. 2010) (Digital and analog patents operated as substitutes in product market, but one claim in digital patent wrote on the analog technology, making them complements as well.).

owns.⁹³ But damages remedies typically limit a patentee to “reasonable” royalties as determined by the court. Depending on how damages are assessed these could be significantly lower than the monopolist’s optimal royalties.

When patents are acquired from external inventors, however, and particularly if they are both externally acquired and unused, then the remedy issue is more difficult. Now countervailing considerations for the protection of competition and the innovation that it induces come into play—or, more accurately, they *should* come into play. The problem with the current system is that it ignores important factors like patent aggregation and market power when fashioning remedies. And by awarding large damages for patents obtained through anticompetitive acquisitions, the courts passively encourage transactions that serve to choke off access to valuable patented inventions, and whose propensity to create monopoly will tend to undermine the patent system’s ambition to promote innovation.

To mitigate the problems created by anticompetitive patent acquisitions, we offer the following proposal: infringement damages should be denied when: (1) the plaintiff acquired the infringed patent externally;⁹⁴ (2) the plaintiff has (or threatens to create) a dominant position in the relevant technology market; and (3) the acquisition played a significant role in expanding or perpetuating the plaintiff’s dominant position in the technology market. While inherently an antitrust remedy, this standard may operate in practice as a defense to infringement liability. However, the antitrust violation (the anticompetitive acquisition) arises at the time of the patent’s assignment to the plaintiff, and thus a prospective licensee can challenge the acquisition before it infringes the patent. Importantly, this standard does not preclude the dominant firm from securing the benefits of the patent in question; it simply requires it to obtain them through a nonexclusive license so as not to suppress competition in the process.

There are a few things to note about our proposal. First, it focuses on “market dominance” with respect to the relevant *technology* market—the class of technologies performing the same or similar function as the patented invention—rather than any product market. If the plaintiff is a producer, this may or may not translate into a dominant position in its product market as well, depending on the extent to which the

⁹³ Even if it is true that a patent holder and its rival could not agree on mutually beneficial licensing terms, implying that an *ex ante* bargain would have resulted in nonuse by the rival, it does not follow that injunction would be preferable to damages if the rival infringed the patent. The defendant may nevertheless be able to compensate the harm it imposes without shutting down; it will just have to do so at a price that exceeds the value it derives from the infringement. For example, suppose that the defendant-rival’s use of the patent increases its profits from \$9M to \$10M, but reduces the plaintiff’s profits from \$10M to \$8M. Then, mutually beneficial licensing is impossible because it hurts the patent holder by more than it benefits the licensee. However, an injunction would still be inefficient because the defendant can afford to compensate the plaintiff for its \$2M injury without having to shut down.

⁹⁴ As clarified in Section III. C., *infra*, an exclusive license (as opposed to an assignment) should generally also be sufficient to trigger our proposed limit on enforcement.

relevant technology drives demand for the final product. However, as already noted, antitrust seeks to ferret out restraints on competition in all markets, whether or not the relevant “goods” happen to be sold directly to consumers. Of course, it may be difficult to measure things like market shares or concentration in technology markets, since there are not many transactions to measure. But a court can nevertheless infer a dominant market position based on a finding that prospective users of the relevant technology have very limited options aside from obtaining a license from the patent holder.

Second, this standard requires that the plaintiff maintained a dominant position in the technology market before acquiring the patent in question, or where the acquisition created a dominant position or threatens to do so. If a patent acquisition does no more than transfer an existing monopoly position from one firm to another, no monopoly is *created*.⁹⁵ For example, if there is a single drug that can treat a particular disease, then monopoly power runs with its patent. If the drug is sold to a different firm (say, because the acquiring firm is a more efficient manufacturer) then the acquirer has not abused a dominant position; the monopoly has simply changed ownership. On the other hand, if the acquirer were the only firm to have a competing medicine, then the acquisition would increase market concentration by giving the acquirer a stronger position than either firm maintained previously, and this would likely be anticompetitive.

The following sections support the proposed limits on enforcement by considering anticompetitive acquisitions in some important contexts. The first involves acquisition and nonuse by a producer with a dominant position in the relevant technology market. The second involves acquisitions by a nonpracticing entity that create dominance in the technology space. We also consider the case of dominant producers who practice the acquired patent. In that case the prospect of licensing rather than assignment—and in particular the distinction between exclusive and nonexclusive licensing—becomes critical. In all that follows, when we say a firm is “dominant” we are referring to its market position in the relevant technology. Even if the firm is a producer, it may or may not be dominant in its product market, although some of the most interesting scenarios arise when it is dominant in both.

Also we offer a brief word on efficiencies. When antitrust’s rule of reason is applied to any transaction, efficiencies must be considered. Of course, patent acquisition and actual use can create significant efficiencies, particularly if the acquired patent complements the acquirer’s existing technology. Acquisition and nonuse is a different matter. No complementarity accrues to the acquirer, given that it is not taking advantage of the acquired patent in its own production processes. To the extent

⁹⁵ See *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 266 (7th Cir. 1984) (shifting monopoly power from one party to another “has no antitrust significance”). See also *Olympia Equip. Leasing Co. v. W. Union Tel. Co.*, 797 F.2d 370, 374 (7th Cir. 1986) (noting that it is “[n]ot the possession, but the abuse, of monopoly power [that] violates” the antitrust laws).

that such an acquisition has any impact on efficiency it lies in precluding a rival from taking advantage of the acquired but unused technology. It is extremely difficult, however, to make any case that keeping a commercially valuable technology off the market does anything other than decrease social welfare. As a result we would favor a strong presumption that an acquisition and nonuse produces no cognizable efficiencies, at least on balance.

