

COMPETITION AND PIRACY

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ABSTRACT

Intellectual property infringement has been characterized by over two hundred years of judicial opinions and scholarly writings as a socially destructive behavior akin to theft and trespassing. Modern intellectual property laws are faithful to this approach, punishing those who willfully infringe upon patent rights with treble damages and remedying acts of copyright infringement with statutory damages and, in some instances, prison time. This Article argues, however, that deterring infringement with such hyper-compensatory remedies squanders the benefits of piracy. Using an economic framework, certain acts of infringement are shown to increase society's level of innovation and efficiency in ways that the law should—but does not currently—encourage. From a conceptual standpoint, infringement should be reframed as a rational response to intellectual property's anticompetitive structure, as opposed to a normatively bad behavior.

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I. INTRODUCTION

Intellectual property infringement has been characterized by over two hundred years of judicial opinions and scholarly writings as a socially destructive behavior¹ akin to stealing² or trespassing.³ For example, the earliest U.S. patent and copyright statutes sought to deter almost every instance of infringement using punitive remedies.⁴ Today's intellectual property laws have remained faithful to the spirit of this approach, punishing those who willfully infringe upon another's patent rights with treble (i.e. triple) damages⁵ and remedying acts of copyright infringement with statutory damages and, in some instances, prison time.⁶

To illustrate intellectual property's hyper-compensatory remedies, consider the case of *Feather v. Adobe Systems*⁷ in which a jury found the defendant Michael Feather liable of making and distributing twenty-eight

1. *Stimpson v. Railroads*, 1 Wall. Jr. 164 (1847) (“Before 1836, the law compelled the court to treble the ‘actual damages’ found by the jury. This was intended, no doubt, to punish the defendant”); *cf. Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 136 S. Ct. 1923, 1926 (2016) (“Here, 180 years of enhanced damages awards under the Patent Act establish that they . . . are instead designed as a sanction for egregious infringement behavior.”).

2. *Roemer v. Logowitz*, 20 F. Cas. 1093, 1096 (C.C.D.N.J. 1871) (“[H]e meanly attempted to enrich himself at the public expense by stealing the product of other men’s brains”); *cf. Irina D. Manta, The Puzzle of Criminal Sanctions for Intellectual Property Infringement*, 24 HARV. J.L. & TECH. 469 (2011) (discussing how the likening of infringement to stealing is often used to justify criminal sanctions for infringers).

3. *Smith v. Woodruff*, 22 F. Cas. 703, 704 (D.C. 1873) (“Damages are claimed by the plaintiff for the alleged infringement of certain letters patent, and he instituted for that purpose an action of trespass on the case”); *cf. Odin B. Roberts, Contributory Infringement of Patent Rights*, 12 HARV. L. REV. 35, 39 (1898) (comparing infringement to trespassing).

4. *See, e.g., Patent Act of 1790*, ch. 7, 1 Stat. 109–12 (requiring the court to remedy acts of infringement with treble damages in every instance in order to punish and deter acts of infringement); Oskar Liivak, *When Nominal is Reasonable: Damages for the Unpracticed Patent*, 56 B.C. L. REV. 1031, 1044 (2015) (“The [Patent] Act of 1793 instructs that ‘the infringer should forfeit and pay to the patentee a sum equal to three times the price for which the patentee has usually sold or licensed to other person the use of said invention.’”); Pamela Samuelson & Tara Wheatland, *Statutory Damages in Copyright Law: A Remedy in Need of Reform*, 51 WM. & MARY L. REV. 439, 444 n.19 (2009) (“Under the 1790 Act, the per sheet remedy was explicitly penal in nature This penalty was fixed in one set amount without any regard to the actual damage incurred or the justice of that award as applied in a particular case.”).

5. 35 U.S.C. § 284 (2012) (“[T]he court may increase the damages up to three times the amount found or assessed.”).

6. 17 U.S.C. § 504 (2012) (establishing the statutory and actual damages used to remedy copyright infringement); 18 U.S.C. § 2319 (2012) (providing up to five and ten years in prison for certain offenses).

7. 895 F. Supp. 2d 297 (D. Conn. 2012).

unauthorized copies of programs copyrighted by Adobe Systems.⁸ Mr. Feather infringed the copyrights by burning Adobe programs onto rewritable compact discs to sell on eBay.⁹ Even though most Adobe programs retailed for only about \$150, the court calculated Adobe's royalty rate at \$90,000 *per infringed item*, ordering Mr. Feather to pay a \$2.52 million award.¹⁰ Similarly in *Novozymes v. Genencor*,¹¹ the owner of an infringed patent received an enhanced \$4 million award despite a paucity of evidence that the patentee had suffered any actual damages.¹² In both cases, the courts affirmed royalty awards that far exceeded the injuries incurred by either the patent or copyright holder.¹³

Although meant to protect the monopoly rights conferred by patents and copyrights,¹⁴ commentators criticize this system as being economically inefficient.¹⁵ Indeed, the severity of penalties used to remedy acts of infringement may so effectively shield patented and copyrighted goods from competition that holders are incentivized to gouge the market¹⁶ or

8. *Id.* at 301.

9. *Id.*

10. *Id.* at 303. Adobe sought statutory damages instead of actual damages. *Id.* The court also granted a permanent injunction preventing Mr. Feather from continuing his infringing activities. *Id.*

11. 474 F. Supp. 2d 592 (D. Del. 2007).

12. The company Novozymes does not use its patented technology but, instead, licenses the patent to other companies within its corporate family. The court ruled that the licensees lacked standing to sue for patent infringement leaving no companies in the lawsuit able to demonstrate actual damages resulting from the infringer's conduct. *Id.* at 604, 609.

13. *Feather*, 895 F. Supp. 2d at 303–05 (using remedies meant to punish the infringer to, in part, deter others from committing similar acts); *Novozymes*, 474 F. Supp. 2d at 610–11 (granting the patentee enhanced damages meant to punish willful infringement); *see also* UMG Recordings, Inc. v. MP3.com, No. 00 Civ. 472 (JSR), 2000 WL 1262568, at *1, *6 (S.D.N.Y. Sept. 6, 2000) (issuing the plaintiff whose copyrighted music had been “ripped” statutory royalties entailing \$25,000 per CD, resulting in a \$118 million award “despite the absence of any evidence of actual harm to the plaintiffs or profits of the defendant”); Samuelson & Wheatland, *supra* note 4, at 442.

14. *United Shoe Mach. Corp. v. United States*, 258 U.S. 451, 463 (1922) (“From an early day it has been held by this court that the franchise secured by a patent consists only in the right to exclude others from making, using, or vending the thing patented without the permission of the patentee.”); *Fox Film Corp. v. Doyal*, 286 U.S. 123, 127 (1932) (“The owner of the copyright, if he pleases, may refrain from vending or licensing and content himself with simply exercising the right to exclude others from using his property.”).

15. *See, e.g.*, CHRISTINA BOHANNAN & HERBERT HOVENKAMP, CREATION WITHOUT RESTRAINT xiv (2011) (explaining, in the context of the innovative/anticompetitive trade off, that “[t]he patent system is in a crisis of overissuance, overprotection, and excessive litigation The future is bleaker for copyright law.”).

16. Rebecca S. Eisenberg, *Technology Transfer and the Genome Project: Problems with Patenting Research Tools*, 5 RISK: HEALTH SAFETY & ENV'T 163, 168–69 (1994)

adopt even greater anticompetitive behaviors, including tying arrangements,¹⁷ refusals to license,¹⁸ sham infringement lawsuits,¹⁹ and patent pools.²⁰ And since intellectual property promotes the precise behaviors that antitrust law prohibits—i.e. monopolies and trade restraints²¹—the limited antitrust immunity that the courts have granted rights holders²² may further exacerbate intellectual property’s

(“During the patent term, firms can charge monopoly prices, and thereby earn an enhanced return on their development costs and compensation for their risks.”).

17. Under certain circumstances, a tying arrangement is illegal. *See* Ill. Tool Works Inc. v. Indep. Ink, Inc., 547 U.S. 28, 35 (2006) (noting that a tying arrangement is illegal when the patent holder possesses sufficient market power, but not otherwise). *See generally* Melissa Hamilton, *Software Tying Arrangements Under the Antitrust Laws: A More Flexible Approach*, 71 DENV. U. L. REV. 607, 608 (1994) (“In a tying arrangement, the seller agrees to sell one product, referred to as the tying product, on the condition that the purchaser also buy from the seller a different product, referred to as the tied product.”).

18. *See, e.g.*, United States v. Studiengesellschaft Kohle, M.B.H., 670 F.2d 1122, 1127 (D.D.C. 1981) (“A patentee has the right to exclude others from profiting from the patented invention. This includes the right to suppress the invention while continuing to prevent all others from using it, to license others, or to refuse to license”) (internal citation omitted).

19. *See, e.g.*, Prof'l Real Estate Inv'rs, Inc. v. Columbia Pictures Indus., Inc., 508 U.S. 49 (1993) (examining “sham litigation” in the copyright context).

20. *See, e.g.*, Nero AG v. MPEG LA, L.L.C., No. 10-cv-3672-MRP-RZ, 2010 WL 4366448, at *1, *1 (C.D. Cal. Sept. 14, 2010) (explaining the nature of a patent pool); Justin R. Orr, *Patent Aggregation: Models, Harms, and the Limited Role of Antitrust*, 28 BERKELEY TECH. L.J. 525, 552 n.151 (2013) (describing the innovation-harming effects of patent pools); Michael Mattioli, *Patent Pool Outsiders*, 33 BERKELEY TECH. L.J. (forthcoming 2018) (describing the benefits of operating outside of patent pools despite the presence of pooled competitors).

21. Erik Hovenkamp & Thomas F. Cotter, *Anticompetitive Patent Injunctions*, 100 MINN. L. REV. 871, 871 (2016) (discussing the “deliberate tradeoff” that patents present whereby a patent pursues long-term economic growth via innovation while sacrificing short-term efficiency by issuing monopoly rights and other exclusionary privileges); *see also* Marius Schwartz, *Licensing Restrictions on Fields of Use Vs. Adjacent Markets: A Potential Economics Basis for Differential Legal Treatment*, 66 N.Y.U. ANN. SURV. AM. L. 435, 440 (2011) (offering an example of how incentivizing innovation can also reduce overall efficiency).

22. *See, e.g.*, FTC v. Actavis, Inc., 133 S. Ct. 2223, 2238 (2013) (Roberts, C.J., dissenting) (discussing patents as an exception to antitrust law: “[t]he point of antitrust law is to encourage competitive markets to promote consumer welfare. The points of patent law is to grant limited monopolies In doing so it provides an exception to antitrust law, and the scope of the patent—i.e., the rights conferred by the patent—forms the zone within which the patent holder may operate without facing antitrust liability.”); *see also* Marina Lao, *Unilateral Refusals to Sell or License Intellectual Property and the Antitrust Duty to Deal*, 9 CORNELL J.L. & PUB. POL'Y 193, 193 (1999) (“Courts and academics alike considered intellectual property rights as exceptions to the antitrust law that must be narrowly construed.”).

anticompetitive nature.²³ As a result, critics contend that rewarding content owners with such lucrative damages awards belies the goals of patent and copyright laws since “the primary purpose of our [intellectual property system] is *not* the creation of private fortunes for the owners of patents” and copyrights but instead “the Progress of Science and useful Arts.”²⁴

Puzzlingly though, the record indicates—in contrast to popular logic and scholarship—that holders generally embrace fair, competitive, and efficient business strategies despite wielding monopoly rights.²⁵ In many instances holders modify their behaviors to compete *more* fairly when they could otherwise use their intellectual property rights to gouge the market.²⁶ Take the music industry, for example, which resisted selling individual tracks of music, instead bundling songs together in the form of albums.²⁷ Because the industry’s copyrights prevented competitors from selling songs individually, consumers were compelled to purchase unwanted tracks.²⁸

23. See Jay P. Kesan & Carol M. Hayes, *FRAND’s Forever: Standards, Patent Transfers, and Licensing Commitments*, 89 IND. L.J. 231, 235 (2014) (noting that patent rights may even hinder innovation); Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813, 1817 (1984) (arguing that intellectual property rights by definition are monopolies that come at a competitive cost to society due to the manner in which they limit competition).

24. U.S. CONST. art. I, § 8, cl. 8 (“To promote the Progress of Science and useful Arts, by securing limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries.”); *Quanta Comput., Inc. v. LG Elecs.*, 553 U.S. 617, 626 (2008) (emphasis added); see also William F. Lee & A. Douglas Melamed, *Breaking the Vicious Cycle of Patent Damages*, 101 CORNELL L. REV. 385, 391 (2016) (explaining that patent law is primarily intended to spark innovation, not for inventors to profit); Janet Freilich, *The Uninformed Topography of Patent Scope*, 19 STAN. TECH. L. REV. 150, 150 (2015) (remarking that the ideal patent scope is the “minimum amount of scope necessary to incentivize innovation”).

25. See Herbert Hovenkamp, *Restraints on Innovation*, 29 CARDOZO L. REV. 247, 248 (2007) (explaining that anticompetitive behaviors based upon IP rights rarely violate antitrust laws and that the supposed conflict between the two bodies of law is overstated).

26. See, e.g., Jorge L. Contreras, *A Market Reliance Theory for FRAND Commitments and Other Patent Pledges*, 2015 UTAH L. REV. 479, 480 (2015) (discussing the pledge to which some patentees agree to make their patents available on “fair, reasonable, and non-discriminatory (FRAND) terms”); Clark D. Asay, *The Informational Value of Patents*, 31 BERKELEY TECH. L.J. 259, 261 n.6 (2016) (recognizing that the “literature on FRAND commitments is voluminous”).

27. See Dorian Lynskey, *How the Compact Disc Lost Its Shine*, GUARDIAN (May 28, 2015, 1:39 PM), <http://www.theguardian.com/music/2015/may/28/how-the-compact-disc-lost-its-shine>; see generally Jeffrey Philip Wachs, *The Long-Playing Blues: Did the Recording Industry’s Shift from Singles to Albums Violate Antitrust Law?*, 2 U.C. IRVINE L. REV. 1047, 1058 (2012) (explaining the motivation for and economics of the record industry decision to bundle singles into albums).

28. See Bill McConnell, *Copyright Debate Has New Tune in the Age of Streaming*, DEAL PIPELINE (Aug. 1, 2014), <http://www.thedeal.com/content/regulatory/copyright->

However, without any changes to copyright law, the record labels decided to sell individual tracks at lower prices shortly after online pirates began distributing digital infringing tracks over the Internet.²⁹ Why would a monopolist like the music industry embrace competition when its prior practices were both lucrative and shielded by copyright protections?

This Article argues that patent and copyright owners tend to resist acting as anticompetitively as their intellectual property rights would allow due to procompetitive effects of piracy. Using an economics framework, this Article shows that certain acts of infringement increase society's level of innovation and efficiency in ways that the law should—but does not currently—encourage, indicating the law squanders the benefits of piracy. From a conceptual standpoint, infringement should be recast as a rational response to intellectual property's anticompetitive structure as opposed to a normatively bad act.

As will be demonstrated, a patented or copyrighted good sold at an excessively above market premium creates demand for a cheaper infringing version. Because the law can only abate so much piracy, a holder's best strategy is generally to lower prices or shed other anticompetitive behaviors in order to reclaim their market space.³⁰ This phenomenon, in the aggregate, increases efficiency by encouraging holders to discipline the extent of their exclusionary activities. In the music industry, it was the distribution of pirated songs that caused the record companies to unbundle their albums using competing online platforms, thereby becoming more competitive and innovative.³¹ Society may therefore need a level of piracy to keep markets from becoming overly anticompetitive.

debate-has-new-tune-in-the-age-of-streaming.php (providing background information about the use and utility of copyright protections in the music industry).

29. See Paul Resnikoff, *What Really Killed the CD?*, DIGITAL MUSIC NEWS (Aug. 20, 2014), <http://www.digitalmusicnews.com/2014/08/20/really-killed-cd/> (providing an overview of the diminishing sales of compact discs).

30. See, e.g., Ernesto Van der Sar, *Kanye West's the Life of Pablo Sparks Piracy Craze*, TORRENTFREAK (Feb. 16, 2016), <https://torrentfreak.com/kanye-wests-the-life-of-pablo-piracy-160216/>; Sarah Perez, *Kanye West's New Album, 'The Life of Pablo,' Is No Longer a Tidal Exclusive*, TECHCRUNCH (Apr. 1, 2016), <https://techcrunch.com/2016/04/01/kanye-wests-new-album-the-life-of-pablo-is-no-longer-a-tidal-exclusive/>. Kanye West's album *The Life of Pablo* was exclusively released on Tidal, which led to elevated levels of piracy. *Id.* Within a couple months, the album was made available over Apple, Spotify, and other services. *Id.*

31. *iTunes at 10: How Apple's Music Store Has Transformed the Industry*, N.Y. DAILY NEWS (Apr. 24, 2013, 3:37 PM), <http://www.nydailynews.com/entertainment/music-arts/itunes-transformed-music-industry-article-1.1326387> (quoting one music executive as saying “[t]he sky was falling, and iTunes provided a place where we were

As a consequence, the intellectual property system must be recalibrated to emphasize innovation over the preferences of content owners. Intellectual property's heavy-handed remedies favor the right to exclude so heavily over innovation and growth—which are intellectual property's actual objectives—that even the most economically beneficial acts of piracy tend to be impeded.³² In fact, the remedies for infringement can *reward* holders for being anticompetitive. The court in *Monsanto v. Ralph*³³ amplified Monsanto's royalty rate into a \$2.5 million award after considering evidence that Monsanto, as a matter of course, refuses to license its patents to competitors—a policy that stifles competition and blocks innovation.³⁴ Because of this, many holders find it more profitable to sue others for infringement than to practice their patented or copyrighted art.³⁵ This Article advocates in favor of a market for infringement which would incentivize parties to infringe and pay damages when a holder has become excessively anticompetitive.³⁶ Such a system would not only stimulate innovation and generate efficiency, it would also advance the direction in which intellectual property has already begun to evolve but via a modified path.³⁷

going to monetize music and in theory stem the tide of piracy. So, it was certainly a solution for the time.”).

32. *Walker v. Forbes, Inc.*, 28 F.3d 409, 412 (4th Cir. 1994) (“[T]he law makes clear that there is no gain to be made from taking someone else’s intellectual property without their consent.”).

