

NOTE

HARMONIZING THE EXCLUSIONARY RIGHTS OF PATENTS WITH COMPULSORY LICENSING

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INTRODUCTION

Although the United States patent system¹ balances the interests of many parties in its enactment, the ultimate goal of the patent system is to promote progress.² One way that the patent system accomplishes this goal is by allowing an inventor to start from something rather than from nothing through the disclosure of previous inventions.³ In that way, inventors can build on the foundations laid by others and add one idea to another, thereby developing a new and useful idea, which can then be used cyclically in developing another new idea. Isaac Newton recognized the benefits of foundational scientific advancement in his oft-quoted letter, “if I have seen further it is by standing on the shoulders of giants.”⁴ But, as this Note will explain, the exclusionary rights of patents will, at times, interfere with the ability of innovators to build on those foundations laid by others.

1. When this Note refers to “patent law” or a “patent system,” it generally means the United States patent laws or patent system. If it means otherwise, this Note will so specify.

2. See U.S. CONST. art. I, § 8, cl. 8.

3. See 35 U.S.C. § 112 (2006).

4. Letter from Isaac Newton to Robert Hooke (Feb. 5, 1676), reprinted in ROBERT K. MERTON, ON THE SHOULDERS OF GIANTS: A SHANDEAN POSTSCRIPT, xx (Post-Italianate ed. 1993) (1965).

In order to obtain a patent for a new discovery,⁵ an inventor must file a patent application with the United States Patent and Trademark Office (USPTO) that contains a full disclosure of the invention.⁶ For consideration of the inventor's disclosure,⁷ the government grants a patent, which gives the patentee the right to exclude others from practicing her invention for a limited time—twenty years from the date of application.⁸ Progress is promoted because investors and innovators will capitalize upon the cost of invention and disclose the invention to the public because they are given an enforceable limited monopoly on the invention. The public is benefited by the inventive knowledge disclosed, the inventor is benefited by her potential remuneration, and future inventors have a backdrop of innovation from which to begin.

The changing landscape of patent technologies has exposed problems inherent in the patent right to exclude. Rather than simply granting every patent a term of twenty years, society may

5. The patent system does not reward a discovery per se, even though the discovery may provide the foundation for innumerable patents. *Compare* U.S. CONST. art. I, § 8, cl. 8 (“Discoveries”), *with* 35 U.S.C. § 101 (2006) (“Inventions patentable”). The Supreme Court has said that pure scientific discoveries are not patentable, but they must have some actual use. *See* *Diamond v. Chakrabarty*, 447 U.S. 303, 309 (1980) (“Einstein could not patent his celebrated law that $E=mc^2$ Such discoveries are ‘manifestations of ... nature, free to all men and reserved exclusively to none.’” (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948))); *Parker v. Flook*, 437 U.S. 584, 589 (1978) (holding that a “principle” or “fundamental truth” is unpatentable (quoting *Le Roy v. Tatham*, 55 U.S. (14 How.) 156, 175 (1853))); *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874) (“An idea itself is not patentable”). The Australian High Court has suggested, however, that the distinction between discovery and invention is not useful. *Nat’l Research Dev. Corp. v. Comm’r of Patents* (1959) 102 C.L.R. 252, 252 (Austl.). This form of proprietarianism in patent law may defeat the traditional role of patent law because discoveries, like inventions, can be expensive, labor-intensive, and economically viable. PETER DRAHOS, *A PHILOSOPHY OF INTELLECTUAL PROPERTY* 209-10 (1996); *see, e.g.*, *Genentech Inc.’s Patent* [1989] R.P.C. 147 (Eng.) (discussing whether a protein found in human tissue which was useful in the medical field was an invention).

6. 35 U.S.C. § 112; 37 C.F.R. § 1.71 (2007) (“The specification ... is required to be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which the invention or discovery appertains ... to make and use the same.”).

7. The patent interest could be described as a contract between inventor and government. The government offers consideration in the form of the exclusionary right while the inventor agrees to disclose how to make and use the invention. *See* 35 U.S.C. § 112; *Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 242 (1832) (“The laws which are passed to give effect to [the] purpose [of patents] ought, we think, to be construed in the spirit in which they have been made; and to execute the contract fairly on the part of the United States”).