One possible exception might occur if the acquirer intends to use the acquired patent in the future after it modifies its own technology to make the acquired patent more complementary. Another, more dynamic efficiency might accrue to the extent that the ability to sell an exclusive license to a dominant firm will provide a higher price than the sale or multiple nonexclusive licenses. As a result, the right to make such a sale might increase the incentives to the original inventor. Whether it does so, however, is hardly clear.⁹⁶

A. Patent Acquisition and Nonuse by Dominant Producers

As a general matter property owners are free to use their property or not, without subjecting themselves to adverse consequences from the State. The general rule is subject to a few qualifications. For example, unused property is more susceptible to being lost by adverse possession. By and large, however, legal policy has not taken a particularly aggressive position against unused property even though outside observers might regard nonuse as inefficient. For example, if Ford owns an unused production facility it can bring a trespass or similar action against another firm, such as Chrysler, who might start using it without permission. Of course, in this case Chrysler remains free to produce an identical factory of its own, and this outside option might persuade Ford to sell its unused factory.

Patents raise somewhat different issues. The owner of an unused patent has the right to compensation for infringement of that patent, whether or not the “trespasser” developed the technology entirely on its own, and even if it did not know it was infringing. Further, the trespasser cannot simply reproduce the patent in the way a rival car manufacturer can replicate a factory; it must *invent around* the patent, or else take advantage of an existing noninfringing substitute in order bring its own product to market. As a result, the unused patent potentially creates more “dead space” in the market than does the unused production facility.

Historically patent law recognized this fact and developed such devices as “working clauses” requiring patents to be practiced within a few years after issuance,⁹⁷ or in some cases even gave the sovereign the power to revoke a patent for nonuse.⁹⁸ The Supreme Court’s 1908 *Paper Bag* decision held, however, that a

⁹⁶ See discussion *infra* Section V.

⁹⁷ See Herbert Hovenkamp, *The Emergence of Classical American Patent Law*, 58 ARIZ. L. REV. 263, 283 (2016).

⁹⁸ *Id.* at 282–83.

patentee can enforce an unused patent.⁹⁹ The principal more recent limitation is the substantial body of case law following the Supreme Court's *eBay* decision to the effect that the owner of an unpracticed patent may not be able to obtain an injunction, but must be relegated to damages.¹⁰⁰

A particularly serious case involving externally acquired patents involves a monopolist (in the product market) that acquires an outside patent that would be effective in creating competition if another firm were able to practice it. Thus the acquisition allows the firm to maintain a chokehold on the technology needed to compete in the product market. Instead of practicing this patent itself, however, the monopolist continues with its existing technology, not using the acquired patent but merely holding it to limit the options available to competitors. Upon seeing an outside patent with such power, a dominant firm would be willing to pay up to the amount by which new competition would reduce its profits in order to acquire an exclusive right to it.¹⁰¹ That would be a classic case of rent seeking, or earning monopoly profits without adding anything to production.¹⁰²

In its *Trebro* decision the Federal Circuit addressed such a case. Whether the patent holder was “dominant” in the product market was never addressed, because the parties raised no antitrust issues and patent law does not require antitrust-like inquiries into firm dominance. But it is certainly possible, as it was the largest firm in a market that apparently included only three firms.¹⁰³ The patent holder was a producer of sod-harvesting machines.¹⁰⁴ It then acquired a substitute patent for an important part of the harvester that performed the same functions in a different way.¹⁰⁵ However, it continued to use its old technology, leaving the acquired patent unused.¹⁰⁶ When a rival firm built a machine that infringed the acquired but unused patent, the patent holder sued.¹⁰⁷

⁹⁹ *Cont'l Paper Bag Co. v. E. Paper Bag Co.*, 210 U.S. 405, 429–30 (1908).

¹⁰⁰ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 394 (2006). See Erik Hovenkamp & Thomas F. Cotter, *Anticompetitive Patent Injunctions*, 100 MINN. L. REV. 871, 875–76 (2016) (noting that injunctions are less common after *eBay*); Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 8–11 (2013) (noting that injunctions are less common after *eBay*).

¹⁰¹ For example, in a simple linear model of Cournot (output-based) competition, a duopolist earns a little less than half of the monopoly profit. Thus, the monopolist would pay more than 50% of its profits just to avoid the entry of a new competitor.

¹⁰² See generally Richard A. Posner, *The Social Costs of Monopoly and Regulation*, 83 J. POL. ECON. 807 (1975).

¹⁰³ See *Trebro Mfg., Inc. v. Firefly Equip., LLC*, 748 F.3d 1159, 1170 (Fed. Cir. 2014) (describing market as having three players, and Firefly as a recent entrant). See also *Paper Bag*, 210 U.S. 405 (involving a dominant firm).

¹⁰⁴ *Id.* at 1162.

¹⁰⁵ See *id.* at 1171.

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at 1162.