33. 382 F.3d 1374 (Fed. Cir. 2004).

34. *Id.* at 1384 (reasoning that a reasonable royalty can deprive an infringer of more than its prospective profits when the patentee is an unwilling licensor).

35. Erik Roger & Young Jeon, *Inhibiting Patent Trolling: A New Approach for Applying Rule 11*, 12 NW. J. TECH. & INTELL. PROP. 291, 295 (2014) (“There has been an alarming rise in the number of litigious entities—commonly referred to as patent trolls or non-practicing entities (NPEs)—that make no products but file dubious patent infringement lawsuits merely to extract money from commercially productive companies.”).

36. See Robert P. Merges, *Contracting Into Liability Rules: Intellectual Property Rights and Collective Rights Organizations*, 84 CALIF. L. REV. 1293, 1302 (1996) (discussing how IP could orient around liability rules that would allow one to infringe and pay damages, rather than guaranteeing a patent or copyright owner’s right to exclude).

37. Governed from a property rules framework, the courts used to grant permanent injunctions as a matter of course to remedy acts of infringement in order to prevent infringement in nearly every instance. In *eBay v. MercExchange*, the Supreme Court limited the use of injunctions, effectively allowing certain infringers to continuously infringe so long as they pay damages. Such a development may have initiated a fundamental shift whereby intellectual property rights are governed by liability rules, under which parties may freely breach or infringe so long as they pay the attendant damages. *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 392 (2006); see also Daniel Crane, *Intellectual Liability*, 88 TEX. L. REV. 253, 254 (2009).

This Article proceeds in seven parts. Part I has introduced the piracy puzzle. Part II traces the legal history of intellectual property rights and remedies in order to explore the choices embodied in today's intellectual property laws. Part III assesses the innovative and anticompetitive effects of deterring infringement with, in many instances, punitive remedies. Part IV explains that intellectual property rights do not undermine markets as much as they logically could because piracy is a rational and ameliorative response to intellectual property's anticompetitive structure. Part V illustrates piracy's competitive effects using case studies from the smartphone, pharmaceutical, and movie industries. Part VI offers policy suggestions about how to incorporate infringement's procompetitive effects into the remedy scheme used to incentivize innovation. Part VII concludes.

II. THE HISTORICAL TRAJECTORY OF INTELLECTUAL PROPERTY RIGHTS

The modern intellectual property system remedies acts of infringement in a manner consistent with the earliest U.S. patent and copyright statutes. Of particular salience is the way, shortly after the Constitution's ratification, the law began to characterize patents and copyrights as forms of property, departing from the approach derived in seventeenth and eighteenth century England.³⁸ Considering the Framers' reverence of property ownership, these nascent intellectual property laws punished infringers for engaging in what the courts, legislatures, and commentators considered to be an antisocial behavior.³⁹ In light of piracy's negative connotation, this Part explains how deterring infringement with stiff penalties has remained a central feature of patent and copyright laws.

A. HISTORICAL AND MODERN PATENT SYSTEMS

Before the modern U.S. patent system, colonial and pre-constitutional patent laws mirrored English common law, granting monopolies in the industrial and manufacturing sectors on a discretionary basis.⁴⁰ In

38. See Adam Mossoff, *Exclusion and Exclusive Use in Patent Law*, 22 HARV. J.L. & TECH. 321, 348–49 (2009).

39. Adam Mossoff, *Patents as Constitutional Private Property: The Historical Protection of Patents Under the Takings Clause*, 87 B.U. L. REV. 689, 706 (2009) (“[T]he Framers empowered Congress, not the Executive, to secure an inventor’s rights—placing this constitutional provision in Article I, not in Article II—which suggested they viewed patents as important property rights secured by the people’s representatives.”).

40. See Adam Mossoff, *Who Cares What Thomas Jefferson Thought About Patents? Reevaluating the Patent “Privilege” in Historical Context*, 92 CORNELL L. REV. 953, 967 (2007).

eighteenth century England, those tasked with granting patents sought to determine whether an application was likely to promote the Queen's economic prerogatives.⁴¹ As such, an English patent during the early modern era was considered a "privilege" because it not only created an exception to the general ban against monopolies but also an affirmative duty to use the patent.⁴² The discretionary issuance of patents continued beyond the U.S. Constitution's ratification through the first set of American Patent Acts.⁴³ Because reviewing each patent application overwhelmed the patent board,⁴⁴ the U.S. Patent Act of 1836 changed course by issuing patents as a matter of right, meaning that an applicant who satisfied the statutory description of a patent was entitled to one.⁴⁵ By making patents a type of property right as well as establishing the Patent and Trademark Office, the American patent system began to modernize.⁴⁶ No longer were patents considered privileges with an affirmative duty to use, but instead they became a property interest embodying, specifically, the right to exclude.⁴⁷ Other property concepts soon entered the intellectual property lexicon, including the license and assignment of patents.⁴⁸

Because the Framers held such a sacrosanct view of property ownership, the first patent acts deterred infringement by imposing costs on infringers that exceeded the harms inflicted.⁴⁹ Both the Patent Acts of 1790 and 1793 required infringers to pay treble damages in *every* instance, offering no

41. See Adam Mossoff, *Rethinking the Development of Patents: An Intellectual History, 1550–1800*, 52 HASTINGS L.J., 1255, 1255 (2001).

42. See Edward C. Walterscheid, *Inherent or Created Rights: Early Views on the Intellectual Property Clause*, 19 HAMLINE L. REV. 81, 83 (1995).

43. See Oren Bracha, *The Commodification of Patents 1600-1836: How Patents Became Rights and Why We Should Care*, 38 LOY. L.A. L. REV. 177, 216–18 (2004) (asserting that the Constitution's Framers intended the IP Clause to continue the English patent and grant system).

44. *Id.* at 227; Mossoff, *supra* note 40, at 967–68.

45. Bracha, *supra* note 43, at 227.

46. See Mark A. Lemley, *Why Do Juries Decide if Patents are Valid?*, 99 VA. L. REV. 1673, 1697 (2013).

47. See Julie S. Turner, *The Nonmanufacturing Patent Owner: Toward a Theory of Efficient Infringement*, 86 CALIF. L. REV. 179, 181–82 (1998) ("The only right the patent system bestows is the right to exclude others from making, selling, or using the subject matter of the patent. It is often said that the social value gained from conferring the limited value of a monopoly is the required disclosure of the invention.") (internal citations omitted); Mossoff, *supra* note 40, at 990 (explaining that patents were considered "civil rights in property" derived from natural law); Bracha, *supra* note 43, at 237; Mossoff, *supra* note 38, at 349.

48. See Mossoff, *supra* note 38, at 353.

49. Matthew D. Powers & Steven C. Carlson, *The Evolution of the Doctrine of Willful Patent Infringement*, 51 SYRACUSE L. REV. 53, 66 (2001).

affirmative defenses for independent invention or accidental infringement.⁵⁰ The courts and scholarship followed this approach, characterizing infringement as an antisocial behavior.⁵¹ For example, in *Seymour v. McCormick*,⁵² the Supreme Court discussed certain types of patent damages as a means to “penalize wanton and malicious pirates.”⁵³ The Court later reiterated this objective, stating that enhanced damages provide a “vindictive or punitive” function, meant to “inflict” harm upon infringers.⁵⁴

Notably, early nineteenth century courts seldom remedied infringement using equitable remedies that are now commonplace.⁵⁵ This is because, contrary to how modern courts possess both legal and equitable powers, the judicial system in the nineteenth century divided equity and law into distinct forums.⁵⁶ A case was considered best suited for a court of law when its underlying factual dispute had yet to be resolved, which was typical among patent contests.⁵⁷ But, because holders would repetitively file the same lawsuits in concurrent state courts, patent litigation soon exhausted judicial resources.⁵⁸ In response, equitable remedies grew increasingly popular during the mid–nineteenth century, which allowed courts to rely upon the rulings and factual findings of other state courts, thereby reigning in the costs of patent litigation.⁵⁹ Slowly the permanent injunction emerged as an orthodox remedy to supplement monetary damages.⁶⁰

This historical treatment of remedying infringement like an antisocial activity is evident in the liability minefield found in today’s Patent Act. Currently, the measure of infringement damages is either a holder’s lost profits or a reasonable royalty based upon a hypothetical ex ante licensing deal between the holder and infringer.⁶¹ In light of legislative and judicial

50. See Patent Act of 1790, ch. 7, 1 Stat. 109–12; Powers & Carlson, *supra* note 49, at 66; Liivak, *supra* note 4, at 1044–45 (“[T]he patentee need not show anything beyond infringement to establish the fact of compensable harm.”).

51. S. REP. NO. 79-1503, at 1387 (1946) (authorizing the courts to grant attorney’s fees to patentee after proving willfulness on behalf of the infringer).

52. 57 U.S. 480 (1853).

53. *Id.* at 488.

54. *Tilghman v. Proctor*, 125 U.S. 136, 143–44 (1888).

55. Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 YALE L.J. 848, 913 (2016).

56. *Id.* at 914.

57. *Id.*

58. *Id.* at 915.

59. *Id.* at 916–18.

60. *Id.* at 918.

61. 35 U.S.C. § 284 (2012); *Aqua Shield v. Inter Pool Cover Team*, 774 F.3d 766, 770 (Fed. Cir. 2014) (“The value of what was taken—the value of the use of the patented technology—measures the royalty. A traditional heuristic for assessing this market value

efforts to deter infringement, such conduct is described as a strict liability tort, meaning evidence showing accidental or innocent infringement cannot excuse culpability.⁶² With over 8,000,000 patents issued by the PTO—frequently to holders who have no intention of ever using their patented art—an actor who in good faith infringes upon an unused patent can be ordered to pay a substantial royalty fee.⁶³ Because infringement penalties are so severe, a cottage industry has emerged in which non-practicing entities, otherwise known as “patent trolls,” purchase patents with the sole intention of threatening litigation to extract rents from those active in research and development.⁶⁴ If one’s infringement is found to be willful, a holder’s damages may be trebled to produce a windfall award.⁶⁵ A court can, in addition, issue a permanent injunction barring one from using, producing, or selling the infringing copy even if substantial resources were expended independently inventing it.⁶⁶ The American patent system’s trajectory has thus firmly established a property right in patents, sanctioning acts of infringement with stringent, or even punitive, remedies.

B. HISTORICAL AND MODERN COPYRIGHT SYSTEMS

Before the American Revolutionary War, a copyright in England vested its author with a natural law right of perpetual ownership interest in a

is to posit a hypothetical negotiation between the patentee and adjudicated infringer and to attempt to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began.”) (internal quotations omitted).

62. *Commil USA, LLC v. Cisco Sys., Inc.*, 135 S. Ct. 1920, 1926 (2015).

63. Amy L. Landers, *Patent Claim Apportionment, Patentee Injury, and Sequential Invention*, 19 GEO. MASON L. REV. 471, 472 (2012) (noting that some of the largest royalty awards have been issued to non-practicing entities, which do not use their patents but only wage lawsuits with them); Liivak, *supra* note 4, at 1038.

64. Liivak, *supra* note 4, at 1062; Lemley et al, *How Often Do Non-Practicing Entities Win Patent Suits?*, 32 BERKELEY TECH. L.J. 235 (describing empirical effects of non-practicing entities on patent litigation); Nathan P. Anderson, *Striking a Balance: The Pursuit of Transparent Patent Ownership*, 30 BERKELEY TECH. L.J. 395, 396 n.5 (2015) (describing the “lively debate” over how to address patent trolls).

65. 35 U.S.C. § 284 (2012) (“[T]he court may increase the damages up to three times the amount found or assessed.”).

66. 35 U.S.C. § 283 (2012) (“The several courts having jurisdiction of cases under this title may grant 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.”). A patentee may even obtain a permanent injunction against an infringer when not using the patented work. *Hovenkamp & Cotter*, *supra* note 21, at 875 (“*Trebro* is hardly the first case in which the Federal Circuit has stated that a patent owner whose own products do not embody its patented invention may obtain an injunction against a competitor whose products allegedly do embody that invention.” (quoting *Trebro Mfg, Inc. v. FireFly Equip., LLC*, 748 F.3d 1159 (Fed. Cir. 2014) (emphasis in original))).

creative work.⁶⁷ In the United States, Congress enacted the original American copyright act in 1790, which was derived from the first modern copyright statute: the English Statute of Anne.⁶⁸ This system established a term limit for a copyrighted work after which time the work would enter the public domain, vesting its author with a time-limited interest in the copyright instead of an inherent right to the art.⁶⁹ As the American copyright began to represent a property right, the Congress and courts sought to preserve this right with rather uncompromising remedies.⁷⁰

Indeed, the remedies for copyright infringement tend to be, like patent remedies, “not only punitive in effect, but punitive in intent.”⁷¹ From the 1909 Copyright Damages Act to today’s copyright statute, a copyright holder who has proven infringement can sue an infringer for either statutory damages or actual damages plus the infringer’s profits.⁷² By including the infringer’s profits into the equation, Congress sought to eliminate any possible economic benefit of infringement in order to deter every instance of piracy.⁷³ Statutory damages are perhaps even more punitive,⁷⁴ ranging from \$750 to \$30,000 per act for non-willful infringement and reaching up to \$150,000 per act for willful infringement.⁷⁵ Whether to grant a higher or lower award is based upon the court’s discretionary view of fairness with

67. Oren Bracha, *The Statute of Anne: An American Mythology*, 47 HOUS. L. REV. 877, 889 (2010) (describing the perpetual character of natural law patents in England before the Statute of Anne).

68. *Eldred v. Ashcroft*, 537 U.S. 186, 232 (2003).

69. *See Suntrust Bank v. Houghton Mifflin Co.*, 268 F.3d 1257, 1262 (11th Cir. 2001) (noting that before the U.S. copyright system came into being, England’s natural law copyright jurisprudence provided “the right of perpetual publication” which “implied an ownership in the work itself”).

70. *See Basic Books, Inc. v. Kinko’s Graphics Corp.*, 758 F. Supp. 1522, 1529 (S.D.N.Y. 1991) (“For almost 300 years, American law has protected intellectual property rights through the copyright law. The protection derives from the English Statute of Anne, the first statute to recognize the right of authors.”) (internal citation omitted); *see also* H. Tomas Gomez-Arostegui, *Copyright at Common Law in 1774*, 47 CONN. L. REV. 1, 47 (2014).

71. Samuelson & Wheatland, *supra* note 4, at 446.

72. 17 U.S.C. § 504(a) (2012); *AF Holdings LLC v. Bossard*, 976 F. Supp. 2d 927, 930 (W.D. Mich. 2013) (“The owner of a copyright may collect either actual damages or statutory damages from an infringer.”).

73. *Walker v. Forbes, Inc.*, 28 F.3d 409, 412 (4th Cir. 1994) (“By stripping the infringer not only of the licensing fee but also of the profit generated as a result of the use of the infringed item, the laws makes clear that there is no gain to be made from taking someone else’s intellectual property without their consent.”).

74. Samuelson & Wheatland, *supra* note 4, at 445.

75. 17 U.S.C. § 504(c)(1–2) (2012).

little in the statute or case law to guide the decision.⁷⁶ Given that statutory damages can arbitrarily produce awards far surpassing a holder's actual injury, a common sentiment is that statutory damages produce "inconsistent, unprincipled, and sometimes grossly excessive" results.⁷⁷

Beyond civil damages, more than 200 people are typically incarcerated each year for copyright infringement.⁷⁸ Congress enacted the first statute criminalizing infringement in 1897.⁷⁹ Since then, the punishments for criminal copyright infringement have progressively increased in severity, especially after the rise of pirated digital music.⁸⁰ Currently, if one willfully infringes upon another's copyright for pecuniary gain, federal law can penalize the perpetrator with a one-to-five year prison sentence and a fine.⁸¹ The defendants in *United States v. Slater*,⁸² for example, pled guilty to reproducing copyrighted software—potentially infringing upon 30,000 copyrights—and received federal sentences ranging from six months to two years.⁸³

But perhaps such rigid patent and copyright remedies create undesirable externalities. The next Part explores the economics of the right to exclude, explaining why intellectual property promotes both innovative and anticompetitive behaviors.

76. See Samuelson & Wheatland, *supra* note 4, at 441 ("U.S. copyright law provides scant guidance about where in that range the award should be made. . . . One might have expected courts to develop a jurisprudence to guide them . . . Unfortunately, this has not yet happened.").

77. *Id.*

78. Collin R. McHenry, *A Comparative Analysis of Copyright Evolution and Enforcement in Taiwan and the United States*, MCHENRY L. FIRM (Dec. 5, 2016), <http://mchenry-law.com/comparative-analysis-copyright-evolution-enforcement-taiwan-united-states/> ("In the United States, copyright infringement criminal convictions peaked at 224 in 2007 . . .").

79. Eldar Haber, *The Criminal Copyright Gap*, 18 STAN. TECH. L. REV. 247, 248 (2015).

80. *Id.* at 251, 257–58 (explaining that before the digital age, criminal copyright statutes could impose a 1-year sentence on an infringer while in the digital age, Congress has sought to increase the penalties).

81. 17 U.S.C. § 506(a)(2) (2012); 18 U.S.C. § 2319(c)(1) (2012) (violations of Section 506(a)(2) are punishable by Section 2319: "(1) shall be imprisoned not more than 5 years, or fined in the amount set forth in this title, or both, if the offense consists of the reproduction or distribution, including by electronic means, during any 180-day period, of at least 10 copies or phonorecords, of 1 or more copyrighted works, which have a total retail value of more than \$2,500.").

82. 348 F.3d 666 (7th Cir. 2002).

83. *Id.* at 668.

III. THE INNOVATIVE AND ANTICOMPETITIVE EFFECTS OF IP RIGHTS, AND THE INTELLECTUAL PROPERTY–ANTITRUST CONFLICT

The intellectual property system is described as an economic tradeoff: although patents and copyrights are meant to stimulate innovation by granting authors and inventors monopoly rights to their original works, the creation of monopolies can also create deadweight loss.⁸⁴ In fact, intellectual property rights encourage patent and copyright holders to engage in anticompetitive behaviors that would ordinarily violate antitrust laws.⁸⁵ This Part has two objectives. The first is to review the economics of intellectual property in order to explain why the remedies used to deter infringement generate both innovative and anticompetitive results. The second is to explain how granting a form of antitrust immunity to intellectual property holders may enhance IP's inefficiencies.