8. *See* 35 U.S.C. § 154(a) (2006).

prefer a patent system that meritoriously awards innovation.⁹ Perhaps the patent system could award the inventor of an antigravitational device (that actually works) a patent term of fifty years, but to the inventor of a bathroom stall latch a patent term of five years. Alternatively, the patent system could award patent terms based on the type of industry; for example, award microelectronic innovation a term of eight years, but mechanical innovation a term of fifteen years. In other words, the patent system could place value on how useful the invention is and award a patent term commensurate to that measure of usefulness.¹⁰ Overhauling the patent system, however, to have a multiplicity of types of patents would be legislatively difficult to implement and pragmatically complicated to practice.¹¹ This Note explores an alternative method of exclusivity, reigning in a patent's exclusive right with the goal of making enforceable patents more accessible to future innovators sooner—accounting, however, for any potential negative effects on progress.

Recent court decisions have highlighted the power of the exclusive right and the debate regarding how far this right extends.¹² The Federal Circuit in *NTP v. Research In Motion (RIM)* awarded NTP a permanent injunction that threatened to force a shutdown of RIM's popular BlackBerry service.¹³ NTP, as a company that only holds patents to license them, did not have any interest in practic-

9. Thomas Jefferson seemed to have contemplated that the patent system should not give a right to exclude others, but only give an exclusive rights to the profits of an invention. See Letter from Thomas Jefferson to Isaac McPherson (Aug. 13, 1813), in 13 THE WRITINGS OF THOMAS JEFFERSON 333-34 (Andrew A. Lipscomb et al. eds., 1903) ("Society may give an exclusive right to the *profits* arising from [patents]" (emphasis added)). This Note's advocating of a mandatory licensing regime is consistent with this sentiment. See *infra* Part II.

10. For instance, design patents have an exclusive length of fourteen years. 35 U.S.C. § 173 (2006). Jeff Bezos, CEO of Amazon, and Tim O'Reilly, well-known publisher of computer-related books, have argued that business method and software patents should have a length of no more than five years. An Open Letter from Jeff Bezos on the Subject of Patents (Mar. 9, 2000), available at http://www.oreilly.com/news/amazon_patents.html.

11. Patent practitioners could cast patent applications in a light so as to get category A protection as opposed to category B protection. See, e.g., *Diamond v. Diehr*, 450 U.S. 175, 175 (1981) (casting a mathematical process into an apparatus).

12. See generally *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006); *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005).

13. *NTP*, 418 F.3d at 1287.

ing its patents. As a result of the court order, RIM had little choice but to acquiesce to NTP's licensing demands, costing RIM \$612.5 million.¹⁴ The Supreme Court in *eBay v. MercExchange* rejected the Federal Circuit's "general rule" of permanent injunction¹⁵ and instead stated the same traditional four-part equity test used in other areas of law to determine injunctions in patent suits.¹⁶ These two decisions elucidate the struggle between exclusive patent rights and forced compulsory licensing. The *NTP* decision shows the windfall that can occur with a valid and infringed patent when the exclusive right is exercised in an extortive way so that under threat of injunction, licensing negotiations are lopsided.¹⁷ The *eBay* decision weakens the exclusive right by taking away the presumption of injunction and providing, as an equitable remedy, a compulsory license in denying an injunction under the four-factor test.¹⁸

Although the right to exclude and the compulsory license are fundamentally at odds, this Note seeks to harmonize the two and proffer a patent system framework that incorporates both exclusionary rights and compulsory licensing. Part I will define the exclusionary interest and compulsory license in terms of a patent. It will further develop the dichotomy and explore past and current jurisprudence with regard to the patent holder's right to exclude. Part II will introduce a patent system change, a new framework that will attempt to reward patentees with the right to exclude, yet create a mandatory licensing scheme for certain patentees. Finally, Part III will theoretically apply the framework to the pharmaceutical industry and patent licensing companies in an attempt to elucidate the possible effects the framework would have on the promotion of progress.

14. See Mark Heinzl, *BlackBerry Case Could Spur Patent-Revision Efforts*, WALL ST. J., Mar. 6, 2006, at B4.

15. *MercExchange, L.L.C. v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005), *rev'd*, 547 U.S. 388 (2006).

16. *eBay*, 547 U.S. at 393 (holding that traditional equitable principles do not permit broad classifications and that each case must be adjudicated applying the four-factor test anew). For discussion of the four-factor test, see *infra* note 105 and accompanying text.

17. See *infra* Part I.D.

18. The Federal Circuit had a "general rule," unique to patent disputes, "that a permanent injunction will issue once infringement and validity have been adjudged." *eBay*, 547 U.S. at 393-94 (quoting *eBay*, 401 F.3d at 1338).