The Federal Circuit used the case as an opportunity to qualify the post-*eBay* position on injunctive relief for nonpracticing plaintiffs. It concluded that the plaintiff was entitled to an injunction, notwithstanding its nonuse of the patented article, because the defendant was a direct competitor, thus stealing sales from the patent holder.¹⁰⁸ As a result, it did not resemble the traditional NPE who does not practice any patent at all and thus does not compete with producers. In fact, there are non-antitrust grounds for doubting that injunctive relief is justified in such a case.¹⁰⁹

The disturbing thing about *Trebro* is the court's failure to take a broader view of the implications for competition policy. In fairness, the defendant apparently never raised the antitrust laws or competition policy as an objection. Assuming that the patent holder was in fact a dominant firm, the court was effectively sanctioning a strategy by which a firm buys up competing patents and shuts them down, thereby expanding and prolonging monopoly in the market in question. Further, as noted previously, to the extent that such an acquisition has any impact on either static or dynamic efficiency, it must be regarded as negative. No antitrust lawyer in such a case would neglect the patent issues while litigating the competition issues. To say this a little differently, antitrust law takes patent policy into account all the time, while patent litigation very largely ignores competition issues except in a few cases.

Assuming that the court had denied injunctive relief in *Trebro*, as it should have, should the dominant firm be able to obtain damages from the infringer? Simply denying the injunction in *Trebro* would not solve the acquisition-plus-shutting-down problem if the infringement plaintiff were entitled to substantial damages for infringement.¹¹⁰ As an antitrust matter, the superior solution would be to prevent the dominant firm from acquiring an exclusive right to a competing patent in the first place, as a monopoly-enhancing asset acquisition under § 7 of the Clayton Act or else under § 2 of the Sherman Act.¹¹¹ But in lieu of catching anticompetitive patent acquisitions as they arise, the next best thing is simply to deny any remedy in an infringement case.

¹⁰⁸ *Trebro*, 748 F.3d at 1170–71.

¹⁰⁹ See Hovenkamp & Cotter, *supra* note 99, at 878–92 (arguing that, by entering the market with its own technology before acquiring the infringed patent, the plaintiff revealed that injunctive relief was not necessary to uphold his incentive to enter the market).

¹¹⁰ There may be some circumstances in which the antitrust laws could not be applied. For example, the courts are more-or-less uniform in holding that the four-year antitrust statute of limitation on acquisitions runs from the date of the acquisition, provided that it was not concealed, and not from the date of a subsequent infringement action. The Sherman Act § 2 analysis would differ because simply acquiring a patent is not a qualifying exclusionary practice. Exclusion would come when the patent is enforced. See generally 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 320 (4th ed. 2014) (antitrust statute of limitations).

¹¹¹ See notes 79–81.

B. Dominant Non-Practicing Entities

Systematic aggregation of substitute patents by a non-practicing entity (NPE) can raise significant issues of both innovation and competitive harm, particularly where the portfolio of these substitutes dominates the available technology space, giving the NPE a dominant position in the relevant patent market. Unfortunately, however, this “market space” question is not one that would ordinarily be raised in patent litigation, because no provision in the Patent Act, nor any existing patent doctrines, make it relevant.

The principal difference between the dominant NPE and the dominant producer lies in the particular things they want to accomplish through anticompetitive patent acquisitions. As discussed in the previous section, the producer who dominates the technology space wants to use this position to deprive its product market rivals of access to the relevant technology class. Thus the motivation is exclusion. By contrast, the NPE does not want to cut off access entirely. After all, it makes no money if its patents are not licensed or infringed. Rather, the NPE’s goal is simply to raise the license fees it can demand by eliminating inter-licensor competition, and it accomplishes this by buying up most of the externally-held patents that compete with its own. This is a very basic strategy that is not limited to patent acquisitions. Any firm can earn more by controlling competing goods or processes. This is why powerful competing firms would essentially always like to merge or fix prices if they can get away with it, or why a dominant firm might wish to buy up all known reserves of an essential input.¹¹²

A second difference between NPEs and producers is that NPEs are typically limited to damages when their patents are held valid and infringed. The Supreme Court’s *eBay* decision was an important victory against overreaching patent enforcement, particularly by non-practicing entities that often hold large portfolios.¹¹³ The Federal Circuit’s rule that made injunctions in patent infringement cases virtually automatic had led to the prospect of significant holdup problems, particularly as against unknowing infringers who had substantially invested in specific technology later found to infringe.¹¹⁴ In an extreme case the threat of an injunction could induce an infringement defendant to pay up its entire sunk investment.¹¹⁵ Under *eBay*, however, the patent holder must show its entitlement to an injunction under equity law’s

¹¹² See, e.g., *United States v. Aluminum Co. of Am.*, 35 F. Supp. 820, 822 (S.D. N.Y. 1940) (allegations that Alcoa bought up 90% of known reserves of bauxite, an essential input into aluminum, in order to deny access to rivals).

¹¹³ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388 (2006). See discussion *supra* p. 21 and note 99.

¹¹⁴ E.g., *NTP, Inc. v. Research in Motion, Ltd.*, 2003 WL 23100881 (E. D. Va. Aug. 5, 2003) (holdup of Blackberry handheld device; affirming finding of infringement and order granting injunction). See Tim Wu, *Weapons of Business Destruction: How a Tiny Little “Patent Troll” Got Blackberry in a Headlock*, SLATE (Feb. 6, 2006).