A. THE ECONOMICS OF INTELLECTUAL PROPERTY'S INNOVATIVE AND ANTICOMPETITIVE EFFECTS

From an economic perspective, intellectual property rights are meant to raise the costs of free riding⁸⁶ on another's creative efforts.⁸⁷ The process of

84. The harm to markets caused by IP's anticompetitive nature is generally described as a "static inefficiency." Mark Lemley, *Property, Intellectual Property, and Free Riding*, 83 TEX. L. REV. 1031, 1058 (2005) ("Intellectual property rights distort markets away from the competitive norm, and therefore create static inefficiencies in the form of deadweight losses."); see also Robin C. Feldman, *The Insufficiency of Antitrust Analysis for Patent Misuse*, 55 HASTINGS L.J. 399, 403 (2003) (discussing how patent rights incentivized holders to the types of anticompetitive arrangements that are forbidden by antitrust laws).

85. See R. Hewitt Pate, *Refusals to Deal and Intellectual Property Rights*, 10 GEO. MASON L. REV. 429, 432 (2002) (discussing how the right to exclude can become anticompetitive when a holder refuses to license their technology).

86. The free-rider problem is an economics concept referring to when an actor enjoys a good or service without bearing the cost for that good or service. This creates incentives to "free-ride" on the efforts of others, consuming at low or no cost. See, e.g., Pamela Samuelson, *Functionality and Expression in Computer Programs: Refining the Tests for Software Copyright Infringement*, 31 BERKELEY TECH. L.J. 1215, 1262 (2016) (describing decisions by the Federal Circuit that attempt to avoid "unfair free-riding"); S. Zubin Gautam, *The Murky Waters of First Sale: Price Discrimination and Downstream Control in the Wake of Kirtsaeng v. John Wiley & Sons, Inc.*, 29 BERKELEY TECH. L.J. 717, 736 (2014) (discussing the free-rider problem in context of international sales of copyrighted goods); Jingyuan Luo, *Shining the Limelight on Divided Infringement: Emerging Technologies and the Liability Loophole*, 30 BERKELEY TECH. L.J. 675, 699 (2015) (explaining how patents avoid free riding and allow "inventors to recoup their investment in research and development" of patented goods).

87. See *Barclays Capital Inc. v. Theflyonthewall.com, Inc.*, 650 F.3d 876, 900–01 (2d Cir. 2011) (assessing the nature and extent of defendant's copyright infringement in the context of its attempts to free ride).

developing an original good tends to be costly, which authors and inventors incorporate into their goods' prices.⁸⁸ Without intellectual property rights, free riders could undersell an original good by copying and selling it at its marginal cost of production, avoiding the costs of the creative process.⁸⁹ The economic advantages of free riding as opposed to inventing would consequently stifle society's level of innovation.⁹⁰ Intellectual property's exclusionary nature mitigates this problem by granting authors and inventors the freedom to recoup their costs of innovation without the fear of being undersold.⁹¹ In fact, holders can generally charge prices reflecting a limited monopoly so as to reward and incentivize parties to engage in creative activities. Under the current system, inventors gain the exclusive rights to produce patented goods for twenty years,⁹² while the duration for copyrighted goods lasts seventy years plus the life of the author.⁹³

The problem is that monopoly rights create the means and motives for holders to become anticompetitive. Consider how markets saturated with patents and copyrights are fundamentally different than competitive markets. In a competitive market, a producer who sells a good at an elevated price tends to lose sales to those offering identical (or substitute) items at cheaper prices, which drives prices down to more "competitive" levels.⁹⁴ But intellectual property rights shield holders from this pressure to charge competitive prices by eliminating the threat of rival producers who may undersell an overpriced good. This, in turn, gives patent and copyright holders strong motivation to gouge the market as much as possible.⁹⁵ Some

88. The marginal cost of production is the change in total cost that comes from making or producing an additional item. See Michael A. Carrier, *Resolving the Patent-Antitrust Paradox through Tripartite Innovation*, 56 VAND. L. REV. 1047, 1050 (2003) (discussing the economics of innovation and intellectual property).

89. See *id.*

90. *Id.* (“[F]ree-riders’ are tempted to imitate the invention after it has been developed, which would deter future inventors and investors and lead to a suboptimal level of innovation.”).

91. *Id.*

92. 35 U.S.C. § 154(a)(2) (2012).

93. Pub. L. No. 105-298, § 102, 112 Stat. 2827 (codified at 17 U.S.C. § 302(a) (2000)).

94. See Eugene E. Agger, *Monopoly and Competitive Prices*, 3 AM. ECON. REV. 589, 591 (1913) (“Competitive price is the result of free competition and equals the costs of production.”).

95. See, e.g., RICHARD POSNER, *ECONOMIC ANALYSIS OF LAW* 370–71 (8th ed. 2011) (describing this phenomenon in the context of cartels); Note, *Limiting the Anticompetitive Prerogative of Patent Owners: Predatory Standards in patent Licensing*, 92 YALE L.J. 831, 854–55 (1983) (explaining how exclusionary rights create the means and incentives for anticompetitive behavior).

commentators assert that an optimal level of intellectual property should thus allow producers to charge more than their good's cost of production but less than an excessive rate, a balance that they claim the intellectual property system has failed to achieve.⁹⁶

In addition to monopoly pricing schemes, untethering patented and copyright goods from free market forces can incentivize holders to adopt a host of even greater anticompetitive behaviors, the most prominent of which is the tying arrangement.⁹⁷ In a tying arrangement, a holder requires those purchasing a patented or copyrighted good to buy a non-patented or copyrighted good or service.⁹⁸ In the patent context, because a patent canvasses only the technology described in the patent, tying arrangements expand one's monopoly rights to benefit non-patented items.⁹⁹ Not only does this artificially increase the non-protected good's demand, but it also insulates both items from competition.¹⁰⁰ For example, Kodak refused to supply independent mechanics with photocopier replacement parts, forcing consumers to use only Kodak repairmen, effectively tying the purchase of a Kodak photocopier with its maintenance.¹⁰¹ And since most tying arrangements are only made possible with intellectual property rights—

96. BOHANNAN & HOVENKAMP, *supra* note 15, at xiv (noting in the context of the innovative/anticompetitive trade off: “[t]he patent system is in a crisis of overissuance, overprotection, and excessive litigation The future is bleaker for copyright law.”); *see also* Freilich, *supra* note 24, at 151–52 (asserting the difficulty of establishing the correct “patent scope”).

97. *See, e.g.*, Michael Wolfe, *The Apple E-Book Agreement and Ruinous Competition: Are E-Goods Different for Antitrust Purposes?* 12 DUKE L. & TECH. REV. 129, 136–37 (2014) (analyzing specifically copyrights: “where there exist federally granted intellectual property rights, the government has effectively given its imprimatur to a certain restraint of trade—the copyright monopoly—in furtherance of the goals of intellectual property.”).

98. *Tying Arrangement*, BLACK'S LAW DICTIONARY 1660 (9th ed. 2009); *see also* Sandy Azer, *A Three-Tiered Public Policy Approach to Copyright Misuse in the Context of Tying Arrangements*, 82 FORDHAM L. REV. 81, 83 (2013) (“A tying arrangement involves conditioning the sale or licensing of one product on the consumer's agreement to purchase or license another.”).

99. *Fortner Enter., Inc. v. U.S. Steel Corp.*, 394 U.S. 495, 512–13 (1969) (“[T]he fundamental restraint against which the tying proscription is meant to guard is the use of power over one product to attain power over another, or otherwise to distort freedom of trade and competition in the second product . . . [T]he practice of tying forecloses other sellers of the tied product and makes it more difficult for new firms to enter that market.”).

100. Formerly a tying arrangement was per se illegal when used in conjunction with a patent because intellectual property rights were believed to confer such market power on a holder that such arrangements were inherently anticompetitive. The Supreme Court amended this rule so plaintiffs must now prove the defendant possessed requisite market power. *See Ill. Tool Works Inc. v. Indep. Ink, Inc.* 547 U.S. 28, 41, 45–46 (2006).

101. *Eastman Kodak Co. v. Image Tech. Serv., Inc.*, 504 U.S. 451, 478–79 (1992).

after all, absent monopoly rights, competitors could sell the patented good without its superfluous item—few competitive rationales justify tying arrangements and their attendant inefficiencies.¹⁰²

A similar practice is the anticompetitive product design whereby a patented product is engineered to work best or exclusively with a non-patented good. The novelty of an anticompetitive product design involves how it explicitly avoids conditioning the sale of two goods upon each other like a tying arrangement.¹⁰³ Anticompetitive designs may artificially increase demand for a secondary product insofar as such a product benefits from the protected good's patent.¹⁰⁴ If a patented good constitutes foundational technology, an anticompetitive design can bar rival producers from competing in the greater industry.¹⁰⁵ Apple, for instance, initially designed the iPod to play digital music from almost any source,¹⁰⁶ but then closed the system, limiting the iPod's compatibility to music purchased from Apple's iTunes store.¹⁰⁷ This development impeded rivals from competing against Apple in both the markets for digital music and devices to play digital music.¹⁰⁸ After all, if a consumer purchased an iPod, the

102. In terms of procompetitive justifications, a tying arrangement could actually benefit consumers if consumer demand exists for a convenient manner in which to purchase two items. *Jefferson Parish Hosp. Dist. No. 2 v. Hyde*, 466 U.S. 2, 11–12 (1984) (“It is clear, however, that not every refusal to sell two products separately can be said to restrain competition. If each of the products may be purchased separately in a competitive market, one seller’s decision to sell the two in a single package imposes no unreasonable restraint on either market, particularly if competing suppliers are free to sell either the entire package or its several parts.”); see also Mark DeFeo, *Unlocking the iPhone: How Antitrust Law Can Save Consumers from the Inadequacies of Copyright Law*, 49 B.C. L. REV. 1037, 1057–58 (2008) (describing the harmful economics of tying arrangements).

103. See *United States v. Microsoft Corp.*, 253 F.3d 34, 75 (D.D.C. 2001) (stating that a product design can violate the antitrust laws by being anticompetitive if there are no procompetitive benefits of making it incompatible with competitors’ products).

104. John M. Newman, *Anticompetitive Product Design in the New Economy*, 39 FLA. ST. U. L. REV. 681, 683 (2012) (“The archetypical design-conduct challenge alleges that a firm, dominant in one product market, designed a new version of that product so as to maximize interoperability with its own complementary product(s), essentially requiring customers to buy the two together.”).

105. *Id.* (“[T]he theory goes, the defendant either engaged in ‘foreclosure’ (excluding rivals who make interoperable complementary goods from the market), ‘leveraging’ . . . or both. Such conduct is often referred to as ‘technological tying’ because of its conceptual similarity to contractual tying. And as with contractual tying, a healthy debate surrounds the viability of claims that it is anticompetitive.”).

106. *Id.* at 697–98.

107. See Class Action Complaint at 4, *Slattery v. Apple Comput., Inc.*, No. C05-00037 PVT, 2005 WL 3689273 (N.D. Cal. Jan 3, 2005).

108. *Id.* at 17.

transaction would necessarily compel the consumer to buy music from Apple's iTunes store as opposed to other sellers.

Another anticompetitive use of intellectual property rights occurs when a holder refuses to license a patented or copyrighted good to third parties.¹⁰⁹ A fundamental principle of property rights is that a property owner may exclude others from using or possessing her property.¹¹⁰ But in the intellectual property context, refusing to share copyrighted or patented art may hinder both innovation and competition because innovators commonly rely upon older works to create new technology. If prior generations' patent owners refuse to license their work, they can frustrate inventors from innovating new products¹¹¹ as well as from entering the market.¹¹² In light of a copyright's multigenerational duration and a patent's twenty-year span, the refusal to license intellectual property rights can frustrate innovation for significant periods of time.

Moreover, even the affirmative act of licensing a patented or copyrighted good may give rise to anticompetitive effects. For example, some goods are comprised of multiple patents owned by disparate parties; a patent pool is an agreement among a common good's patent holders to set a lump sum price for licenses to their collective patents.¹¹³ Ideally a patent pool can reduce the transaction costs borne by parties who would otherwise

109. See generally Shyamkrishna Balganesh, *Demystifying the Right to Exclude: Of Property, Inviolability, and Automatic Injunctions*, 31 HARV. J.L. & PUB. POL'Y 593, 595 (2008) (offering a nuanced discussion of the right to exclude in relationship to intellectual property rights).

110. See Crane, *supra* note 37, at 253 n.1 (noting authority that the "right to exclude" may be "the essential stick in the bundle of rights known as property").

111. See, e.g., *Intergraph Corp. v. Intel Corp.*, 3 F. Supp. 2d 1255, 1266–67 (N.D. Ala. 1998); Dana R. Wagner, *The Keepers of the Gates: Intellectual Property, Antitrust, and the Regulatory Implications of Systems Technology*, 51 HASTINGS L.J. 1073, 1082 (2000) (discussing *Intergraph* and remarking that Intel's decision to quit licensing its technology prevented competitors from building off of Intel's technology, which dominated the industry).

112. See generally Sheri J. Engelken, *Opening the Door to Efficient Infringement: eBay, Inc. v. MercExchange, L.L.C.*, 2 AKRON INTEL. PROP. J. 57, 61 (2008) (providing an overview of the problem created when a patent holder "suppresses" their patent); Seungwoo Son, *Selective Refusals to Sell Patented Goods: The Relationship Between Patent Rights and Antitrust Law*, 2002 U. ILL. J.L. TECH. & POL'Y 109, 110 (2002) ("A significant conflict between these two bodies of law has recently arisen in cases where an IP holder selectively refuses to sell or license a patent or copyright, thereby harming the competitive process . . .").

113. Phillip B. Nelson, *Patent Pools: An Economic Assessment of Current Law and Policy*, 38 RUTGERS L.J. 539, 539 (2007) ("Patent pools are agreements among patent owners through which patent owners combine their patents, waiving their exclusive rights to the patent so that they or others can obtain rights to license the pooled patents.").

need to negotiate individual licenses with numerous holders.¹¹⁴ A problem occurs when the patentees collude, refusing to license their patents to those seeking to compete against the group or develop new technologies.¹¹⁵ Or on occasion a patent pool imposes a licensing requirement whereby each licensee must agree to charge and maintain a certain above-market price on the patented good.¹¹⁶ So by prohibiting or increasing the costs of introducing a new technology, a patent pool can insulate its members from competition and decrease society's rate of innovation.¹¹⁷ However, these anticompetitive arrangements appear to facially violate competition laws.

B. ANTITRUST AND INTELLECTUAL PROPERTY'S ANTICOMPETITIVE EFFECT

Antitrust laws promote competitive markets by forbidding many of the exclusionary behaviors that intellectual property rights incentivize.¹¹⁸ In order to harmonize these bodies of law, intellectual property rights create a limited antitrust exception.¹¹⁹ This framework allows holders to seek monopoly prices and arrangements so long as their conduct remains within

114. See, e.g., Hillary Greene, *Patent Pooling Behind the Veil of Uncertainty: Antitrust, Competition Policy, and the Vaccine Industry*, 90 B.U. L. REV. 1397, 1398, 1400 (2010) (illustrating the patent problem using the need to develop vaccines for emerging diseases: “[m]ultiple, potentially blocking patents, could, therefore, encumber the genomic sequence that researchers need to develop a vaccine.”).

115. Saami Zain, *Misuse of Misuse: Princo Corp. v. International Trade Commission and the Federal Circuit's Misguided Patent Misuse Jurisprudence*, 13 N.C. J.L. & TECH. 95, 101, 104–05 (2011) (discussing *Zenith Radio Corp. v. Hazeltine* and noting that “*Zenith Radio* involved various interrelated misuse and antitrust allegations involving patent pools and conspiracies to deter entry in various markets. . . . *Zenith* contended that *Hazeltine* committed both misuse and antitrust violations by, inter alia, conspiring with foreign manufacturers to create patent pools and refusing to license pooled patents in certain markets for the purpose of restraining competition.” (citing 395 U.S. 100, 104–05 (1969))).

116. *United States v. Line Material Co.*, 333 U.S. 287, 308, 310–11 (1948).

117. See Phillip W. Goter, Princo, *Patent Pools, and the Risk of Foreclosure: A Framework for Assessing Misuse*, 96 IOWA L. REV. 699, 712–13 (2011) (discussing whether patent pools could stifle innovation).

118. Michael A. Carrier, *Unraveling the Patent-Antitrust Paradox*, 150 U. PA. L. REV. 761, 784 (2002) (reviewing the “patent-antitrust conflict”).

119. See Joseph Scott Miller, *Patent Ships Sail an Antitrust Sea*, 30 SEATTLE U. L. REV. 395, 397–98 (2007) (“Free competition, which antitrust law helps ensure, is the fundamental norm. . . . Patent Protection, if one can obtain it at all, is a hard-earned, partial exception.”); see also Spencer Weber Waller & Matthew Sag, *Promoting Innovation*, 100 IOWA L. REV. 2223, 2235 (2015) (quoting Herbert Hovenkamp and finding that “the patent-antitrust conflict may be ‘readily exaggerated.’ Hovenkamp suggests that there are, in fact, only ‘a small number of cases in which both a plausible antitrust claim and a countervailing IP policy are present.’”) (internal citation omitted).

the scope of a patent or copyright.¹²⁰ The following Section reviews IP's antitrust immunity and why observers assert it has made markets even less competitive.¹²¹

There are two sections of the Sherman Act—Sections 1 and 2—relevant to anticompetitive harms derived from intellectual property rights. Section 1 bars agreements and contracts that *unreasonably* restrain trade.¹²² Singular parties acting without a coconspirator cannot violate Section 1 since an “agreement” necessitates multiple actors.¹²³ The predominant way courts scrutinize whether an act involving intellectual property violates antitrust law is using the rule of reason test.¹²⁴ The rule of reason test requires a court to determine whether an arrangement's anticompetitive effects outweigh its market benefits.¹²⁵ In doing so, a court asks three questions: “(1) does the agreement have anticompetitive effects; (2) if so, are there procompetitive justifications for the agreement; and (3) can the plaintiffs present evidence that the challenged conduct is unnecessary to achieve those justifications.”¹²⁶ When a challenged activity arises out of IP rights, courts tend to scrutinize whether the patent or copyright statute permitted the act.¹²⁷ If such a behavior exceeded the scope of one's patent or copyright, this militates towards a violation.¹²⁸ After all, “a patent gives

120. Elizabeth I. Winston, *A Patent Misperception*, 16 LEWIS & CLARK L. REV. 289, 290 (2012) (“Patent holders have long perceived actions arising under the Patent Act to be immune from the Sherman Act The limited restraints on trade bestowed on patentees as a reward for public disclosure are not unlawful restraints that destroy competition, but rather incentives for competitors to innovate.”).