I. THE EXCLUSIONARY RIGHT AND COMPULSORY LICENSE DICHOTOMY

A. Exclusionary Rights in Patents

The source of exclusionary right of patents is rooted in the Constitution.¹⁹ “The Congress shall have Power ... To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the *exclusive Right* to their respective Writings and Discoveries.”²⁰ Congress has implemented this right in 35 U.S.C. § 154, which states, “Every patent shall ... grant to the patentee ... the right to exclude others from making, using, offering for sale, or selling the invention throughout the United States or importing the invention into the United States”²¹ A patent is a grant to exclude, not a grant to practice; hence the responsibility to assert the exclusionary interest against a potential infringer falls on the patentee.²² The exclusionary right, however, is subject to restrictions, such as compulsory licensing in the courts and statutory provisions.

B. Compulsory Licenses in Patents

According to *Black’s Law Dictionary*, a compulsory license is a “statutorily created license that allows certain people to pay a royalty and use an invention without the patentee’s permission.”²³ The patent system already contains elements of compulsory licensing.²⁴ For instance, the patent system allows a court in an infringement proceeding to “grant injunctions in accordance with the principles of equity to prevent the violation of any right secured

19. U.S. CONST. art. I, § 8, cl. 8.

20. *Id.* (emphasis added).

21. 35 U.S.C. § 154(a)(1) (2006).

22. *Claire v. Kastar, Inc.*, 138 F.2d 828, 831 (2d Cir. 1943) (“[I]t is scarcely necessary at this day once more to expose the fallacy that a patent gives any right to the patentee to practice his disclosure. It merely enables him to stop others from practising it.”).

23. BLACK’S LAW DICTIONARY 938 (8th ed. 2004).

24. *But see id.* (“While some nations currently recognize compulsory licenses, the United States never has.”).

by patent, on such terms as the court deems reasonable.”²⁵ So when a court fails to grant a permanent injunction despite infringement, a compulsory license is created.

One of the most famous cases where a court denied an injunction was in *City of Milwaukee v. Activated Sludge*.²⁶ Activated Sludge sued the City of Milwaukee for infringement of a patent in processing raw sewage.²⁷ The Court of Appeals for the Seventh Circuit, however, did not grant an injunction against the City because the alternative was for Milwaukee instead to dump the sewage into Lake Michigan, the source of the city’s drinking water, posing a public health hazard.²⁸ Even though the court did not enjoin the city, it did award monetary damages to Activated Sludge, effectively granting a compulsory license for use of the patent.²⁹

Other examples of compulsory licenses in the patent system include patents whose subject matter cover areas of technology of particular interest to the government or public welfare.³⁰ Furthermore, the federal government cannot be excluded from using a patent—hence a compulsory license is mandatory.³¹ Finally, anti-trust violations can also lead to a compulsory license.³² For example, when a licensing arrangement harms competition through price-fixing or market division, the competitor can be given a royalty-free (compulsory) license.³³

25. 35 U.S.C. § 283 (2006).

26. 69 F.2d 577 (7th Cir. 1934).

27. *Id.* at 593.

28. *Id.*

29. *See id.*

30. *See* 35 U.S.C. § 181 (2006). An application can be made secret, essentially ferreting away patent rights, if it concerns subject matter that, if revealed, could be detrimental to national security. *See id.*

31. *See* 28 U.S.C. § 1498(a) (2006) (stating that the only remedy a patentee has against the U.S. government is “reasonable and entire compensation”).

32. *See generally* ABA SECTION OF ANTITRUST LAW, INTELLECTUAL PROPERTY AND ANTITRUST HANDBOOK 239-46 (2007).

33. *See* STAFF OF SUBCOMM. ON PATENTS, TRADEMARKS, AND COPYRIGHTS, S. COMM. ON THE JUDICIARY, 86TH CONG., REPORT ON COMPULSORY LICENSING OF ANTITRUST JUDGMENTS 13 (Comm. Print 1960); U.S. DEP’T OF JUSTICE & FED. TRADE COMM’N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY 7 (1995), available at <http://www.usdoj.gov/atr/public/guidelines/0558.pdf>.