¹¹⁵ See Christina Bohannon & Herbert Hovenkamp, CREATION WITHOUT RESTRAINT: PROMOTING LIBERTY AND RIVALRY IN INNOVATION, 78–80 (2012).

traditional four-factor test.¹¹⁶ In most cases involving non-practicing entities the second factor is decisive: a firm that is not practicing its patents has only one expectation of profit, and that is royalties, for which damages are an adequate substitute.¹¹⁷

eBay addressed one of the more substantial holdup problems that can accrue when non-practicing entities threaten firms with massive infringement liability.¹¹⁸ The threat of damages actions remains, however. The most troublesome threat is damages actions based on multiple patents, accompanied by settlement offers that are typically within litigation costs, or at least not much more than that. In the short run, at least, the value of settling to the defendant is the expected cost of avoided litigation plus the value of removing the possibility that validity and infringement would be found. Even if this risk is small, a settlement might be the preferred course.¹¹⁹

NPE aggregation of substitute patents has never been condemned, and has only recently been challenged at all. Several cases, some of which are ongoing, have confronted the acquisition and enforcement activities of Intellectual Ventures (IV), a large patent assertion entity (PAE) whose technologies serve many different product markets, including the banking industry. IV acquired from outside inventors some 3,500 patents relating to transaction processing and similar activities in commercial

¹¹⁶ The test requires proof (1) that the plaintiff has suffered or is threatened with irreparable injury; (2) that remedies at law, such as damages, are inadequate; (3) that the balance of hardships as between the parties favor the injunction; and (4) that the public interest would not be disserved by the injunction. *eBay*, 547 U.S. at 391.

¹¹⁷ See e.g., *Ricoh Co., Ltd. v. Quanta Computer, Inc.*, 2010 WL 1607908, at *1 (W.D. Wis. Apr. 19, 2010); *Amgen, Inc. v. Hoffman-La Roche, Ltd.*, 581 F.Supp.2d 160, 210 (D. Del. 2008); *Clouding IP, LLC v. Amazon. Com, Inc.*, 2013 WL 2293452, at *5 (D. Del. May 24, 2013); *Laserdynamics, Inc. v. Quanta Computer, Inc.*, No. 2:06-CV-348, 2010 U.S. Dist. LEXIS 61645, at *8 (E.D. Tex. June 22, 2010); *MercExchange LLC v. eBay, Inc.*, 500 F. Supp. 2d 556, 582 (E.D. Va. 2007). See Ted Sichelman, *Purging Patent Law of "Private Law" Remedies*, 92 TEX. L. REV. 517, 540–41 (2014).

¹¹⁸ As one court observed:

Although PAEs [non-practicing patent assertion entities] rarely win the lawsuits they bring, that is because they rarely litigate them to judgment. The threat of costly and disruptive litigation is their strongest tool, and it is a potent threat. "PAEs often offer to settle for amounts well below litigation costs to make the business decision to settle an obvious one." This allows PAEs "to extract licensing fees far out of proportion with the technology contributed by the patent."

Advanced Video Tech., LLC v. HTC corp., 2015 WL 7621483, at *2 (S.D.N.Y. Aug. 28, 2015) (internal citations and footnote omitted) (citing and quoting Brian T. Yeh., Cong. Research Serv., R42668, *An Overview of the "Patent Trolls" Debate* 1 (April 16, 2013), available at <https://www.fas.org/sgp/crs/misc/R42668.pdf>); John R. Allison, Mark A. Lemley & Joshua Walker, *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO L.J. 677, 694 (2011) (observing that NPEs lose roughly 92% of litigated infringement suits); Alan Devlin, *Revisiting the Presumption of Patent Validity*, 37 SW. U.L. REV. 323, 349 (2008).

¹¹⁹ One reason for this is that a PAE may be willing to follow through on its litigation threat even if it expects to lose money in court. By doing this whenever its demands are rejected, PAE may develop a litigious reputation that persuades its targets to pay its demands whenever they are lower than the cost of litigation, even if the underlying infringement claims are largely frivolous. See Erik Hovenkamp, *Predatory Patent Litigation: How Patent Assertion Entities Use Reputation to Monetize Bad Patents*, 1–6 (August 5, 2013) (unpublished manuscript) (on file with the authors and available on SSRN).

banking. Its apparent goal was to acquire control over all feasible alternative technologies for performing these activities. It then brought patent infringement actions against several banks. Under *eBay*, IV as an NPE probably could not anticipate obtaining an injunction; however, it might obtain damages and, more importantly, hold out the threat of litigating damages actions on a large number of patents as leverage for obtaining a settlement. The banks responded by filing antitrust counterclaims alleging that IV's activities constituted unlawful attempts to monopolize.¹²⁰

Under the Supreme Court's *Walker Process* doctrine an infringement action based on a patent reasonably known by the plaintiff at the time of the lawsuit to be unenforceable could constitute an attempt to monopolize.¹²¹ But this particular case had not yet reached that stage, which usually involves a determination that a patent identified in an infringement complaint was both unenforceable and should have been known by the infringement plaintiff to be unenforceable. Rather, the infringement defendants were making a very different claim, namely, that the mere act of aggregating a large number of patents and bringing infringement actions on them constituted the attempt to monopolize, whether or not the patents were individually valid and enforceable.