121. *Id.* at 293–95 (discussing the patent/IP tradeoff whereby patents serve as a “limited right to restrict trade”).

122. 15 U.S.C. § 1 (2012); *Reg'l Multiple Listing Serv. of Minn., Inc. v. Am. Home Realty Network, Inc.*, 960 F. Supp. 2d 958, 979 (D. Minn. 2013) (“To establish a claim under Section 1 of the Sherman Act a plaintiff must demonstrate (1) that there was a contract, combination, or conspiracy; (2) that the agreement unreasonably restrained trade under either a per se rule of illegality or a rule of reason analysis . . .”).

123. *See, e.g., Arista Records LLC v. Lime Group*, 532 F. Supp. 2d 556, 579 (S.D.N.Y. 2007) (dismissing an antitrust claim because the plaintiffs failed to demonstrate a “meeting of the minds” between alleged Section 1 conspirators).

124. *See Reg'l Multiple Listing*, 960 F. Supp. 2d at 984.

125. *Bhan v. NME Hosp., Inc.*, 929 F.2d 1404, 1410 (9th Cir. 1991) (“Under [the rule of reason] test, we must analyze the degree of harm to competition along with any justifications or pro-competitive effects to determine whether the practice is unreasonable on balance.”).

126. *In re Wellbutrin XL Antitrust Litig.*, 133 F. Supp. 3d 734, 753 (E.D. Pa. 2015).

127. *See King Drug Co. of Florence, Inc. v. Smithkline Beecham Corp.*, 791 F.3d 388, 406–07 (3d Cir. 2015) (explaining that challenged conduct sought to expand the patentee's intellectual property rights) (citing *FTC v. Actavis*, 133 S. Ct. 2223 (2013)).

128. *FTC v. Actavis*, 133 S. Ct. 2223, 2231 (2013) (explaining that this inquiry typically scrutinizes “traditional antitrust factors such as likely anticompetitive effects,

its holder a ‘bundle of rights,’ but any new exclusionary rights the holder buys to add to that bundle do not fall within the scope of the patent grant and [thus] do not fall within the scope of the patent’s antitrust immunity.”¹²⁹ Most anticompetitive uses of intellectual property rights, though, survive the rule of reason test.

Take *John Wiley & Sons, Inc. v. Schumacher* for instance.¹³⁰ Book publishers often produce multiple versions of a textbook: a more expensive U.S. version and a cheaper copy for international markets.¹³¹ At issue was book publisher John Wiley’s practice of barring third parties from importing its international textbooks into the United States,¹³² which was John Wiley’s statutory right under the U.S. Copyright Act.¹³³ Since restricting the importation of cheaper textbooks was said to offer neither a procompetitive justification nor consumer benefits, it was alleged that John Wiley had violated Section 1.¹³⁴ The court, unconvinced, dismissed the case, remarking that although John Wiley had likely harmed competition, it had done so in a manner allowed by the Copyright Act. In other words, because John Wiley had copyrights on the challenged textbooks, it had operated within the scope of its antitrust immunity.¹³⁵

redeeming virtues, market power, and potentially offsetting legal considerations present in the circumstances, such as . . . those related to patents”).

129. *F.T.C. v. Watson Pharm., Inc.*, 677 F.3d 1298, 1308–09 (11th Cir. 2012) (internal citation omitted).

130. *John Wiley & Sons, Inc. v. Shumacher*, No. 09 Civ. 2108(CM), 2010 WL 103886, at *1 (S.D.N.Y. Jan. 4, 2010).

131. See Melissa Goldberg, *A Textbook Dilemma: Shoulder the First Sale Doctrine Provide a Valid Defense for Foreign-Made Goods?*, 80 *FORDHAM L. REV.* 3057, 3078 (2012).

132. *Schumacher*, 2010 WL 103886, at *6 (“Essentially defendant argues that Plaintiffs violate the Sherman Act (Section 1) by restricting the resale of international versions of their textbooks in the United States.”).

133. The extent of John Wiley’s right to control importation of its international textbooks was texted in *Kirtsaeng v. John Wiley & Sons, Inc.*, 133 S. Ct. 1351 (2013). In this case, John Wiley argued that importing copyrighted international textbooks into the United States without its permission violated the textbooks’ copyrights because the first sale doctrine does not apply to internationally produced goods. *Id.* at 1357. The Court disagreed, ruling that so long as an internationally made good has been sold once, third parties may freely import the copyrighted good into the United States. *Id.* at 1355–56.

134. See *Schumacher*, 2010 WL 103886, at *6.

135. *Id.* (“The problem with defendant’s argument is that the United States copyright laws grant Plaintiffs the exclusive right ‘to distribute copies . . . or the copyright work to the public by sale or other transfer of ownership.’ Thus, the copyright laws empower Plaintiffs engage in the activity about which defendant complains.”) (citing 17 U.S.C. § 106 (2012)).

The other avenue to assert a Sherman Act claim against a rights holder is Section 2, which prohibits “monopoliz[ing] or attempt[ing] to monopolize . . . any part of the trade or commerce.”¹³⁶ In order to establish a Section 2 monopoly claim,¹³⁷ a plaintiff must demonstrate that a party possessing sufficient market power used “exclusionary conduct”¹³⁸ to create the “very real” possibility of a monopoly.¹³⁹ However, monopolies arising from intellectual property rights are not considered “unreasonably exclusionary,” but instead constitute a legitimate exercise of one’s property right.¹⁴⁰ So long as a holder does not engage in illegal tying,¹⁴¹ sham litigation,¹⁴² or fraudulent procurement of intellectual property rights, holders are generally free to charge “higher-than-competitive prices” for protected goods.¹⁴³

136. 15 U.S.C. § 2 (2012); *Matsushita Elec. Indus. Co. v. Cinram Int’l, Inc.*, 299 F. Supp. 2d 370, 376 (D. Del. 2004) (providing a recitation of Section 2).

137. *Comcast Corp. v. Behrend*, 133 S. Ct. 1426, 1438 (2013) (“[A]ntitrust injuries must be ‘of the type the antitrust laws were intended to prevent and that flo[w] from that which makes defendants’ acts unlawful.’”) (citing *Atl. Richfield Co. v. USA Petrol. Co.*, 495 U.S. 328, 334 (1990)).

138. *Broadcom Corp. v. Qualcomm Inc.*, 501 F.3d 297, 306 (3d Cir. 2007) (“Anticompetitive conduct may take a variety of forms, but it is generally defined as conduct to obtain or maintain monopoly power as a result of competition on some basis other than the merits.”); *Lenox Maclaren Surgical Corp. v. Midtronic Inc.*, No. 10-cv-02139-MSK-BNB, 2015 WL 7774187, at *5 (D. Colo. Dec. 3, 2015) (“To establish a claim for monopolization under Section 2 of the Sherman Act, Lenox must show a specific Defendant . . . willfully acquired or maintained this power through exclusionary conduct”); Brian F. Ladenburg, *Unilateral Refusals to Deal in Intellectual Property After Image Technical Services, Inc. v. Eastman Kodak Co.*, 73 WASH. L. REV. 1079, 1083 (1998).

139. *United States v. Grinnell Corp.*, 384 U.S. 563, 571 (1966); *see also Aspen Skiing Co. v. Aspen Highlands Skiing Corp.*, 472 U.S. 585, 595 (1985) (noting that the “possession of monopoly power in a relevant market” is a necessary condition of a Section 2 violation).

140. *Winston*, *supra* note 120, at 290 (“Patent holders have long perceived actions arising under the Patent Act to be immune from the Sherman Act . . .”).

141. An illegal tying arrangement differs from a legal tying arrangement. The primary difference concerns the amount of market power wielded by the patentee. *Ill. Tool Works Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45–46 (2006); *see generally* Christopher R. Leslie, *Unilaterally Imposed Tying Arrangements and Antitrust’s Concerted Action Requirement*, 60 OHIO ST. L.J. 1773 (1999).

142. *See generally* David R. Steinman & Danielle Fitzpatrick, *Antitrust Counterclaims in Patent Infringement Cases: A Guide to Walker Process and Sham-Litigation Claims*, 10 TEX. INTELL. PROP. L.J. 95 (2001).

143. *In re Indep. Serv. Orgs. Antitrust Litig.*, 203 F.3d 1322, 1327–28 (Fed. Cir. 2000) (“In the absence of any indication of illegal tying, fraud in the Patent and Trademark Office, or sham litigation, the patent holder may enforce the statutory right to exclude others from making, using, or selling the claimed invention free from liability under the antitrust laws. We therefore will not inquire into his subjective motivation for exerting his statutory rights, even though his refusal to sell or license his patented invention may have an

For example, in *Schor v. Abbott Laboratories*,¹⁴⁴ Abbott allegedly used an impermissible monopoly leveraging scheme to sell its patented drug Norvir.¹⁴⁵ Drugs are commonly administered as cocktails in which one drug's efficacy is enhanced when combined with another drug. The plaintiffs in *Schor* claimed Abbott was selling Norvir too cheaply while charging too much for the cocktail containing Norvir.¹⁴⁶ Supposedly Norvir's low price was intended to drive competitors out of the market, allowing Abbott to then raise Norvir's price to an anticompetitive level.¹⁴⁷ The Seventh Circuit's Judge Easterbrook disagreed with the plaintiffs' theory, ruling that exploiting drug prices falls squarely within Abbott's patent rights: "[t]he price of Norvir cannot violate the Sherman Act: a patent holder is entitled to charge whatever the traffic will bear."¹⁴⁸ Thus without an exclusionary act rising above monopoly pricing, the market inefficiencies created by Abbott's scheme are the expected consequences of its patent rights.¹⁴⁹

Likewise in *In re Adderall XR Antitrust Litigation*,¹⁵⁰ pharmaceutical giant Shire sought to avoid litigating the validity of its Adderall patent by licensing the drug to competing generic makers.¹⁵¹ The problem was Shire—in endeavoring to maintain its Adderall monopoly—allegedly violated Section 2 by undersupplying the generic companies' orders and also charging "supra-competitive" prices.¹⁵² The court ruled that Shire, as a patent holder, had no antitrust duty to deal with competitors even if market

anticompetitive effect, so long as that anticompetitive effect is not illegally extended beyond the statutory patent grant."); *Dawson Chem. Co. v. Rohm & Haas Co.*, 448 U.S. 176, 221 (1980) ("[T]he boundary of a patent monopoly is to be limited by the literal scope of the patent claims.").

144. 457 F.3d 608 (7th Cir. 2006).

145. *Id.* at 610.

146. *Id.* at 610–11.

147. *Id.* at 610 ("Schor calls the strategy 'monopoly leveraging': Abbott is trying to use its patent to obtain a monopoly of all protease inhibitors by inducing HIV patients to buy Kaletra, which will lead other vendors to drop out of the market. Once rivals' products have been vanquished, Abbott will be able to jack up the price of Kaletra as well as Norvir.").

148. *Id.*

149. *See id.* at 611–12. The court also had misgivings about the economics of the plaintiff's allegations. *Id.* Judge Easterbrook recited a number of legitimate, procompetitive rationales explaining why the market might be improved by Abbott's strategy. *Id.*

150. 754 F.3d 128 (2d Cir. 2014).

151. *See id.* at 131.

152. *Id.* ("Shire relegated them to 50-60% of the market, instead of the 90% share they might have been expected to capture. . . . This, in turn, allowed Shire to fix, raise, maintain, and/or stabilize the price of AXR Product at supra-competitive levels.").

harms resulted.¹⁵³ In fact, Shire's willingness to partially fill its rivals' orders likely increased competition as Shire could have completely foreclosed competitors from the market.¹⁵⁴

While antitrust traditionally permits holders to burden markets when acting within their intellectual property rights,¹⁵⁵ there is no bright line rule.¹⁵⁶ The Supreme Court recently said as much in *F.T.C. v. Actavis, Inc.*¹⁵⁷ in which the Court held acting within one's intellectual property rights is a substantial factor tipping against antitrust liability.¹⁵⁸ A dissenting Chief Justice Roberts was incredulous, noting the Court has always adhered to the principle that a patent "provides an exception to antitrust law, and the scope of the patent—i.e., the rights conferred by the patent—forms the zone within which the patent holder may operate without facing antitrust liability."¹⁵⁹ Nonetheless, the *Actavis* majority held a reverse payment settlement,¹⁶⁰ even when falling within a patent holder's intellectual property grant, may lead to an antitrust violation if the holder cannot justify the agreement with some competitive rationale.¹⁶¹ In short, the manner in

153. *Id.* at 135 ("The mere existence of a contractual duty to supply goods does not by itself give rise to an antitrust 'duty to deal.'").

154. *Id.* (stating that Shire did the opposite of eliminate competition by licensing the drug to competitors).

155. *See* *FTC v. Actavis* 133 S. Ct. 2223, 2231 (2013) ("To strike that balance, the Court asked questions such as whether 'the patent statute specifically gives a right' to restrain competition in the manner challenged . . .").

156. *See generally* Jennifer D. Cieluch, *The FTC Has a Dog in the Patent Monopoly Fight: Will Antitrust Bite Kill Generic Challenges?*, 13 DUKE L. & TECH. REV. 267 (2015) (discussing the Supreme Court's reconfiguration of the Federal Circuit's old rule providing antitrust immunity for almost all acts falling within an intellectual property holder's rights).

157. *Actavis*, 133 S. Ct. at 2223.

158. *Id.* at 2231 ("[C]ontrary to the Circuit's view that the only pertinent question is whether 'the settlement agreement . . . fall[s] within' the legitimate 'scope' of the patent's 'exclusionary potential,' this Court has indicated that patent and antitrust policies are both relevant in determining the 'scope of the patent monopoly'—and consequently antitrust law immunity—that is conferred by a patent.") (internal citation omitted).

159. *Id.* at 2238 (Roberts, C.J., dissenting).

160. *F.T.C. v. Watson Pharm., Inc.*, 677 F.3d 1298, 1301 (11th Cir. 2012) ("In this type of settlement, a patent holder pays the allegedly infringing generic drug company to delay entering the market until a specified date, thereby protecting the patent monopoly against a judgment that the payment is invalid or would not be infringed by the generic competitor.").

161. *Actavis*, 133 S. Ct. at 2237 ("In sum, a reverse payment, where large and unjustified, can bring with it the risk of significant anticompetitive effects; one who makes such a payment may be unable to explain and to justify it; such a firm or individual may well possess market power derived from the patent; a court, by examining the size of the payment, may well be able to assess its likely anticompetitive effects along with its potential justifications without litigating the validity of the patent.").

which intellectual property rights have been excluded from the scope of antitrust law may encourage holders to overly exploit their patent or copyright's exclusionary nature to the detriment of markets and competition.

IV. THE LOGIC AND VALUE OF PIRACY

Although holders enjoy the freedom to pursue anticompetitive arrangements, the U.S. market appears to function effectively.¹⁶² The intellectual property system supports high levels of innovation without high levels of deadweight loss.¹⁶³ The United States is ranked consistently as a global leader in research and development spending, innovation, and economic growth.¹⁶⁴ Although intellectual property rights *should* incentivize anticompetitive behavior, holders seem to avoid the upper bounds of monopolistic conduct, promoting the public's good and rejecting their own self-interest. At first glance, the holders' conduct makes little sense.

This Part credits piracy with increasing competition, innovation, and efficiency in markets with high levels of intellectual property. The process is explained in two steps. First, the act of infringement tends to be profitable only when a patented or copyrighted good is sold at an exceptionally overpriced or anticompetitive manner rather than competitively. Second, the best strategy for a holder to fight infringement is to reduce the good's price or eliminate anticompetitive practices.

162. See Luisa R. Blanco et al., *The Impact of Research and Development on Economic Growth and Productivity in the U.S. States*, 82 S. ECON. J. 915 (2016) (noting that the United States is ranked in the top ten countries for research and development which is a leading determinant of sustainable economic growth); see also John Wu, *Fueling Innovation: The Role of R&D in Economic Growth*, INNOVATION FILES (Dec. 17, 2015), <http://www.innovationfiles.org/fueling-innovation-the-role-of-rd-in-economic-growth/> (demonstrating that the United States is a global leader in research and development which has a substantial impact on economic growth).

163. Deadweight loss refers to a situation in which a market in equilibrium is less efficient than its expected production. Press Release, World Intellectual Prop. Org., *Global Innovation Index 2014: Switzerland, UK and Sweden Lead Rankings with Encouraging Signs from Sub-Saharan Africa* (July 18, 2014), http://www.wipo.int/pressroom/en/articles/2014/article_0010.html (ranking the United States as sixth in its list of the world's most innovative countries).

164. *Id.*; see Karsten Strauss, *The World's Most Competitive Countries 2016: U.S. No Longer No. 1*, FORBES (May 30, 2016, 11:00 AM), <http://www.forbes.com/sites/karstenstrauss/2016/05/30/the-worlds-most-competitive-countries-2016-u-s-no-longer-no-1/> (reviewing a study finding that the United States currently has the third most competitive economy after being the most competitive economy over the past three years).

A. THE ECONOMICS OF INFRINGEMENT

From an economic perspective, the act of piracy is a rational response to situations when a patented or copyrighted good is sold at a substantially above-market price. Consider the corollary about why it makes little sense to infringe upon the rights of a competitively priced item. Competitive markets offer only small profits because the nature of competition among sellers drives prices down to a good's marginal cost of production.¹⁶⁵ Infringers cannot rationally¹⁶⁶ compete in a competitive market because they must incorporate the costs of infringement (i.e., monetary damages, equitable remedies, and/or criminal penalties) into a pirated good's price, which patent and copyright owners avoid.¹⁶⁷ In other words, a legitimate producer can sell a good at around its production costs, whereas infringing goods must be sold at higher prices entailing production costs *plus* civil and/or criminal penalties. Because the cost of infringement tends to be greater than the modest profits available in competitive markets, it is typically unprofitable and thus irrational for one to pirate a competitively priced good.