C. Problems with the Right To Exclude

1. Patent Overlap and the Thicket

Unlike a piece of real property, the boundary of a patent property right is not so easily determinable. Patents consist of one or more “claims” which legally define what the patent covers, but claims can overlap between different patents.³⁴ A series of patents are analogous to a set of Russian wooden matryoshka dolls, with each individual patent being a slightly smaller, more defined iteration of the largest. One patentee can hold a patent that actually resides inside the rights of another patent, which resides in another patent, and so on.

A real life example of patent stack-up occurs in the area of high technology in “patent thickets.”³⁵ According to Carl Shapiro, a patent thicket is a “dense web of overlapping intellectual property rights that a company must hack its way through in order to actually commercialize new technology.”³⁶ One technological device can implement hundreds of components, and in turn, each of these components can “read on” thousands of patents.³⁷ When one product utilizes thousands of patents, each patentee has the potential to extract a licensing fee or royalty from use of the patented technology. Royalty stacking occurs when the aggregate of the royalties exceeds the value of the end use or profitability.³⁸ Patent holdup happens when one of the patentees from which a product manufacturer must obtain a license refuses to license, prohibiting the entire product from being marketable.³⁹ The following section will express these ideas in a simple example.

34. 35 U.S.C. § 112 (2006); 37 C.F.R. § 1.75 (2007).

35. Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in 1 INNOVATION POLICY AND THE ECONOMY 119, 119 (Adam B. Jaffe, Josh Lerner & Scott Stern eds., 2001).

36. *Id.* at 120.

37. FED. TRADE COMM’N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY ch. 2, 28 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf>; Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 1992 (2007).

38. See Lemley & Shapiro, *supra* note 37, at 2010-17.

39. See *id.*

2. An Example of Patent Overlap, Patent Holdup, and Royalty Stacking

Suppose there are three inventors who hold patents on variations of a table. Inventor *A*'s patent (*A*) is for a table that comprises a flat surface and at least three legs attached to the flat surface. Inventor *B*'s patent (*B*) is for a table like *A*'s, but adds one wheel attached to each leg. Inventor *C* has a patent (*C*) like *A*'s and *B*'s, but adds a locking mechanism to the wheels. Inventor *A*'s patent is not limited by wheels, so it is broader than *B* or *C*. Patents *B* and *C* contain all of the elements of *A* but add further limitations, so they reside completely within patent *A*. Patent *C* likewise resides completely in patent *B*. In other words, these patents are stacked up like the matryoshka doll with *A* being the largest doll, *B* the next, and *C* the smallest of the three. Assuming all these patents are valid, patent law is such that inventor *A* can exclude both *B* and *C* from making, using, or selling their inventions.⁴⁰ Likewise, inventor *B* can exclude inventor *C*.⁴¹ The situation as described here is simple; however, cascading patent rights can quickly become complicated when one patent combines the claims of several other patents that combine the claims of several other patents, and so on.

If a person owns the outermost matryoshka doll figure and denies access to the next doll inside, the fact that the inner doll is owned by someone else does not matter—she can still be denied access because her patent falls completely within the patent rights of another. Furthermore, the owner of the inside doll can prevent the owner of the outside doll from making, using, or selling the improved table—although the outside doll has a broader claim, the inside doll still presents a barrier. Thus, each higher level patent presents an absolute barrier to the successful product marketization of each narrower patent, and each narrower patent presents a specific barrier to full product marketization of the higher level patent by carving out pockets of exclusivity and giving them to someone else. This concept is difficult to understand in the table example because each successive invention is trivial or, in patent terms, obvious. The idea is that inventor *A*'s patent clearly covers

40. See 35 U.S.C. § 154(a)(1) (2006).

41. See *id.*

the material of inventor *B*'s patent, because *B*'s patent only adds to *A*'s. Inventor *A*, however, never contemplated *B*'s contribution, so *B*'s patent carves out her inventive addition and gives *B* the exclusive right in it. Inventor *A* also has an exclusive right in *B*'s patent, insofar as *A*'s patent overlaps with *B*'s.

Inventor *A* has an incentive not to exclude inventors *B* and *C* access to their patents because *A* would also like to sell tables that have wheels and locks. Without a licensing agreement, however, *B* and *C* could stop her.⁴² So if all the patentees in a patent stack up desire to use their patents, then they have an incentive to cross-license their respective patent rights to each other.⁴³ In this hypothetical, the public benefits because more table manufacturers can exist, and therefore the public has more choice in design, there is competition in the market, and tables are more accessible.