To illustrate the problem, suppose that a particular financial services process could be accomplished by only three alternative patented means, called Alpha, Beta, and Gamma. These three are either individual patents or else individual portfolios of complementary patents. When owned by their original inventors or other assignees, these three technologies would compete with one another and could be offered on competitive terms. If a single entity acquired all three of them from diverse owners, however, the effect would be to assemble them under a single owner, thus eliminating competition in this market. Such a pattern of acquisitions could certainly violate § 2 of the Sherman Act. Under some circumstances it could also violate § 7 of the Clayton Act.¹²² Once the patent owner acquired the Alpha portfolio, the acquisition of either the Beta or Gamma portfolios would be a horizontal merger. Acquiring all three would constitute a merger to monopoly.

In analyzing this claim, one important issue is the relationship among the acquired patents or portfolios. Complementary patents held by the same owner are practiced together, and when so practiced they are more valuable than if they are

¹²⁰ *Intellectual Ventures I, LLC v. Capital One Financial Corp.*, 99 F.Supp.3d 610, 614–15 (D.Md. 2015) (sustaining monopolization claim); however, a subsequent decision dismissed the complaint with leave to amend. An unpublished decision by the Federal Circuit on March 10, 2016, permitted the antitrust claims to proceed. *In re Intellectual Ventures*, 646 Fed. Appx. 928 (Fed Cir. Mar. 10, 2016). *Contra Intellectual Ventures I, LLC v. Capital One Fin. Corp.*, 2013 WL6 682981 at *6–8 (E.D.Va. Dec. 18, 2013) (rejecting Sherman Act Section 2 claim on analogous facts, largely on market definition grounds).

¹²¹ *Walker Process Equip., Inc. v. Food Mach. & Chem. Corp.*, 382 U.S. 172 (1965). See 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW ¶ 706 (4th ed. 2015).

¹²² As noted earlier, a patent is an “asset” subject to § 7's prohibition of anticompetitive asset acquisitions. See discussion *supra*, text at note 71.

practiced individually. By contrast, competing patents or portfolios are used in the place of one another and a firm would ordinarily practice one but not the others. The antitrust counterclaim indicated that to a substantial extent the patents were competing, because IV's intent was to blanket all available paths to operating the systems covered by the patents. To the extent that were true, it would not matter that most others were also complementary.

Another relevant question is whether IV's acquisitions (or prior acquisitions by other firms) actually assembled the competing patents into a single owner, or whether they were invented by a single entity from the onset. For example, suppose that one patentee had developed the technology and received all 3,500 patents as an individual inventor. In that case that patentee's assignment to IV would be a mere transfer of the monopoly from one firm to another.¹²³

Under the rule of reason for § 2, one must compare the anticompetitive effects of a practice against its benefits.¹²⁴ An acquisition of numerous competing patents by an entity who is not using them and which blanket the alternatives in a market does not present a close call. While patent policy encourages assignments or exclusive licenses of patents, it does so principally to enable the acquiring firm to practice the acquired patents. To be sure, such transactions also provide a market for small outside inventors, but antitrust policy forbids firms from assembling a monopoly through acquisitions, even if such a practice produces higher prices for a seller.¹²⁵ While patents are sometimes said to confer a "monopoly," that means no more than that they have the power to exclude via infringement actions. Nothing in the patent act authorizes the post-issuance creation of monopolies in a product or technology market by assembling a portfolio of competing patents.

C. Dominant Users: Exclusive vs. Nonexclusive Licenses

Suppose that a firm with an already-dominant position in the relevant technology market wants to secure the rights to use an external patent. That is, the firm already owns some substitute technologies, but it prefers to use that covered by the external patent. The market choices would be an assignment or an exclusive license, which amount to the same thing, or else a non-exclusive license. The Patent Act expressly permits exclusive licenses, and there are good reasons for generally allowing them.¹²⁶ But the Patent Act says nothing about anticompetitive exclusive licenses used to eliminate rivalry between alternative patented technologies.

¹²³ See *Brunswick Corp. v. Riegel Textile Corp.*, 752 F.2d 261, 266 (7th Cir. 1984).

¹²⁴ See Herbert Hovenkamp, *Antitrust Balancing*, 12 N.Y.U. J.L. & BUS. 369 (2016), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2687453.

¹²⁵ See 3 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶ 701 (4th ed. 2015).

¹²⁶ 35 U.S.C. § 261 (2012). Allowing exclusive licenses is valuable in many contexts where the absence of exclusivity would largely eliminate profits by driving prices down to marginal cost. For example, competition between competing sellers of a pharmaceutical drug is notoriously intense, and often

Importantly, the nonexclusive license will give the dominant firm everything it needs to improve its own production. It simply will not be able to sue for infringement or prevent the patent holder from issuing licenses to third parties. The question is an important one because exclusive patent acquisitions can create formidable entry barriers to those seeking to compete with a dominant firm. The appropriate antitrust vehicles for assessing such practices would be either § 2 of the Sherman Act, which prohibits anticompetitive exclusions, or § 7 of the Clayton Act, which prohibits anticompetitive acquisitions. Neither would usually be invoked by a nonexclusive license, however, given that the patent acquisition would not ordinarily enable the dominant firm to reduce market wide product output.