It is similarly irrational for consumers to purchase an infringing good sold at the same or similar price as the licit item. Indeed, buyers incur additional costs and gain fewer benefits when purchasing an infringing

165. See *Competition*, BLACK'S LAW DICTIONARY 278–79 (7th ed. 1999) (“A completely efficient market situation characterized by numerous buyers and sellers . . .”); see also Jeffrey M. Rosenfeld, *Spiders and Crawlers and Bots, Oh My: The Economic Efficiency and Public Policy of Online Contracts that Restrict Data Collection*, 2002 STAN. TECH. L. REV. 3, 17 (2002) (“[I]n a market system of homogeneous products and inconsequential search costs, the conventional Bertrand economics model predicts that price competition among vendors will reduce prices to the marginal cost of production . . .”); *id.* (noting that profits tend to be minimal, or absent, in perfect markets).

166. Economic theory posits that actors—including pirates—are rational, meaning that they engage in activities with the greatest net utility (defined as the most benefits minus the costs). See George M. Cohen, *Posnerian Jurisprudence and Economic Analysis of Law: The View from the Bench*, 133 U. PA. L. REV. 1117, 1158 n.228 (1985) (discussing rationality as an economic behavior as applied to intellectual property infringement); *cf.* Apik Minassian, *The Death of Copyright: Enforceability of Shrinkwrap Licensing Agreements*, 45 UCLA L. REV. 569, 596–97 (1997) (discussing emerging black markets as rational economic decisions based upon legal incentive structures).

167. 17 U.S.C. § 506(a)(2) (2012) (criminalizing willful copyright infringement); 17 U.S.C. § 504(a) (2012) (establishing civil penalties for copyright infringement); 35 U.S.C. § 284 (2012) (setting civil penalties for patent infringement claims); see also Erin Ann O'Hara, *Brain Plasticity and Spanish Moss in Biolegal Analysis*, 53 FLA. L. REV. 905, 928 (2001) (remarking that those who engage in black market activities are often exercising advanced cost/benefit analysis where the costs are derived from the penalties associated with illegal behavior).

work.¹⁶⁸ With respect to the advantages of purchasing a legitimate product, consumers often receive express and implied warranties guaranteeing quality and performance.¹⁶⁹ A commonly available warranty is the implied warranty of merchantability, which allows buyers to recoup the value of a poorly performing good.¹⁷⁰ There are also contract and tort-based causes of action, which can be exercised individually or as part of a class that allow consumers to sue producers who sell dangerous, deceptive, or ineffective goods.¹⁷¹ Most of these causes of action are unavailable, either practically or legally, when purchasing a pirated item.¹⁷² Furthermore, buyers of infringing goods may have to navigate the black market, which poses unique risks attendant to criminal networks.¹⁷³ In turn, since legitimate goods offer consumers superior benefits, while illicit products come with greater disadvantages, consumers tend to favor purchasing legitimate goods over their black market counterparts even when both products are sold at similar prices. A pirated good must therefore be significantly cheaper than its legitimate counterpart before a consumer is likely to purchase it.

But when a holder charges supracompetitive prices for a patented or copyrighted good—i.e., a price that is substantially above its marginal cost of production—the resulting pricing discrepancy can attract and incentivize piracy. Infringement becomes rational when a holder prices her good at a level so far above its marginal cost of production that a pirate can reproduce

168. See Daniel Bukszpan, *Counterfeiting: Many Risks, Many Victims*, CNBC (July 13, 2000, 5:00 PM), <http://www.cnbc.com/id/38229835> (discussing the hidden harms consumers face when purchasing infringing items).

169. See, e.g., U.C.C. § 2-314 (AM. LAW INST. & UNIF. LAW COMM'N 1977) (explaining that the warranty of merchantability is an implied warranty created without express words in transactions where at least one party is considered a merchant, giving purchasers a warranty in the sale of goods that the good purchased shall perform at a reasonably high quality); U.C.C. § 2-714 (AM. LAW INST. & UNIF. LAW COMM'N 1977) (providing buyers with contractual remedies when a seller breaches contract for sale of goods).

170. *Balog v. Center Art Gallery-Haw., Inc.* 745 F. Supp. 1556, 1563 n.16 (D. Haw. 1990) (discussing the implied warranty of merchantability's lack of application to pirated goods).

171. See generally M. Stuart Madden, *The Duty to Warn in Products Liability: Contours and Criticism*, 89 W. VA. L. REV. 221, 222 (1987) (discussing consumer rights when purchasing a dangerous good).

172. See, e.g., *Porter v. Wertz*, 53 N.Y.2d 696 (N.Y. 1981) (finding that a buyer bore the risk for purchasing a stolen good because he bought the item in an illicit manner from a vendor who could not be considered to be a merchant).

173. See, e.g., Steven Davenport et al., *Controlling Underage Access to Legal Cannabis*, 65 CASE W. RES. L. REV. 541, 544 (2015) (“Black markets generate substantial harms above and beyond mere provision of the substance. Those harms include crime, violence, and corruption [and] a potentially more dangerous product . . .”).

it, incorporate civil and criminal penalties in its costs, and still generate a profit. For example, if a patented drug costs \$1 per pill to produce, civil infringement damages are \$5,000 per pill, and the drug is sold for \$10,001, a black marketer can rationally profit from its infringement by selling the drug for more than \$5000 per pill but less than \$10,000. This is because if the pirate sells the drug for more than \$10,000 per pill, consumers will likely buy the licit drug instead, and the pirate cannot sell for less than \$5000 since the cost of infringement will cannibalize any profits. The corollary is that the patent holder should be able to charge up to \$5,000 for the \$1 pill without incentivizing black market copies. So as a protected good's price climbs farther away from a competitive level, a pirated version becomes more likely.

Other anticompetitive behaviors are just as likely to attract black market entrants. For example, when a tying arrangement raises the price of a patented or copyrighted good, black marketers can profitably supply the protected item without the tied good, infringing upon the holder's intellectual property rights, even after paying production and infringement costs. As previously mentioned, record companies in the music industry were able to compete against pirated digital music by untying the albums, selling their tracks individually.¹⁷⁴ Explaining the situations in which infringement becomes likely is only the first step; the next Section explains infringement's pro-market effects.

B. THE EFFICIENT EFFECTS OF BLACK MARKETS

Piracy enhances competition and efficiency in situations where a holder adopts her best possible anti-piracy strategy, which is to directly compete against the infringing good. When a holder's market becomes saturated with unauthorized copies, a holder's first instinct may be to pursue legal remedies, but even if the law can reduce degrees of infringement, most black marketers have incorporated the costs of civil and criminal penalties into their business models.¹⁷⁵ So even when a holder can extract damages from an infringer, the conduct is likely to continue. Another problem with legal remedies stems from the difficulty of sanctioning even the most brazen

174. Steve Knopper, *iTunes' 10th Anniversary: How Steve Jobs Turned the Industry Upside Down*, ROLLING STONE (Apr. 26, 2013), <http://www.rollingstone.com/music/news/itunes-10th-anniversary-how-steve-jobs-turned-the-industry-upside-down-20130426> (“Apple’s iTunes Music Store, which opened ten years ago this Sunday, exists for one major reason: Napster.”).

175. David M. Hornik, *Combating Software Piracy: The Softlifting Problem*, HARV. J.L. & TECH. 377, 390 (1994) (discussing the manner in which holders can demonstrate that sales of pirated goods have diminished their sales); see O’Hara, *supra* note 167, at 928.

acts of infringement. Not only do most piracy networks operate clandestinely, a significant portion of piracy occurs internationally where, in light of intellectual property law's presumption against extraterritoriality, U.S. IP laws have little efficacy.¹⁷⁶ Combined with the lack of capacity of certain jurisdictions to remedy patent and copyright infringement, enforcing one's intellectual property rights can be nearly impossible.¹⁷⁷ So despite the worthiness of a holder's claim, legal redress can be ineffective when the economics of piracy is rational and the location of infringement is out of reach.¹⁷⁸

Left with little recourse, most holders choose to compete directly against piracy in the open market.¹⁷⁹ By eliminating a tying arrangement or lowering a good's price to approximate the infringing good's cost, a holder may persuade consumers to purchase the legitimate item instead of the pirated version. It is not necessary to charge a true market price—which would effectively relinquish one's monopoly rights—but instead the good's price must only be competitive enough to diminish the black market's economic logic. After all, as long as a holder asks only for a reasonably above market premium, pirates are likely to determine that the costs of infringement are too expensive while consumers find the risks dissatisfactory. Using the prior pharmaceutical hypothetical, one must only reduce their patented drug's cost down towards \$5,000 at which point piracy stops being profitable while still generating enough profit for the patentee to incentivize innovation. Even in situations when the good has a high cost of production, a substantial margin between the cost of production and sales price can incentivize infringement. Thus, because it is a holder's most effective strategy to be more competitive when faced with piracy, infringement can increase aggregate market efficiency, resulting in cheaper and more competitively sold goods.

In fact, the true prophylactic effect of pirated goods tends to go unnoticed because *the threat* of infringement encourages patent and

176. See Hornik, *supra* note 175.

177. See Christopher Buccafusco & Jonathan Masur, *Innovation and Incarceration: An Economic Analysis of Criminal Intellectual Property Law*, 87 S. CAL. L. REV. 275, 329 (2014) (“Of course, there is always the possibility that an infringer will be a foreign firm whose assets cannot be seized by American courts. To the extent that black markets for patented products have developed, they have typically been foreign based, for precisely this reason.”).

178. See generally Peter K. Yu, *P2P and the Future of Private Copying*, 76 U. COLO. L. REV. 653, 702 (2005) (implying that illegal music downloading is likely to continue despite the availability of legal remedies).

179. See *infra* Part IV (providing examples of patent and copyright holders becoming more competitive in response to the black market for their goods).

copyright holders to embrace more competitive behaviors.¹⁸⁰ Similar to how penal codes are primarily intended to dissuade individuals from initially choosing antisocial behaviors rather than punishing lawbreakers, piracy's threat dissuades holders from adopting anticompetitive business strategies from the beginning.¹⁸¹ For instance, Netflix CEO David Wells stated that Netflix's prices subscriptions are based upon a region's level of piracy: the more piracy a region has, the cheaper the service is.¹⁸² Another example is Microsoft, which sells software at lower prices in countries suffering from higher levels of piracy in order to attract commerce away from the black market.¹⁸³ Firms are thus fully aware of the threat posed by infringement and the manner in which pirates target anticompetitive industries. Instead of reacting after infringement arises, companies like Netflix and Microsoft attempt to deter piracy by offering more competitively priced products from their launch.

Furthermore, piracy helps intellectual property achieve its intended purpose. Recall that an ideal level of intellectual property should permit innovators to recoup their costs of innovation but not to overly tax markets.¹⁸⁴ In other words, intellectual property is meant to benefit innovation, not innovators. Because it is generally unprofitable to infringe upon the rights of a competitively priced good,¹⁸⁵ a holder's behavior must be exceptionally anticompetitive before infringement becomes rational. Piracy is therefore likely to enhance the intellectual property system's purpose because it helps to mitigate some of the burdens intellectual property imposes on markets without impeding innovation or preventing holders from recouping research and development costs.

180. See POSNER, *supra* note 95, at 198 ("The economist's standard response to a black market is to propose abolition of the price control that has brought it into existence."); but see David Orozco, *Strategic Legal Bullying*, 13 N.Y.U. J.L. & BUS. 137, 143–44 (2016) (arguing that larger, more resourceful competitors may exploit "efficient infringement" to unfairly compete against smaller competitors).

181. *United States v. Whitehead*, 559 F.3d 918, 920 (9th Cir. 2009) (remarking that the punishment aspect of criminal law is meant to serve as a deterrent, discouraging individuals from committing crimes); see also POSNER, *supra* note 95.

182. See *infra* notes 252–58 and accompanying text.

183. Owen Fletcher, *Fighting China's Pirates*, WALL ST. J. (Oct. 26, 2010, 12:01 AM), <https://www.wsj.com/articles/SB10001424052748704300604575554701758669106?mg=id-wsj>.

184. See Benjamin N. Roin, *Intellectual Property Versus Prizes: Reframing the Debate*, 81 U. CHI. L. REV. 999, 1023 (2014).

185. See *supra* notes 165–168 and accompanying text.

V. THE SMARTPHONE WARS AND OTHER GREAT MOMENTS IN INFRINGEMENT

The following case studies examine when anticompetitive uses of intellectual property rights have incentivized piracy, causing markets to become more competitive, efficient, and innovative.

A. THE PATENT WARS

Apple and Samsung are, paradoxically, symbiotic business partners and fierce adversaries. Their relationship started in 1995 when Apple contracted Samsung to manufacture component parts for several of its products, which would later include the iPhone.¹⁸⁶ Because Samsung aspired to make more than just component parts, it began producing and selling its own line of smartphones known as the Galaxy series.¹⁸⁷ Several years later, Samsung's Galaxy smartphones sparked "the Smartphone Patent War," fundamentally changing the nature of competition and innovation in the smartphone market.¹⁸⁸

An integral part of Apple's business model involves patenting all aspects of the creative process.¹⁸⁹ This strategy not only allows Apple to impede competitors from copying the products it spends fortunes developing but also permits Apple to fill the market with patents, creating "patent thickets."¹⁹⁰ A patent thicket is an industry saturated with patents making it difficult for entrants to produce competing goods, as they must either license their competitors' blocking patent(s)¹⁹¹ or expend the resources to design around them.¹⁹² Oftentimes a patent thicket compels

186. Kurt Eichenwald, *The Great Smartphone War*, VANITY FAIR (June 2014), <http://www.vanityfair.com/news/business/2014/06/apple-samsung-smartphone-patent-war>.

187. *Id.*

188. Jessie Yang, *The Use and Abuse of Patents in the Smartphone Wars: A Need for Change*, 5 CASE W. RES. J.L. TECH. & INTERNET 239 (2014).

189. See Eichenwald, *supra* note 186.

190. Jeffrey I. D. Lewis & Ryan M. Mott, *The Sky Is Not Falling: Navigating the Smartphone Patent Thicket*, WIPO MAG. (Feb. 2013), http://www.wipo.int/wipo_magazine/en/2013/01/article_0002.html.

191. In the situation where many patents are a part of a good, a blocking patent is a critical patent that others need to license in order to produce and sell the good. See, e.g., Robert P. Merges, *A Few Kind Words for Absolute Infringement Liability in Patent Law*, 31 BERKELEY TECH. L.J. 1, 25 & n.59 (2016); Margaret Sampson, *The Evolution of the Enablement and Written Description Requirements Under 35 U.S.C. 112 in the Area of Biotechnology*, 15 BERKELEY TECH. L.J. 1233, 1247 (2000) (offering examples of blocking patents).

192. *But see* Carrier, *supra* note 88, at 1069 (describing the advantages of a patent thicket if it causes competitors to invent around the blocking patent, creating innovation).

rival companies to refrain from entering the market all together, stifling competition and innovation.¹⁹³ Apple, like other companies, uses their patents as both swords and shields, protecting the innovative process while also deterring aspiring competitors.¹⁹⁴

As Apple commanded a greater share of the smartphone market, commentators began to suggest that aspects of Apple's business model might violate the Sherman Act.¹⁹⁵ Not only was Apple charging prices that no other company had previously asked for a cellphone but Apple was also, perhaps, using a classic tying arrangement.¹⁹⁶ Apple initially designed the iPhone to work exclusively with AT&T, which, by bundling the iPhone to a specific service, increased the cost of switching one's provider or phone.¹⁹⁷ The ensuing antitrust complaint alleged that Apple sought to monopolize the after-market services for voice and data since it entered into a five-year exclusivity contract with AT&T while also requiring consumers to sign a two-year contract for service, thereby preventing consumers from using their iPhones with another provider.¹⁹⁸ According to the plaintiffs, Apple's arrangement unreasonably and illegally compelled consumers to renew their voice and data agreements; after all, consumers may be more likely to remain with AT&T at the end of their contract knowing that one's iPhone would be inoperable with a different provider.¹⁹⁹

Critics also asserted that Apple's patent thicket was anticompetitive.²⁰⁰ By refusing to license foundational technology or charging extraordinary

193. Marshall Leaffer, *Patent Misuse and Innovation*, 10 J. HIGH TECH. L. 142, 163 (2010) (finding that patent thickets can "suppress competition").

194. See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119, 121 (Adam B. Jaffe et al. eds., 2001).

195. See, e.g., Nick Slatt, *Apple Responds to Spotify Over Anticompetitive Claims*, VERGE (July 1, 2016, 1:34 PM), <http://www.theverge.com/2016/7/1/12082398/apple-music-spotify-app-store-legal-feud> (discussing allegations that Apple employs anticompetitive tactics).

196. Jeffrey Paul Jarosch, *Reassessing Tying Arrangements at the End of AT&T's iPhone Exclusivity*, 2011 COLUM. BUS. L. REV. 297, 326 (2011) (reviewing claims of Apple's tying arrangement with AT&T).

197. *In re Apple & AT&T Antitrust Litig.*, 596 F. Supp. 2d 1288, 1303 (N.D. Cal. 2008).

198. *Id.*

199. *Id.* at 1310.

200. See, e.g., Steve Lohr, *Apple-Samsung Case Shows Smartphone as Legal Magnet*, N.Y. TIMES (Aug. 25, 2012), http://www.nytimes.com/2012/08/26/technology/apple-samsung-case-shows-smartphone-as-lawsuit-magnet.html?_r=0 (discussing how the smartphone industry has created a system inundated with patents that Judge Richard Posner has described as "chaos").

fees to do so,²⁰¹ Apple's volume of patents prevented upstart companies from competing in the smartphone market. Indeed, the number of active and dormant patents filling the smartphone market increased the odds that entrants would accidentally infringe an existing patent. Because in such an instance a court could issue a permanent injunction barring the sale, use, and production of the infringing good,²⁰² companies willing to navigate a patent thicket risked wasting resources on developing an ultimately banned good.²⁰³ This spawned allegations that Apple's intellectual property strategy was founded upon securing an overwhelming sum of patents intended to squelch competition.²⁰⁴

When Samsung began to sell Galaxy smartphones, Apple's patent thicket presented a significant barrier to entry, though Samsung was hardly deterred. Samsung chose to offer its smartphones in countries where consumers could also purchase an iPhone. According to Apple's CEO and founder Steve Jobs, the Galaxy mimicked almost all aspects of the iPhone, infringing upon many of Apple's patents.²⁰⁵ And Mr. Jobs was likely correct.²⁰⁶ Observers remarked that in pursuit of designing high quality smartphones intended to compete against the iPhone, Samsung brazenly copied Apple's ingenuity, daring its competitor to sue.²⁰⁷ Apple filed suit.²⁰⁸

201. See Adam Mossoff, *The Rise and Fall of the First American Patent Thicket: The Sewing Machine*, 53 ARIZ. L. REV. 165, 166–67 (2011) (describing how a patent thicket may impede innovation and frustrate competition).