One might wonder if the incentives of the external patent holder might work against the dominant firm's ability to use the patent to anticompetitive ends. That is, perhaps the dominant firm wants an exclusive license in order to prevent rivals from using the technology, while the external patentee prefers to license nonexclusively to both the dominant firm and its rivals. However, this favorable possibility is unlikely. The external patentee's incentives are aligned with industry profits in the downstream (product) market. As a general proposition the value of a monopoly right to the dominant firm will be greater than the aggregate rights of multiple firms that practice the technology in competition.

Suppose that, if the dominant firm owned the patent, it would prefer to deny its product market rivals access to the patented technology. Then it must be that it would earn less money by licensing to them than by excluding them. But this is true only if licensing would reduce the joint profits of itself and its rivals. Thus, if the dominant firm prefers to exclude rivals from using the patented technology, then it must be that such exclusion maximizes total profits in the product market, and it therefore follows that the external patentee's preferred strategy would be to provide an exclusive license. The dominant firm and the external patentee will tend to reach the same conclusions about the most profitable amount of exclusivity.

IV. Enforcement Limits vs. Administrative Oversight

Why use limitations on patent enforcement in order to effectuate what are essentially competition law policies? The usual way to prevent anticompetitive mergers and acquisitions is to rely on administrative oversight and either require pre-approval or else catch them soon after they occur. For example, competing firms who wish to merge must first provide "premerger notification" to one of the antitrust agencies.¹²⁷ Early evaluation enables the relevant agency to challenge a merger before it occurs. Indeed, the Federal Trade Commission has recently begun to require advance

involves substantially lower prices than those that a monopolist would set. Further, because the patent typically dominates the product, the resulting output is largely undifferentiated. As such, the incentive to develop a pharmaceutical drug may depend on the permissibility of exclusive licensing.

¹²⁷ 15 U.S.C. § 18a (2000) (The Heart-Scott-Rodino Antitrust Improvements Act).

notification of qualifying exclusive patent licenses in the pharmaceutical industry.¹²⁸ By contrast, our proposed means of combatting anticompetitive patent acquisitions involves limits on patent enforcement, not a broad expansion of administrative oversight designed to catch such acquisitions before or soon after they occur. This is not to say that it would not be valuable to catch anticompetitive acquisitions at the outset. Rather, this reflects that enforcement limits provide an efficient and more practicable means of addressing the problem.

As a matter of remedy, mergers of competing firms present different challenges than mergers of competing patents. In an anticompetitive merger between rival firms, the antitrust concern surrounds diminished competition between products, and the volume and terms of product transactions are generally determined *entirely* by factors relating to market structure and demand. Outside of price regulation, which is almost never a realistic or advisable option, there are no external policy levers with which we can avoid the adverse effects of the merger. Consequently, by altering market structure in an adverse way, an anticompetitive merger between firms is likely to injure consumers. The result is generally that the only way to prevent the merger's anticompetitive effects is to prevent it from happening in the first place.

However, things are different in a market for patent rights. Here it is not market forces alone that influence the terms of trade. The courts also play a major role. Expectations about the outcome of litigation form a "threat point" that places an upper bound on the amount a prospective user will pay for a license. The result is that the volume and terms of transactions are distorted by the shadow of litigation. All else being equal, if one patent is likely to be supported by weaker remedies than another patent, then the rights to that first patent will command a lower price. For example, if the Supreme Court establishes a new precedent under which a firm's patent is almost surely invalid, then prospective users may subsequently pay little or nothing for a license, as they know that litigation would clear them of any obligation to pay for the rights. Thus, in stark contrast to a conventional product market, the courts indirectly control prices (license fees) and output (licensing agreements) through their remedial standards.

This provides an alternative channel through which the anticompetitive effects of patent mergers can be avoided. Rather than having to catch anticompetitive patent acquisitions as they arise, it is sufficient simply to weaken enforcement by denying remedies for patents that were acquired in violation of the antitrust laws. As soon as the acquisition occurs, this renders the acquired patent largely impotent. Thus it will not be very effective as a means of excluding one's rivals, for there are no remedies that the acquirer can use as a deterrent. Furthermore, the rivals may use the threat of declaratory judgment litigation (to establish that the acquisition was anticompetitive) to compel a low price of access. For the same reasons, this rule diminishes an NPE's

¹²⁸ See *Pharm. Research & Mfrs. Of Am. v. FTC*, 790 F.3d 198 (D.C. Cir. 2015) (approving requirement that assignments or exclusive licenses in some pharmaceutical patents be reported as asset acquisitions).

ability to charge supra-competitive fees for an aggregated combination of substitute patents. And, importantly, eliminating a firm's ability to monetize an anticompetitive patent acquisition deters them from making such acquisitions in the first place.

Focusing on the enforcement stage also helps to avoid the monumental administrative costs that would be required to police patent acquisitions as they occur. Not only are patents regularly exchanged in huge numbers—3,500 in the previously noted *Intellectual Ventures* case—but they are also complex documents that require significant experience to interpret. Most have not yet been litigated at the time they are transacted, and thus it is unlikely that they have been made subject to significant, individualized claim construction.¹²⁹ It may take considerable resources simply to determine whether two patents are substitutes. Further, technology markets are generally harder to delimit than product markets (particularly as an empirical matter), and hence it may be very challenging to determine whether a given combination of substitute patents would provide a dominant position in the relevant technology market. It is thus unrealistic for the antitrust authorities to undertake such complex investigations in all patent acquisitions that may potentially raise an antitrust issue.

On the other hand, the parties to a patent dispute will typically have considerable knowledge about the relevant technology space, and the dispute itself is likely to shed light on how the plaintiff's patent combination is operating in commerce. For example, the defendant may have strong evidence that it has no feasible way of operating in its product market without practicing one of several substitute patents acquired by the plaintiff. Further, claim construction is an inevitable consequence of an infringement suit and can aid in determining the extent to which the infringement plaintiff's patents operate as substitutes. Similarly, the plaintiff's licensing history, if it exists, may shed light on what kinds of applications the patents are being used for. The court can utilize all of this information to make important determinations relating to the antitrust inquiry, such as what the relevant technology market is and whether the plaintiff purchased his way into a dominant position.

For example, it is relatively common for firms to acquire large patent portfolios that subsume many different technologies that perform a wide range of functions. In most cases, the portfolio includes both complements and substitutes, but it may be very challenging to sort out the complements from the substitutes. Thus, rather than going through the portfolio at the outset to determine whether some of the acquired patents raise an antitrust question, it is much simpler to simply wait until such patents are enforced. This avoids the costs of investigating acquired patents that pose no antitrust concerns or that will never be enforced. And to the extent that the portfolio

¹²⁹ *But cf.* *Nero AG v. MPEG LA, L.L.C.*, 2010 WL 4878835, at *2 (C.D. Cal. Nov. 24, 2010) (licensee of large portfolio complaining that it would be extremely costly to determine which of the thousands of patents it infringed or what their coverage was).

includes some patents that the purchaser should not have been permitted to acquire, the limitation on damages renders them largely benign.

A third way, which has fallen out of popularity, is the judge-made patent “misuse” doctrine, which seems ideally suited for this purpose. While that doctrine is explicitly a creature of patent rather than antitrust law, it historically has been thought of as applying antitrust-like principles to patent practices. Furthermore, in the great majority of cases it is asserted as a defense to an infringement suit, as would be true here.¹³⁰ A court would be asked to hold that an infringement action that threatened competition unnecessarily constitutes “misuse,” thereby rendering the patent unenforceable under the circumstances. As noted, however, the Federal Circuit has cut back so severely on misuse doctrine that it has become practically defunct.¹³¹ This was very largely in reaction to severe excesses in the twentieth century, and a cutback was clearly justified.¹³² However, a leaner and more focused doctrine of misuse could serve a valuable purpose in cases such as these. The fact that misuse doctrine attaches at the point of an infringement action rather than the patent acquisition itself makes it all the more valuable.

V. Impact on Innovation

How will our proposal affect innovation incentives? That ultimately depends on how it affects competition, which in turn affects private incentives to invent. Because our proposed limitations do not apply in situations where the plaintiff invented the relevant technologies itself, we are principally concerned with the incentives of the original inventors who sell their patents. To that end, one point already mentioned is that an inventor who wishes to sell its patent can generally make the most money by selling its patent to a firm that already dominates the relevant technological market. This reflects that profits are higher when a market is more concentrated, and thus a transaction will tend to be more lucrative to the extent that it promotes market concentration. As such, if an inventor anticipates selling its patent, then it may have a strong interest in being able to sell to a dominant patent holder who is willing to pay a high price for an exclusive right, but our proposed enforcement limitations would prevent this. Thus the reader may be concerned that our proposal will advance antitrust interests at the expense of patent policy objectives. In particular, won't our proposal diminish the incentive to innovate by limiting the rents that external inventors can get by selling their patents?

The answer is no. It is indeed true that an external inventor could generally get a higher price from a dominant patent holder than from a collection of non-dominant rivals. But this example is inapt; it presupposes a market that is not very competitive,

¹³⁰ See Bohannon, *supra* note 58; 10 PHILLIP E. AREEDA & HERBERT HOVENKAMP, *ANTITRUST LAW* ¶¶ 1781–82 (3d ed. 2011).

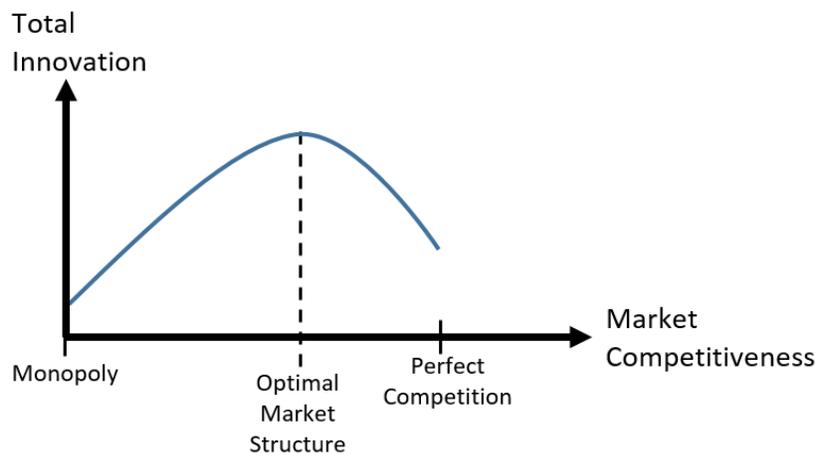
¹³¹ *Princo Corp. v. ITC*, 616 F.3d 1318, 1330 (Fed. Cir. 2010) (en banc); See also Hovenkamp, *Antitrust and the Patent System: A Reexamination*, *supra* note 10, at 468–73, 561–62.