202. Gavin D. George, *What is Hiding in the Bushes? eBay's Effect on Holdout Behavior in Patent Thickets*, 13 MICH. TELECOMM. & TECH. L. REV. 557, 567 (2007) (describing how injunctions in patent thickets can give rise to holdup behaviors).

203. *Id.* at 568.

204. See Eichenwald, *supra* note 186.

205. Ewan Spence, *Tim Cook Defused Steve Jobs' Thermonuclear War, Then He Took Down Android*, FORBES (Jan. 31, 2015, 6:15 AM), <http://www.forbes.com/sites/ewanspence/2015/01/31/how-apple-beat-android/> (quoting Steve Jobs as stating "I will spend my last dying breath if I need to, and I will spend every penny of Apple's \$40 billion in the bank, to right this wrong. I'm going to destroy Android, because it's a stolen product. I'm willing to go thermonuclear on this.").

206. Eichenwald, *supra* note 186 ("According to various court records and people who have worked with Samsung, ignoring competitors' patents is not uncommon for the Korean company.").

207. *Id.*

208. Complaint for Patent Infringement, Federal False Designation of Origin and Unfair Competition, Federal Trademark Infringement, State Unfair Competition, Common Law Trademark Infringement, and Unjust Enrichment, *Apple, Inc. v. Samsung Elecs. Co.*, No. 11–CV–01846–LHK (N.D. Cal. Apr. 15, 2011), 2011 WL 1461508.

Samsung countersued claiming some of Apple's patents were invalid while others infringed upon their patents.²⁰⁹ Due to the global nature of the smartphone market, both companies filed infringement lawsuits in North America, Australia, Europe, and Asia.²¹⁰ Eventually Apple and Samsung agreed to wage their war exclusively in the United States, each filing claims in the U.S. Northern District of California.²¹¹ Their litigation spawned several independent lawsuits, at least eight written opinions, numerous trips to the Federal Circuit, a couple of jury trials, and over a billion dollars in legal fees.²¹² The Federal Circuit ultimately resolved the first set of claims, finding Samsung had infringed Apple's design patents protecting the iPhone's bezel, resulting in an initial \$400 million award.²¹³ The Supreme Court has since overruled the Federal Circuit's method of calculating damages, remanding the case to the lower court.²¹⁴ The Federal Circuit then settled the companies' remaining claims, nullifying Apple's \$119.6 million jury award because the Apple patents at issue were either invalid or had not been violated.²¹⁵ Although the court awarded Samsung \$158,400 royalty for Apple's infringement, Apple was the net winner.²¹⁶ The size of the district court's award was meant to deprive Samsung of all its profits made from selling Galaxy phones in the United States, ostensibly to discourage infringement.

209. Samsung Entities' Answer, Affirmative Defenses, and Counterclaims to Apple Inc.'s Amended Complaint, *Apple, Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846-LHK (N.D. Cal. June 30, 2011), 2011 WL 2731786.

210. Gary L. Benton et al., *The Android Wars: A New Look at the Apple v. Samsung Dispute*, SILICON VALLEY ARB. & MEDIATION CTR. 68 (Sept. 2014), www.svamc.org/wp-content/uploads/2015/08/The-Android-Wars-A-New-Look-at-the-Apple-v.-Samsung-Case.pdf.

211. Mikey Campbell, *Apple and Samsung Agree to Settle All Non-US Litigation*, APPLEINSIDER (Aug. 5, 2014, 7:09 PM), <http://appleinsider.com/articles/14/08/05/apple-and-samsung-settle-all-non-us-patent-disputes>.

212. Vivek Wadhwa, *Why Apple's Defeat to Samsung Was a Victory for Innovation*, HUFFINGTON POST (Mar. 4, 2016, 9:35 AM), http://www.huffingtonpost.com/vivek-wadhwa/why-apples-defeat-to-samsung-was-a-victory-for-innovation_b_9382964.html; Sarah Burstein, *The "Article of Manufacture" in 1887*, 32 BERKELEY TECH. L.J. 1 (2017).

213. *Apple, Inc. v. Samsung Elecs. Co.*, 678 F.3d 1314 (Fed. Cir. 2012); Daniel Fisher, *Samsung Wins at Supreme Court in \$400 Million Battle Over Apple iPhone Design*, FORBES (Dec. 6, 2016, 11:40 AM), <https://www.forbes.com/sites/danielfisher/2016/12/06/samsung-wins-at-supreme-court-in-400-million-battle-over-apple-iphone-design/>.

214. Petition for a Writ of Certiorari, *Samsung Elecs. Co. v. Apple Inc.*, 136 S. Ct. 1453 (2016) (No. 15-777), 2015 WL 10435543.

215. *Apple Inc. v. Samsung Elecs. Co.*, 816 F.3d 788, 792–94, 814 (Fed. Cir. 2016).

216. See Mark Wilson, *The Bizarre Patent History Behind the Apple v. Samsung Battle*, FASTCODESIGN.COM (Aug. 11, 2016), <https://www.fastcodesign.com/3062728/the-bizarre-patent-cases-that-could-make-apple-399-million>.

By infringing upon each other's patents, Apple and Samsung likely increased competition and efficiency in the smartphone market. The most obvious result was the global lessening of smartphone prices.²¹⁷ Samsung's navigation of Apple's patent thicket expanded the smartphone market beyond a single-player, creating much needed competition. A multinational price war resulted as Apple and Samsung sought to capture segments of previously uncompetitive markets.²¹⁸ Their contest remains especially fierce in India, where both companies have substantially cut smartphone prices in hopes of generating brand loyalty.²¹⁹ This development may have also caused Apple and AT&T to terminate their purported tying arrangement so that Apple could better compete against Samsung using additional carriers; likewise, AT&T sought to include Samsung smartphones within its inventory, increasing intra and cross-company competition.²²⁰

Perhaps most importantly, the patent war boosted industry-wide innovation. Soon after Samsung forced its way into the smartphone market, the industry evolved, by certain metrics, into the most innovative sector.²²¹ For instance, Apple sought to compete against Samsung in emerging markets by designing a cheaper iPhone priced closer to the more affordable Galaxy.²²² Consequently, industry observers credited the competition

217. Matt Hamblen, *Smartphone Prices Are Dropping, and Will Continue to Dip Through '18*, COMPUTER WORLD (May 19, 2014, 2:41 PM), <http://www.computerworld.com/article/2489944/smartphones/smartphone-prices-are-dropping--and-will-continue-to-dip-through--18.html>.

218. See Erik Sherman, *Apple, Samsung and the New Price War*, CBS NEWS (Apr. 10, 2013, 7:42 AM), <http://www.cbsnews.com/news/apple-samsung-and-the-new-price-war/> (noting the price wars emerging in Brazil, Asia, and Europe).

219. See Kevin Bostic, *Price War Breaks Out Between Apple and Samsung in India*, APPLEINSIDER (Apr. 16, 2014, 3:07 PM), <http://appleinsider.com/articles/13/04/16/price-war-breaks-out-between-apple-and-samsung-in-india>

220. Marguerite Reardon, *AT&T Prepares for the End to iPhone Exclusivity*, CNET (Nov. 12, 2010, 4:00 AM), <https://www.cnet.com/news/at-t-prepares-for-the-end-to-iphone-exclusivity/>.

221. Lauren F. Friedman, *The IT Industry Is Out-Innovating All Others By a Longshot*, BUS. INSIDER (May 29, 2015, 1:56 PM), <http://www.businessinsider.com/most-innovative-industries-2015-5>; Julija Kaminskaite, *The 10 Most Innovative Industries*, GLOBAL INNOVATION MGMT. INST. (May 3, 2016), <https://www.giminstitute.org/top-10-most-innovative-industries/>.

222. Omar El Akkad & Iain Marlow, *Commodity Boom: The Smartphone's Global Price War*, GLOBE & MAIL (June 1, 2013), <http://www.theglobeandmail.com/technology/tech-news/commodity-boom-the-smartphones-global-price-war/article12299152/> (discussing Apple's decision to design a cheaper iPhone in light of the competition generated from Samsung and rival smartphone producers).

between Samsung and Apple for creating a market animated by rapid innovation.²²³

Samsung's decision to infringe was also rational. Although the district court disgorged the company of its U.S. profits from Galaxy sales, Samsung likely accrued more benefits from infringing Apple's patents than had it never marketed the Galaxy. Not only was Samsung able to establish itself in the United States for the sake of future Galaxy iterations, these smartphones are incredibly profitable in non-U.S. markets.²²⁴ While Apple likely lost revenue due to the deterioration of its monopoly, the company still generates enough profits from the iPhone to retroactively incentivize the product's research and development.²²⁵ In other words, Samsung infringed Apple's patents based upon its assessment that the lack of competition in the smartphone market offered a lucrative opportunity. The ensuing patent war brought about the predicted benefits of increased competition and innovation without undermining the patent system's incentives to innovate.

The following narratives likewise illustrate piracy's virtues. In these case studies, anticompetitive uses of intellectual property rights created pricing discrepancies, which in turn attracted and generated competition between licit and pirated goods. In each instance the result was a more competitive market.

B. THE AIDS DRUG WAR IN SOUTH AFRICA

Although by 2001 pharmaceutical breakthroughs had significantly reduced the fatality rate of AIDS in developed countries,²²⁶ developing countries had yet to experience the same progress. During this period, nearly four million South Africans had become infected by the AIDS virus,

223. Angelo Young, *Smartphone Supremacy: How Samsung is Beating Apple—By Design*, SALON (Aug. 5, 2016, 9:00 AM), <http://www.salon.com/2016/08/05/smartphone-supremacy-how-samsung-is-beating-apple-by-design/>.

224. Alex Konrad, *In Emerging Markets, Samsung is King—While Nokia and Blackberry Are Not Dead Yet*, FORBES (Mar. 28, 2013, 4:58 PM), <https://www.forbes.com/sites/alexkonrad/2013/03/28/emerging-market-samsung/>.

225. Daniel Eran Dilger, *Apple Now Inhaling 94 Percent of Global Smartphone Profits, Selling Just 14.5% of Total Volumes*, APPLEINSIDER (Nov. 16, 2015, 1:14 PM), <http://appleinsider.com/articles/15/11/16/apple-inc-now-inhaling-94-percent-of-global-smartphone-profits-selling-just-145-percent-of-total-volumes>.

226. See Mark Anderson, *People with HIV Live Almost 20 Years Longer Than in 2001*, GUARDIAN (July 14, 2015, 5:35 AM), <http://www.theguardian.com/global-development/2015/jul/14/people-with-hiv-aids-live-nearly-20-years-longer-than-in-2001>.

comprising almost 10% of the country.²²⁷ And since most South Africans were unable to afford treatment—which tended to cost about \$10,000 annually per person²²⁸—the South African AIDS crisis appeared primed to worsen.

Despite the *retail* cost of AIDS medications, the price to manufacture certain drugs was only about forty cents per pill.²²⁹ This markup was due to the drug companies' patent rights, which prevented rival companies from selling generic drugs at more competitive prices—or at any price for that matter. Even if the South African government had considered amending its patent laws to permit the importation of generic AIDS drugs, the country's ratification of the TRIPS Agreement (TRIPS) prevented this result. By belonging to the World Trade Organization, South Africa enacted TRIPS, which compelled it to enforce non-domestic patents for a period of twenty years.²³⁰ With limited options, South Africa's government sought price concessions from the drug companies who denied their pleas, stating that patent enforcement was paramount to innovation.²³¹

As South Africa's AIDS crisis neared a pinnacle, the South African government announced its intention to purchase generic AIDS drugs in violation of the drug companies' patent rights.²³² Such a transaction was,

227. *A War Over Drugs and Patents*, ECONOMIST (Mar. 8, 2001), <http://www.economist.com/node/529284>.

228. Ed Vulliamy, *How Drug Giants Let Millions Die of Aids*, GUARDIAN (Dec. 18, 1999, 7:29 PM), <https://www.theguardian.com/uk/1999/dec/19/theobserver.uknews6>.

229. Patrick L. Wojahn, *A Conflict of Rights: Intellectual Property Under TRIPS, the Right to Health, and AIDS Drugs*, 6 UCLA J. INT'L L. & FOREIGN AFF. 463, 485 n.152 (2002) (citing Mary T. Griffin, *AIDS Drugs and the Pharmaceutical Industry: A Need for Reform*, 17 AM. J.L. & MED. 363, 393–97 (1991)).

230. *Activists Urge Change to Patent Laws*, IRIN (Nov. 21, 2011), <http://www.irinnews.org/report/94272/south-africa-activists-urge-change-patent-laws> (“The 1995 TRIPS Agreement made all WTO members beholden to a pharmaceutical patent period of 20 years, during which time no generic could be produced.”); see *Drugs, Patents and Poor People*, ECONOMIST (Apr. 18, 2001), <http://www.economist.com/node/576903>.

231. Tisetso Motsoeneng, *South Africa Slams Big Pharma in Generic Drugs Row*, REUTERS (Jan. 17, 2014), <http://www.reuters.com/article/us-safrica-pharma-idUSBREA0G0N720140117>; IRIN, *supra* note 230; see also ECONOMIST, *supra* note 230 (“[T]he drug firms have . . . insisted that they must fight to protect their patents if they are to maintain the revenue and profits necessary to finance the development of new treatments.”).

232. Rachel L. Swarns, *AIDS Drug Battle Deepens in Africa*, N.Y. TIMES (Mar. 8, 2001), www.nytimes.com/2001/03/08/world/aids-drug-battle-deepens-in-africa.html (“An Indian maker of generic drugs asked South Africa today to give it the right to sell eight AIDS drugs currently available only from patent-holding multinational companies at high prices.”).

according to South Africa, justified as a means to counter the country's epidemic.²³³ South Africa's overtures attracted Cipla and Hetero Ltd., two Indian generic manufacturers offering to sell copycat AIDS drugs for about \$600 per patient annually.²³⁴ To facilitate this deal, South Africa amended its national patent laws—despite belonging to TRIPS²³⁵—to permit parallel importation and compulsory licensing of infringing drugs.²³⁶ Parallel importation refers to the importation of patent-infringing drugs from third countries so long as the goods do not violate the third country's laws.²³⁷ Compulsory licensing allows governments to replicate drugs locally if the patent holders' price demands are deemed extraordinary.²³⁸

Thirty-nine Western pharmaceutical companies claimed this purchase of generic drugs would violate South Africa's Constitution as well as the TRIPS agreement.²³⁹ They argued TRIPS provided no loopholes or exigencies through which the South African government may operate.²⁴⁰ According to them, the South African government was about to become the world's most brazen patent pirate.²⁴¹

Western drug makers, faced with this new competition, sought to ward off the generic drug companies using a market strategy: they lowered their prices.²⁴² Five companies—Merck, Bristol-Myers Squibb, Roche Holding, GlaxoSmithKline, and Boehringer Ingelheim—announced they would

233. ECONOMIST, *supra* note 230 (“In order to save lives, the government says it should sometimes be allowed to infringe these patents.”)

234. Swarns, *supra* note 232.

235. Agreement on Trade-Related Aspects of Intellectual Property Rights, Including Trade in Counterfeit Goods: General Agreement on Tariffs and Trade-Multilateral Trade Negotiations art. 31, Apr. 15, 1994, 1869 U.N.T.S. 299, 313, 33 I.L.M. 1125, 1209.

236. ECONOMIST, *supra* note 230.

237. ECONOMIST, *supra* note 227.

238. ECONOMIST, *supra* note 230.

239. Mark Schoofs & Michael Waldholz, *Price War Breaks Out Over AIDS Drugs in Africa as Generics Present Challenge*, WALL ST. J. (Mar. 7, 2001, 5:01 AM), <http://www.wsj.com/articles/SB983915787153550680>; ECONOMIST, *supra* note 227.

240. See ECONOMIST, *supra* note 230 (explaining that the drugs companies asserted the South African government's proposed law was an abuse of discretion among other arguments in favor of strong patent rights).

241. Cipla's 'Crusade' Moves Company into International Market for AIDS Drugs, *Wall Street Journal Reports*, KAISER HEALTH NEWS (Mar. 12, 2001), <http://khn.org/morning-breakout/dr00003331/> (“Multinational drug companies call the generic drug makers ‘patent pirates’ . . .”).

242. Rachel L. Swarns, *Drug Makers Drop South Africa Suit Over AIDS Medicine*, N.Y. TIMES (Apr. 20, 2001), <http://www.nytimes.com/2001/04/20/world/drug-makers-drop-south-africa-suit-over-aids-medicine.html> (“During the past two years, the price of anti-AIDS drugs in Africa have plummeted to \$1,000 a year per patient for patented drug cocktails . . . from \$10,000 . . .”).

discount AIDS drugs by 70–90%.²⁴³ As a direct result of the South African government seeking to purchase generic drugs, the pharmaceutical companies offered price cuts once described as “impossible.”²⁴⁴

South Africa’s drug deal sparked an even greater competition between the Western patent holders and infringing manufacturers.²⁴⁵ The government rejected the price concessions—which the drugs companies hoped would deter a costly patent battle—deciding instead to purchase the generic drugs.²⁴⁶ Hetero announced that it would sell a certain AIDS drug for only \$347 annually²⁴⁷ while Cipla promised to supply a cocktail for \$600 per patient annually, undercutting the patent holders by around 50%.²⁴⁸ In response, the Western drug companies lowered their prices even further, approaching the Indian manufacturers’ levels.²⁴⁹ Bristol-Myers reduced Stavudine’s price from \$300 annually to \$54 annually, slashing the cocktail’s overall cost to around \$900 per patient annually.²⁵⁰ The Wall Street Journal reported that the generic drugs had created an “extraordinary” price war in which patent holders were attempting to “blunt” the market’s shift towards pirated AIDS drugs.²⁵¹

It soon became clear that this sudden influx of infringing goods had bolstered competition and efficiency in the market for AIDS drugs.²⁵² Before the South African government imported the generics, a market failure had persisted in which South African buyers were unable to buy and sellers unwilling to sell AIDS drugs at mutually agreeable prices—which brought with it horrifying and unacceptable human costs. It was only when South Africa purchased infringing drugs that the pharmaceutical companies supplied the country with competitively priced drugs in an attempt to protect their markets. It is important to note the pharmaceutical companies continue to innovate new AIDS drugs, indicating piracy has done little to undermine

243. *Bristol-Myers Squibb Offers to Sell AIDS Drugs in Africa at Below Cost*, HIV I-BASE (Apr. 17, 2001), <http://i-base.info/htb/4299>; ECONOMIST, *supra* note 227.