¹³² See AREEDA & HOVENKAMP, *supra* note 129, at ¶¶ 1781–82.

and it focuses on a single transaction within this environment. It then asks how the inventor's payoff changes when enforcement limitations prevent it from selling its patent to the dominant firm at a high price, but in doing so it continues to assume that the market is just as noncompetitive as before. As such, it totally disregards the principal effect of discouraging anticompetitive patent acquisitions, namely that this will make the technology market more competitive.

With respect to the external innovator's incentives, the relevant comparison is between: (1) a noncompetitive market that involves no limits on enforcement; and (2) a relatively competitive market that places some limits on enforcement. The fact that a patent holder in situation (1) gets the highest price by selling to the dominant firm does not in any way suggest that this price is also higher than the one he would receive in situation (2). That is, a competitive firm in (2) might pay more than the dominant firm in (1).¹³³ Furthermore, it may be that the firms themselves would do more internal innovation when the market is more competitive, as in scenario (2). As these points illustrate, in order to tease out the aggregate impact of enforcement limitations on invention, we must ultimately inquire into the impact of increased competition on innovation incentives.

A leading view in the modern economic literature on innovation—the *inverted U hypothesis*—posits that aggregate innovation in a market is highest when the market is relatively competitive, but not *too* competitive. More specifically, it says that, as a function of market competitiveness, total innovation takes an inverted U shape: beginning at monopoly, innovation initially increases as the degree of competition rises, but eventually innovation reaches a peak beyond which further increases in competition serve to reduce total innovation.¹³⁴ This is illustrated in Figure 1 below.



¹³³ Similarly, it could be that several competitive firms in (2) would pay *jointly* more for nonexclusive licenses than the dominant firm in (1) would pay for an exclusive license.

¹³⁴ See Philippe Aghion et al., *Competition and Innovation: An Inverted-U Relationship*, 120 Q. J. ECON. 701, 701–03 (2005) (providing theoretical and empirical support for the inverted U hypothesis).

FIGURE 1: THE INVERTED U HYPOTHESIS

The inverted U hypothesis has strong theoretical and empirical support.¹³⁵ Further, the empirical literature tends to suggest that the optimal degree of competition—that corresponding to the peak of the inverted U—is closer to perfect competition than to monopoly.¹³⁶ For our purposes, the important takeaway is that monopoly power is generally not good for promoting innovation. Rather, there should be a relatively significant degree of competition in order to maximize innovative output within a given technology space.

The inverted U hypothesis suggests that limiting enforcement of certain externally acquired patents will increase total innovative activity, provided that such limits are triggered only by acquisitions that serve to expand or maintain a dominant patent holder's market position in the relevant technology space. Anticompetitive patent acquisitions facilitate monopoly or, at the very least, substantially concentrated (i.e. noncompetitive) markets. Thus, to the extent that such transactions are both possible and permissible, the result will be systematic monopoly over time. That is, the dominant firm will tend to remain as such, and thus the market will remain noncompetitive. But firms would invest more in innovation overall if the market were more competitive. All else being equal, the firms would also spend more in total for external patent rights, implying that independent inventors who sell their patents are indeed better off when the market is somewhat competitive.¹³⁷ As such, limiting enforcement of patents acquired anticompetitively will not only serve antitrust policy interests, but will also promote the patent system's principal objective of facilitating innovation.

VI. Conclusion

Although patent alienability is largely a good thing, in some cases it can be used to anticompetitive ends. Firms may aggregate substitute patents from external sources in order to achieve an unearned monopoly position in the relevant technology space. Analogous anticompetitive acquisitions are regularly condemned in ordinary

¹³⁵ See, e.g., *id.*; Ronald L. Goettler & Brett R. Gordon, *Does AMD Spur Intel to Innovate More?*, 119 J. POL. ECON. 1141, 1174 (2011); Patrik G. Tingvall & Andreas Poldahl, *Is There Really an Inverted-U Shaped Relation Between Competition and R&D?*, 15 ECON. OF INNOV. & NEW TECH. 101, 112–13 (2006).

¹³⁶ See Aghion et al., *supra* note 133, at 706 (showing a graph of the empirically-estimated inverted U relationship, which has the property that total innovation, measured by citation-weighted patents, is maximized when the residual $1-L$ is close to 1, where L the Lerner index, which serves as a metric for market competitiveness); Bohannon & Hovenkamp, *supra* note 114.

¹³⁷ This result follows from the fact that the theoretical models supporting the inverted U focus on the aggregate amount firms are willing to invest in improving their products (which could be accomplished by securing external patent rights, although this is not usually stated explicitly) as the relevant measure of innovative activity. See Aghion et al., *supra* note 133, at 711–15. Thus, all else being equal, firms would be willing to spend a larger total amount for external patents when the market is relatively competitive than when it is monopolized. The intuition is simply that the firms' total "demand for innovation" is highest at an intermediate degree of competition.

(non-patent) contexts, but the courts have not yet applied the same logic to patent acquisitions. This paper proposes that damages should be withheld if the litigated patent was obtained in an anticompetitive acquisition, meaning that the assignment served to expand or perpetuate the patent holder's dominant position in the technology market. This prevents patent holders from using such acquisitions to anticompetitive ends. By avoiding systematic monopoly in technology markets, such limits on enforcement will also promote patent policy by increasing aggregate innovation.