244. KAISER HEALTH NEWS, *supra* note 241.

245. HIV I-BASE, *supra* note 243.

246. *Id.* (noting that only Rwanda, Uganda, Senegal, and the Ivory Coast accepted the drug companies’ proposition).

247. Schoofs & Waldholz, *supra* note 239.

248. HIV I-BASE, *supra* note 243; Schoofs & Waldholz, *supra* note 239 (“Merck & Co. Tuesday confirmed it is slashing the prices for two of its important AIDS-fighting drugs in Africa by 40% to 55% . . .”).

249. HIV I-BASE, *supra* note 243.

250. *Id.*

251. Schoofs & Waldholz, *supra* note 239.

252. *See id.*

the patent system's incentives to create.²⁵³ In fact, the result of South Africa's purchase of infringing drugs inspired the Doha Declaration, which amended the TRIPS agreement to relax patent protections for certain middle-income nations.²⁵⁴ Shortly thereafter, the crisis took a promising turn to a point where commentators assert the more affordable treatments have raised South Africa's national life expectancy by five years.²⁵⁵

C. ONLINE STREAMING OF COPYRIGHTED MATERIAL

The DVD's popularity has waned in favor of online streaming.²⁵⁶ This is hardly surprising considering the frustration consumers harbor for the DVD era. After all, DVDs were expensive, rental late fees were aggravating, and the studios would only release new movies for home viewing long after they had left the cinemas.²⁵⁷ The studios, though, had little desire to change their model in light of the monopoly profits available to them. Competitors were unable to cure these defects because the studios' copyright protections insulated them from competition. This dissatisfaction, however, generated opportunity.²⁵⁸

253. Nikhil Kumar, *Big Pharma and the Business of HIV/AIDS*, INDEPENDENT (Dec. 1, 2010), <http://www.independent.co.uk/news/business/analysis-and-features/big-pharma-and-the-business-of-hiv-aids-2147987.html>; Josh Ruxin, *AIDS Drugs—For Profit or Not?*, FORBES (Nov. 11, 2010, 10:47 AM), <http://www.forbes.com/sites/sciencebiz/2010/11/11/aids-drugs—for-profit-or-not/> (explaining that the drugs companies were plenty profitable despite dropping prices); see also Michael Johnsen, *PhRMA: 44 Medicines and Vaccines for HIV/AIDS Treatment and Prevention in Development*, DRUG STORE NEWS (Sept. 10, 2014), <http://www.drugstorenews.com/article/phrma-44-medicines-and-vaccines-hiv-aids-treatment-and-prevention-development/>.

254. Two-thirds of WTO members must accept the amendment in order for it to come into effect. The deadline is December 31, 2017. *Amendment to the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)*, WORLD TRADE ORG., https://www.wto.org/english/tratop_e/trips_e/tripsfacsheet_e.htm (last accessed Sept. 17, 2017); see also James Thuo Gathii, *The Legal Status of the Doha Declaration on TRIPS and Public Health Under the Vienna Convention on the Law of Treaties*, 15 HARV. J.L. & TECH. 291, 296 (2002).

255. David Smith, *AIDS Drugs Increase South African Life Expectancy by Five Years*, GUARDIAN (Dec. 3, 2012, 3:01 PM); <https://www.theguardian.com/world/2012/dec/03/aids-drugs-south-african-life>.

256. See Dirk Libbey, *Why Redbox Is Having Serious Problems*, CINEMABLEND (Feb. 18, 2016), <http://www.cinemablend.com/new/Why-Redbox-Having-Serious-Problems-113087.html> (discussing how Redbox, a company that rents physical DVDs, is quickly losing revenue due to the rise of online streaming).

257. See, e.g., Louis Bedigian, *Even Carl Icahn Won't Be Able to Turn Blockbuster Around*, BUS. INSIDER (Apr. 5, 2011, 2:53 PM), <http://www.businessinsider.com/even-carl-icahn-wont-be-able-to-turn-blockbuster-around-2011-4>.

258. See David Pogue, *How Hollywood is Encouraging Online Piracy: The Death of the DVD is Pushing Users to Piracy*, SCI. AM. (Sept. 1, 2012),

Online pirates discovered that online streaming promised a more efficient means to supply copyright-infringing movies to a global audience—far superior than the prior generation’s bootlegged DVDs.²⁵⁹ Viewers needed only an internet connection to watch streamed movies, enabling pirates to service remote regions. And since pirates could offer movies cheaply, without late fees, and before stores could supply them,²⁶⁰ illegal streaming’s popularity escalated.²⁶¹

Similar to the prior narratives, the emergence of digital pirated movies became the key event enhancing both innovation and competition in the movie market.²⁶² As the studios lost revenue to online piracy, they began to reconsider their traditional ways of distributing content. This phenomenon caused a spike in industry innovation meant to compete against online piracy: these efforts led to Netflix and Hulu, as well as other similar streaming services, offering consumers a legal means to purchase and watch copyrighted works.²⁶³ Not only do these new services offer a more competitive price, but they also provide a superior service by, for example, expediting the process by which movies become available for home viewing.²⁶⁴ Also jettisoned were late fees and long delays before public

<http://www.scientificamerican.com/article/how-hollywood-encouraging-online-piracy/> (asserting that the refusal of movie studios to distribute movies in accordance with consumer demands is causing consumers to patronize black market supplies).

259. See Ernesto Van der Sar, *Piracy Isn’t Killing the Movie Industry, Greed Is*, TORRENTFREAK (Feb. 22, 2010), <https://torrentfreak.com/piracy-isnt-killing-the-movie-industry-greed-is-100222/> (“Much like the big music labels, the studios are trying to control how people consume media to an extent where it becomes impossible for innovative retailers to offer a product that can compete with piracy. By this process they are killing their own business and that of many retailers, while blaming piracy for the damages.”).

260. See Pogue, *supra* note 258.

261. See Diana Lodderhose, *Movie Piracy: Threat to the Future of Films Intensifies*, GUARDIAN (July 17, 2014), <https://www.theguardian.com/film/2014/jul/17/digital-piracy-film-online-counterfeit-dvds>.

262. See Ian Paul, *Netflix Says Popcorn Time’s Easy-Peasy Movie Piracy is a Serious Threat*, TECHHIVE (Jan. 22, 2015, 8:14 AM), <http://www.techhive.com/article/2873643/netflix-says-popcorn-times-easy-peasy-movie-piracy-is-a-serious-threat.html> (explaining, for example, that the piracy on Popcorn Time may force more content owners to make their movies available through legal streaming services, increasing competition).

263. See Pogue, *supra* note 258 (mentioning that movies studios began harnessing the internet to sell and rent movies versus resisting it).

264. Frederic Filloux, *Different Release Times of Films and TV Shows Boost Global Piracy*, GUARDIAN (Nov. 26, 2012, 10:09 AM), <https://www.theguardian.com/technology/2012/nov/26/films-tvs-global-piracy> (explaining that the studios have substantially shortened the window to release films for home viewing because of the threat piracy poses).

release dates.²⁶⁵ Even though legally streamed movies are now mainstream, the threat of piracy continues to promote competition and innovation in the movie industry. For instance, industry insiders openly discuss pirated content suppliers as their primary competition,²⁶⁶ evidenced by how the price of a Netflix subscription is based upon a locale's rate of piracy. As mentioned earlier, when piracy is greater, Netflix charges less for a subscription in order to attract consumers away from the illegal streaming sites.²⁶⁷ Apple has expressed similar sentiments with respect to online music.²⁶⁸ Thus the manner in which the studios have sought to compete against illegal streaming services has directly enhanced this market's efficiency and rate of innovation.

Importantly, illegal streaming has done little to reduce the incentives to create. Despite the revenue that piracy has usurped from the studios, the movie industry has, and continues to, generate enough revenue to not only compensate its creative efforts but also to incentivize future works. The movie studios' revenues have increased nearly every year until 2005 when digital piracy emerged.²⁶⁹ This loss prompted Netflix's venture into streaming and Hulu's founding in 2006, which boosted the studios' gross revenue into a record-breaking year in 2007.²⁷⁰ Indeed, commentators

265. See Andy Maxwell, *Movie Piracy Combated by Narrowing Theatrical Release Window*, TORRENTFREAK (June 16, 2014), <https://torrentfreak.com/movie-piracy-combated-by-narrowing-theatrical-release-window-140616/>.

266. Paul, *supra* note 262; Letter from Reed Hastings, CEO of Netflix, & David Wells, CFO of Netflix, to Shareholders (Jan. 20, 2015), http://files.shareholder.com/downloads/NFLX/3874203383x0x804108/043a3015-36ec-49b9-907c-27960f1a7e57/Q4_14_Letter_to_shareholders.pdf; Lily Hay Newman, *Netflix Says Piracy Is Still Its Biggest Competitor*, SLATE (Jan. 23, 2015, 2:08 PM), http://www.slate.com/blogs/future_tense/2015/01/23/piracy_is_biggest_netflix_competitor_says_shareholder_letter.html.

267. Adam Westlake, *Overseas Netflix Prices Determined by Piracy Levels*, SLASH GEAR (Apr. 19, 2015), <http://www.slashgear.com/overseas-netflix-prices-determined-by-piracy-levels-19379768/> (“Wells says Netflix views illegal downloads not as some society-destroying evil, but as primary competition. ‘We wouldn’t want to come out with a high price because there’s a lot of piracy, so we have to compete with that,’ the CFO said. If a local population is already comfortable with pirating their media, one of the only ways to convert them to customers is with an attractive price.”).

268. See Ryan Faughnder, *Music Piracy Is Down But Still Very Much in Play*, L.A. TIMES (June 28, 2015, 7:17 PM), <http://www.latimes.com/business/la-et-ct-state-of-stealing-music-20150620-story.html>.

269. See, e.g., *Yearly Box Office*, BOX OFFICE MOJO, <http://www.boxofficemojo.com/yearly/> (last accessed Sept. 17, 2017); Natalie Robehmed, *Hollywood's Most Profitable Movie Studios*, FORBES (May 15, 2015, 8:30 AM), www.forbes.com/sites/natalierobehmed/2015/05/15/disney-is-hollywoods-most-profitable-movie-studio/ (mentioning that NBCUniversal, for instance, had its most profitable year in 2015).

270. BOX OFFICE MOJO, *supra* note 269.

credit the immediate availability of pirated content with inspiring the innovation of legal on-demand services, generating new and lucrative revenue streams for the studios.²⁷¹ Ever since, the studios have almost always achieved a gross total of revenue exceeding the prior year. For example, in 2015, the studios grossed nearly a billion dollars more than 2014.²⁷² Even though piracy is certainly cannibalizing some of the studios' profits, the assault on the movie studios' copyrights has inspired the industry to generate a more competitive and innovative product, promoting creation and bolstering the copyright system's efficacy.

It should also be noted this phenomenon is not unique to movie streaming; sports broadcasting has had a similar experience²⁷³ Major League Baseball (MLB), the National Hockey League, and other professional leagues have historically offered subscriptions to watch games in ways commentators allege to be anticompetitive.²⁷⁴ For example, MLB required online subscribers to purchase the league's entire slate of games, offering no reduced packages for those endeavoring to watch only their favorite teams.²⁷⁵ The league might have also restrained trade by vesting teams with regional monopoly rights, which barred consumers from streaming games played within their geographic radius.²⁷⁶ In turn, those who bought a league pass were forced to purchase games they had no intention of watching while limiting the games they did actually desire to see.²⁷⁷

271. See Jake Rossen, *How Hollywood Can Capitalize on Piracy*, BUS. IMPACT (Oct. 17, 2013), <https://www.technologyreview.com/s/520336/how-hollywood-can-capitalize-on-piracy/>.

272. See BOX OFFICE MOJO, *supra* note 269.

273. See, e.g., Howard Swains, *Free Football Streaming: How Illegal Sites Keep Outpacing Broadcasters*, GUARDIAN (Aug. 1, 2015, 4:57 AM), <http://www.theguardian.com/football/2015/aug/01/faster-easier-free-illegal-football-streams> (discussing the illegal streaming of Premier League Soccer).

274. See *Laumann v. Nat'l Hockey League*, 56 F. Supp. 3d 280, 300 (S.D.N.Y. 2014) (“[T]he Leagues purport to bolster regional interest and team loyalty by consciously depriving consumers of out-of-market games they would prefer, which is generally not a permissible aim under the antitrust laws.”); see also Bob Van Voris & Gerry Smith, *Baseball Goes on Trial for Millions of Fans, Billions of Dollars*, BLOOMBERG TECH. (Jan. 19, 2016, 2:00 AM), <http://www.bloomberg.com/news/articles/2016-01-19/baseball-goes-on-trial-for-millions-of-fans-billions-of-dollars>.

275. See Ian Casselberry, *MLB Offers Single-Team Packages, Lower MLB.TV Rates in Antitrust Suit Settlement*, AWFULANNOUNCING.COM (Jan. 19, 2016), <http://awfulannouncing.com/2016/mlb-offers-single-team-packages-lower-mlb-tv-rates-in-antitrust-suit-settlement.html>.

276. See *Laumann*, 56 F. Supp. 3d at 288.

277. See *id.*

Similarly, the exclusionary means used by the leagues to sell online events was the genesis of illegally streamed sporting services, prompting the leagues to respond similarly.²⁷⁸ The leagues have described fighting illicit sites as a game of “whack–a–mole,” claiming every time one site is eliminated, another arises.²⁷⁹ In turn, MLB sought to redirect traffic away from the illegal sites to their own licensed content.²⁸⁰ Several leagues unbundled their streaming packages; MLB now allows consumers to purchase cheaper packages consisting only of one’s preferred teams.²⁸¹ Importantly, most professional leagues continue to generate record revenue from streaming and television despite the profits lost to piracy and unbundled packages.²⁸²

In sum, the rise of illegally streamed sporting events mirrors the movie, pharmaceutical, and smartphone industries whereby piracy bolstered market competition and innovation without undermining intellectual property’s incentives to create. The law rarely, however, recognizes piracy’s benefits when intellectual property could promote acts of infringement to enhance markets and innovation.

VI. APPLYING THE ECONOMICS OF INFRINGEMENT TO REFORM INTELLECTUAL PROPERTY RIGHTS

The intellectual property system is widely thought to incentivize a suboptimal level of creativity and an unjustified amount of deadweight

278. See Josh Peter, *Digital Pirates Steal Signals, Money from Leagues*, USA TODAY (Oct. 8, 2014, 8:47 AM), <http://www.usatoday.com/story/sports/2014/10/07/television-pirates-pay-per-view-ufc-nfl-nba-nhl-mlb/16871583/> (discussing the revenue major sporting leagues have lost to piracy and illegal online streaming).

279. Sam Harnett, *Pushing Back Against a New Wave of Piracy*, MARKETPLACE (June 30, 2015, 3:52 PM), <http://www.marketplace.org/2015/06/30/business/pushing-back-against-new-wave-piracy>.

280. See Marc Edelman, *From Meerkat to Periscope: Does Intellectual Property Law Prohibit the Live Streaming of Commercial Sporting Events*, 39 COLUM. J. L. & ARTS 469, 475–76 (2016) (remarking that sports leagues are increasingly concerned with the prevalence of illegal streaming providers and are seeking ways to mitigate this phenomenon).

281. See Bob Van Voris & Gerry Smith, *MLB Settlement Gives Baseball Fans New Viewing Options*, BLOOMBERG BUS. (Jan. 19, 2016, 3:20 PM), www.bloomberg.com/news/articles/2016-01-19/major-league-baseball-settles-with-fans-over-game-telecasts.

282. See, e.g., Maury Brown, *Major League Baseball Sees Record \$9 Billion in Revenues for 2014*, FORBES (Dec. 10, 2014, 7:00 AM), <http://www.forbes.com/sites/maurybrown/2014/12/10/major-league-baseball-sees-record-9-billion-in-revenues-for-2014/>.

loss.²⁸³ The problem, as this Part explains, is that the cost of infringing is too expensive. From an economic perspective, remedies are meant to increase an act's costs to discourage actors from committing that act.²⁸⁴ But in the intellectual property context, infringement remedies are so costly such that most actors refrain from infringing upon another's rights even if doing so would increase competition, efficiency, and innovation. This Part proposes a market for infringement, which would set the price of infringement high enough to incentivize innovation, but not so steep that holders would excessively restrain trade. To achieve this end, the next Sections enumerate a series of reforms to intellectual property law's method of calculating monetary awards, issuing equitable remedies, enhancing damages, and characterizing piracy. By creating a market-based scheme embracing piracy's procompetitive effects, the following proposals would better generate innovation without the current system's attendant inefficiencies.

A. THE INTELLECTUAL PROPERTY SYSTEM SHOULD AVOID VIEWING INFRINGEMENT AS A NORMATIVELY BAD ACT

As a starting point, the law's treatment of infringement as an antisocial behavior should be curtailed. By stripping infringement of its normative foundation, the law should no longer make a distinction between acts of willful and accidental infringement. As earlier outlined, the patent and copyright systems are currently designed to remedy instances of willful infringement using punitive damages that far exceed the injuries caused by the act, explicitly treating events of accidental infringement as more benign.²⁸⁵ But in actuality, the types of piracy that generate competition and innovation are often intentional.²⁸⁶

283. See BOHANNAN & HOVENKAMP, *supra* note 15, at xiv; Roin, *supra* note 184, at 1001–02 (“[T]he allure of monopoly profits offers imperfect incentives for innovation, providing inadequate rewards for many socially valuable inventions while overrewarding some socially wasteful inventions.”).

284. See Rebecca Hollander-Blumoff, *Crime, Punishment, and the Psychology of Self-Control*, 61 EMORY L.J. 501, 511(2012) (explaining the effects of legal deterrence through sanctions in the criminal law context: “The law and economics vision of crime suggests that individuals chose to engage in certain behaviors because the benefits outweigh the costs and that criminal law provides a set of deterrents against engaging in specific behavior. Thus deterrence provides society with a way to prevent crime by increasing the costs of criminal behavior.”).

285. See, e.g., *Seymour v. McCormick*, 57 U.S. 480, 489 (1853) (“[W]here the injury is wanton or malicious, a jury may inflict vindictive or exemplary damages, not to recompense the plaintiff, but to punish the defendant.”).

286. See *supra* Part V.

In fact, piracy's benefits may make some level of law breaking necessary. It is rarely suggested that illegal conduct serves a societal utility; after all, the very nature of criminalizing a behavior signals that its perpetration is never acceptable.²⁸⁷ Here, because individual acts of piracy remain undesirable when a pirate free rides on a creator's ingenuity, the law should favor intellectual property holders as opposed to pirates.²⁸⁸ But in the aggregate, the black market's presence establishes an upper ceiling on anticompetitive conduct whereby holders may profit from their innovation yet cannot exploit the intellectual property system in a manner that hinders markets. Piracy is, in turn, a naturally occurring barrier preventing intellectual property holders from pursuing the theoretical harms scholars have long thought were endemic under the current intellectual property system.

Since society benefits from certain acts of willful infringement, a legal framework designed to always deter infringement lacks a persuasive justification—in fact, the law should sometimes *encourage* infringement. The following proposals adhere to this general guideline by eliminating the normative characterization of infringement.

B. HOW TO REFORM EQUITABLE REMEDIES

The availability of equitable relief primarily hinders the socially beneficial acts of infringement. For over a century, courts have likened infringement to trespassing, remedying both acts with equitable remedies in order to prevent ongoing and future transgressions.²⁸⁹ Under the current law, a court deciding whether to issue an injunction to estop infringement must apply the traditional principles of equity. Accordingly, an injunction is more likely when the holder is a practicing entity that has suffered actual harm.²⁹⁰ This determination focuses exclusively on the holder's injuries

287. See generally David Fagundes, *Efficient Copyright Infringement*, 98 IOWA L. REV. 1791 (2013) (explaining how infringement may service a positive utility despite the punitive remedies sanctioning acts thereof).

288. See, e.g., Marney L. Cheek, *The Limits of Informal Regulatory Cooperation in International Affairs: A Review of the Global Intellectual Property Regime*, 33 GEO. WASH. INT'L L. REV. 277, 285 (2001) (describing how piracy free rides on the efforts of licit producers in the technology industry).

289. *Id.*; see also Balganesch, *supra* note 109, at 645 & n.193 (“Where both (1) the [property] right and (2) its breach were proven, the issuance of an injunction became in a sense mechanical . . .”); Abraham Bell & Gideon Parchomovsky, *A Theory of Property*, 90 CORNELL L. REV. 531, 597–98, 600 (2005) (explaining the fundamental role of injunctions supporting the property right to exclude).

290. See *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391–92 (2006) (applying the principles of equity to patent disputes).

without giving any weight to whether an act of infringement offers desirable competitive or innovative effects. As a result, a court may grant an injunction barring the production, use, and sale of an infringing copy even when the conduct bolsters efficiency and innovation.²⁹¹

Other bodies of law have taken a much different approach by seldom granting equitable remedies. Contract law, for example, strongly disfavors equitable remedies, instead allowing parties to choose whether to breach a contract so long as the breaching party pays monetary damages.²⁹² Contract damages are only meant to put the non-breaching party in the same position had the breaching party performed the contract—providing no punitive mechanisms—so as to incentivize contracting parties to breach an agreement when all parties would either benefit or remain in the same place.²⁹³ The logic of this policy is to promote social welfare: “properly calculated expectation damages increase economic efficiency by giving the other party an incentive to break the contract if, but only if, he gains enough from the breach that he can compensate the injured party for his losses and still retain some of the benefits from the breach.”²⁹⁴ This is known as the efficient breach doctrine. By avoiding a moral or normative stance towards broken agreements, this approach contrasts with the intellectual property system, which uses equitable remedies to estop infringement based upon the harms done to a rights holder and gives little consideration to whether an act increases societal goals.²⁹⁵

Patent and copyright laws should be reformed akin to contract law so that the primary remedy a court may issue is monetary damages. As this Article has explained, even without equitable remedies, third parties would be unlikely to commit socially undesirable acts of piracy so long as the

291. Hovenkamp & Cotter, *supra* note 21, at 874–75.

292. See Ganesh Sitaraman, *Contracting Around Citizens United*, 114 COLUM. L. REV. 755, 790 (2014) (“[S]pecific performance has generally been disfavored in contract law, particularly when real property and unique goods are not at issue; payment of monetary damages to the injured party is now the preferred remedy.”).

293. See *Allapattah Servs., Inc. v. Exxon Corp.*, 61 F. Supp. 2d 1326, 1329 (S.D. Fla. 1999) (“This acceptance of intentional, efficient breaches has been uniformly adopted among the jurisdictions.”); see also *Reiver v. Murdoch & Walsh, P.A.*, 625 F. Supp. 998, 1015 (D. Del. 1985) (“[S]ome breaches may be intentional and . . . efficient . . . when the payment of damages would be less costly than performance.”).

294. *Bhole, Inc. v. Shore Invs., Inc.*, 67 A.3d 444, 453 n.39 (Del. 2013) (alteration in original).

295. See generally Ian R. Macneil, *Efficient Breach of Contract: Circles in the Sky*, 68 VA. L. REV. 947 (1982) (explaining the concept of an efficient contract breach).

measure of monetary damages is set at an adequately high level.²⁹⁶ In fact, this development would actually boost innovation since entrenched holders could no longer foreclose socially beneficial, albeit infringing, inventions from the market. By disfavoring equitable remedies, the intellectual property system could incentivize acts of infringement when the benefits outpace the attendant costs—i.e., the damages paid to the holder—promoting heightened competition, innovation, and economic efficiency.²⁹⁷

There is still, however, room for equitable remedies. As in contract law, courts should issue an injunction barring future acts of infringement when monetary damages are inadequate. With respect to patents and copyrights, monetary damages tend to be inadequate when the market for the protected good is very small or—again akin to contract law—the patented or copyright good is unique.²⁹⁸ A unique good is one that is produced in singular or very limited quantities. The reason for protecting a unique good with equitable remedies is derived from how reproduction can deplete a unique good's value. It is axiomatic in economics that a good's value is based upon its scarcity. Because the production of, for example, ten infringing copies of a unique good increases its supply by 1000%, piracy can so alter the supply and demand curve to devastate the value of each unit. In other words, piracy can rob the value a unique good derives from being one of a kind. Piracy can also undermine a unique good's value by distorting the demand side of the curve. Often, there is such a small market for a unique good—indeed, otherwise the artist would have created it in greater volume—that illicitly increasing its production can exhaust the good's demand. Equitable remedies are thus more appropriate for unique goods, and similar products with small markets, since the introduction of infringing copies can lower the licit product's value, making the provision of legal damages inadequate.

Such a rule would, for instance, allow an artist to seek an injunction against those producing forged copies of her unique painting or sculpture. Another situation when monetary damages would be inadequate is when the profits in a market are so minimal that a patented or copyright good cannot possibly face competition and remain profitable. In some markets, only enough demand exists to support the protected good, necessitating a court—

296. See Crane, *supra* note 37, at 263–65 (discussing the use of injunctions in patent law, and suggesting that legal damages should be favored over injunctive relief for efficiency's sake).

297. See Fagundes, *supra* note 287, at 1812–14 (discussing how actors respond to the costs and benefits of infringing a copyright, i.e., private ordering, and how this may encourage efficient infringements).

298. See *Klein v. PepsiCo, Inc.*, 845 F.2d 76, 80 (4th Cir. 1988) (stating that a buyer of goods may seek specific performance upon a contract breach if the goods are unique).

issued injunction to block the pirated version. Although piracy is unlikely to arise where profits are small, this rule is important to assure entrepreneurs that it is worth designing a good to service a market where only one product is likely to survive.

Reforming intellectual property law in such a manner is hardly a radical idea but instead, consistent with intellectual property's current trajectory. Although property rules have traditionally governed the patent and copyright systems, courts have begun shifting intellectual property into a liability framework.²⁹⁹ The difference between property and liability rules is substantial: property laws create an almost absolute right to exclude, whereas liability rules grant only the right to receive damages *after* a trespass or breach has occurred.³⁰⁰ Since a liability framework prevents holders from impeding ongoing and future acts of infringement,³⁰¹ the above proposal hastens intellectual property law's progress in the direction that it has already begun to take but via an amended path.

A foreseeable critique is that by eliminating equitable remedies, the intellectual property system would transfer revenue from original innovators to infringers. This is true but hardly problematic. Intellectual property rights are meant to generate economic development via increased innovation, not to enrich authors and inventors.³⁰² Properly calibrating monetary damages would therefore serve intellectual property's purpose without providing authors such a bounty of private rewards to undermine the intellectual property system's efficiency and innovative incentives.

C. THE CASE FOR RESTRUCTURING LEGAL DAMAGES

The most desirable system to remedy infringement would allow the market to dictate when and where infringement occurs. Monetary damages are currently calculated in a manner that fails to achieve intellectual property law's objectives, which is to stimulate the most innovation using the fewest private incentives.³⁰³ Recall that in the patent context, patentees

299. Crane, *supra* note 37, at 254 (discussing the move towards a liability regime).

300. See generally Louis Kaplow & Steven Shavell, *Property Rules Versus Liability Rules: An Economic Analysis*, 109 HARV. L. REV. 713, 715 (1996) ("The state has at its disposal two fundamental ways of protecting property rights. On one hand, it may adopt *property rules*, under which it guarantees property right assignments against infringement through the threatened use of its police powers. On the other hand, the state may employ *liability rules*, under which it merely discourages violations by requiring transgressors to pay victims for the harms suffered.").

301. See generally Crane, *supra* note 37, at 255–56 (discussing the advantages of a property-based scheme versus a liability-based scheme of intellectual property rights).

302. See *supra* note 25 and accompanying text.

303. See *id.*

are entitled to “at least” a reasonable royalty or lost profits resulting from the infringement. Courts commonly measure a reasonable royalty by issuing an amount for which the patentee had previously licensed her technology.³⁰⁴ Otherwise a court must approximate the terms of a hypothetical license had the parties engaged in such a negotiation. If the infringement is deemed to have been willful, a court may triple the holder’s actual injuries, generating a windfall award.³⁰⁵ This framework fails to achieve intellectual property’s purpose.

Furthermore, granting punitive damages should be retired as a relic. By awarding punitive damages, a court must make an unnecessary distinction about whether one’s infringement was willful, as the efficiency of infringing is unaffected by whether it was done intentionally. Since innovation and competition benefit from a degree of willful infringement, intellectual property law should operate similarly to contract law by eliminating economically inefficient awards based upon an infringer’s mens rea. In the patent context, allowing treble damages to persist mistakenly treats certain types of infringement as antisocial and generates extraordinary disincentives against infringement even when society may benefit from the act. Instead, wisely measured monetary damages would appropriately incentivize parties to infringe or not.

Likewise, in the copyright context, a court may remedy willful infringement with enhanced statutory remedies equaling up to \$150,000 per act.³⁰⁶ In light of this remedy’s punitive nature, statutory damages are meant to tax an infringer at a rate surpassing the copyright owner’s actual damages, overly discouraging infringement. Thus, using the same logic used in the patent context, issuing punitive statutory damages without regard for an act’s social utility neither advances innovation nor serves an economically efficient purpose.

304. *See Georgia-Pac. Corp. v. U.S. Plywood Corp.*, 318 F. Supp. 1116, 1120 (S.D.N.Y. 1970) (providing that a court should consider previous royalties charged by the patentee to determine current rates).

305. *In re Seagate Tech., LLC*, 497 F.3d 1360, 1382–83 (Fed. Cir. 2007) (discussing the availability of treble damages in patent law); *see also Powers & Carlson*, *supra* note 49, at 82 (discussing the current law to determine whether treble damages are warranted: “A court will consider the following factors: (1) whether the infringer deliberately copied the ideas or design of another; (2) whether the infringer, when he knew of the other’s patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed, and (3) the infringer’s behavior as a party to the litigation.”).

306. 17 U.S.C. § 504(c)(2) (2012).

In addition, the manner in which a court may currently establish a reasonable royalty rate also creates an inefficient incentive structure. Reasonable royalties are problematic because they essentially allow copyright or patent holders to name their own price in damages, as opposed to a socially desirable rate. To illustrate, consider the role of liquidated damages in contract law. Most courts refuse to enforce a liquidated damages clause unless it reflects a reasonable forecast of actual damages. Such a limitation is necessary because excessive liquidated damages dissuade contracting parties from efficiently breaching their agreement when dogged adherence is suboptimal; in fact, unreasonable liquidated damages are considered penalties, which undermine the efficiency of contract law's compensatory scheme.³⁰⁷ These same inefficiencies are true of reasonable royalties. By mimicking prior licensing agreements to calculate a reasonable royalty, the court is likely to pick a price that could be—and often is—extraordinarily greater than the patent's actual market value or the holder's actual loss. This is because holders often incorporate the effects of an anticompetitive behavior into their licensing agreements; for instance, if a holder is able to block advancements by refusing to license a patent, the holder is likely to account for the patent's blocking value into her license's pricing scheme.³⁰⁸ The lodestar factors for courts to consider when calculating damages in a patent dispute explicitly includes the patentee's desire to preserve a monopoly: “[t]he licensor's established policy and marketing program to maintain his patent monopoly by not licensing others to use the invention.”³⁰⁹ Since a court is likely to consider this royalty rate in an infringement case, it is essentially rewarding and compensating a holder for their anticompetitive preferences. Such a method of remedying infringement, although in a holder's best interest, ignores the social objectives set forth in the Constitution's Intellectual Property Clause by failing to promote innovation while simultaneously harming competition.

Instead damages for patent infringement should be calculated based upon the cost expended by the holder plus a reasonable premium as explained below.³¹⁰ The logic of basing royalty rates upon the holder's

307. Michael Pressman, *The Two-Contract Approach to Liquidated Damages: A New Framework for Exploring the Penalty Clause Debate*, 7 VA. L. & BUS. REV. 651, 660–61 (2013) (presenting the economic arguments about why penalty clauses can lead to inefficient outcomes).

308. See *supra* notes 32–34 and accompanying text.

309. *Georgia-Pac.*, 318 F. Supp. at 1120.

310. Previous works have discussed tailoring damages based upon the cost and nature of innovation. See generally Benjamin N. Roin, *The Case for Tailoring Patent Awards Based on Time-to-Market*, 61 UCLA L. REV. 672 (2014) (asserting that the measure of patent damages should be based upon how long it takes to bring a product to the market).

research and development costs is threefold. First, this measure is predictable considering innovation costs can often be deduced from public information. Second, if the holder had expended an extraordinary amount innovating a good, then third parties may find it wiser to design around the technology, avoiding infringement in the first place. Third, measuring damages based on the cost of innovation would also guarantee that each holder would accrue revenue in excess of their innovative efforts, promoting further research and development. The court or jury could then tack on a “reasonable premium,” a level not meant to enrich the holder, but to reasonably reward the holder for successfully engineering a product. The test used by a jury would seek to find the lowest dollar amount that would have likely caused the patentee to have innovated the product anyway. A non-exhaustive list of factors for a jury to consider would be the cost of production, the number of other participants in the market, the profit margins available based upon the competitiveness of the industry, the attempts by the rights holder to actually market the protected item, and the good’s commercial success or popularity. This would create a system that better promotes innovation while also allowing efficiency and competition concerns to inform the nature of intellectual property remedies.³¹¹

As for copyright damages, this is an easier fix. The only copyright remedy that should be retained is restoring the copyright holder’s lost profits. Not only would this reform dispatch of statutory damages, but it would also eliminate disgorging the infringer of her profits. Under the current system, awarding the copyright owner the infringer’s profits eliminates almost any economic incentive to infringe, despite the act’s potential to enhance markets and creativity. Limiting damages to only lost profits would promote the arts by offering authors and artists monopoly profits while simultaneously providing economic incentives for pirates to engage in socially beneficial acts of infringement. With these reforms, the patent and copyright systems could more faithfully achieve their constitutional mandates while also revitalizing markets weighed down by intellectual property law’s deadweight loss.

VII. CONCLUSION

The foregoing analysis attempts to put piracy into a new light. Because transactions involving infringing goods are typically viewed negatively, the law penalizes certain acts of infringement with monetary penalties that

311. See generally Balganesch, *supra* note 109, at 657–60 (discussing the law’s movement toward recognizing “efficient infringements”); see also Turner, *supra* note 47 (advocating that patent law should incorporate efficiency mechanisms).

exceed the actual damages and criminal sanctions. This Article endeavors to reimagine infringement in a non–normative fashion, suggesting that society may benefit from an aggregate level of piracy.

Piracy functions akin to most other market behaviors. The decision whether to infringe is rational, meaning that pirates are likely to only copy protected goods when the benefits outweigh the costs. In most scenarios, the costs of either producing or consuming a pirated good outpaces any benefits, making it unlikely that its black market will emerge. The primary situation when infringement becomes likely is when the licit producer charges such an above market premium that a pirate could generate a profit even when paying damages to the holder. The point is that the goods most likely to suffer from piracy are those a holder sells for significantly above its marginal cost of production.

The manner in which a licit producer must respond to its black–market competitor is just as important. Considering that the law has shown an inability to eliminate infringement, holders must often lower prices to a more competitive level or shed other anticompetitive behaviors in order to redirect commerce away from illegal markets. This is substantially important because its effect, in the aggregate, increases efficiency. So, when considering the likely emergence or even the threat of piracy, intellectual property laws could generate more innovation with less deadweight loss if there were reforms to embrace piracy’s procompetitive effects.