Imagine now inventors *D*, *E*, *F*, and *G*, all holding further cascading rights on improvements of *A*'s original table patent. Even if *G*'s inventive improvement of the table were some sort of revolutionary operating table that would not affect the marketability of any of *A-F*'s patents, *G* could be excluded from using her patent by any one of *A-F*. Inventor *G* can produce her operating tables, but runs the risk of facing, absent prearranged license agreements, patent holdup—expensive litigation and injunction.⁴⁴ If *A-F* are willing to license their agreements, but the monetary cost of such agreements together exceeds the market value of *G*'s invention, royalty stacking has occurred.⁴⁵ The market value of *G*'s invention can be exceeded because each patent in the chain has the right to exclude, so the negotiated licensing value of each of *A-F*'s patent could be understood as nearly the entire market value of the subjected invention.⁴⁶ If *G* could identify each of *A-F* ex ante, then the likelihood of coming to a successful licensing agreement is much greater because *A-F* could demand an amount that would still keep *G* profitable. One unidentified patentee could then ex post demand

42. See ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS 59-64 (2004) (explaining how cross-licensing applies to a technology thicket). See generally Shapiro, *supra* note 35.

43. See JAFFE & LERNER, *supra* note 42.

44. See generally Lemley & Shapiro, *supra* note 37, at 2010-17.

45. *Id.*

46. *Id.*

a royalty that would make the *G*'s business unprofitable. The right to exclude is a powerful right, especially in areas with high levels of patent overlap.

3. *Patently Valid and Invalid Patents*

a. *Invalid Patents and the Presumption of Validity*

The right to exclude is further bolstered by the statutory provision that patents are presumptively valid.⁴⁷ In litigation, courts require clear and convincing evidence to find a patent invalid.⁴⁸ Although this provision provides some stability in patent infringement litigation for the patent holder, it also means that both valid and invalid patents have the same presumption of validity, resulting in licenses and judgments against infringers that can later be obfuscated.⁴⁹ The USPTO's goal is to ensure that no more than 4 percent of issued patents are invalid.⁵⁰ To determine compliance with these goals, the USPTO takes a random sample of patent applications that have been approved for allowance and does a supervisory review of them.⁵¹ From the available data one can estimate that at least 5500 of the issued patents in 2007 are actually invalid.⁵² A more in-depth analysis of the selected reviewed patents, rather than a supervisory review, may reveal even more invalid patents.

47. 35 U.S.C. § 282 (2006) ("A patent shall be presumed valid. Each claim of a patent (whether in independent, dependent, or multiple dependent form) shall be presumed valid independently of the validity of other claims").

48. 35 U.S.C. § 273(b)(4) (2006) ("A person asserting the defense under this section shall have the burden of establishing the defense by clear and convincing evidence.").

49. See *infra* Part I.C.3.b.

50. U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2007, at 40, available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>.

51. See U.S. PATENT & TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 1308.03 (8th ed., Aug. 2001, rev. Sept. 2007), available at <http://www.uspto.gov/web/offices/pac/mpep/index.html> [hereinafter MANUAL].

52. U.S. PATENT & TRADEMARK OFFICE, PERFORMANCE AND ACCOUNTABILITY REPORT FISCAL YEAR 2007, *supra* note 50, at 40, 113. A 3.5 percent error rate times 160,000 issued patents in 2007 equals over 5500 invalid patents.

b. Complications in Adjudicating Invalid Patents

This situation presents a real problem in the adjudication of a patent that may actually be invalid. Because the patent is presumed valid and requires clear and convincing evidence to invalidate, a defendant runs a higher chance of losing on the question of validity even if the patent should never have been issued.⁵³ The USPTO does, however, offer a means of rectifying the issuance of invalid patents. A third party can present a “substantial, new question of patentability” to the USPTO with regard to a patent and the USPTO can elect to reexamine it.⁵⁴ The standard of review employed when reexamining a patent is the “preponderance of the evidence” standard, meaning that a patent can be invalidated more easily in reexamination proceedings than in litigation.⁵⁵ When infringement litigation proceeds, the defendant will often seek reexamination of the alleged patents and ask for a stay in the proceedings pending the outcome of the reexamination.⁵⁶

The back and forth of reexamination may take three or more years to complete. If the examiner invalidates the patents or parts thereof, the patentee can appeal, further prolonging the reexamination.⁵⁷ If the judge decides to stay litigation proceedings in light of concurrent reexamination, the patentee may have to wait several years to have the infringement suit heard. On the other hand, if the infringement suit is not stayed and the patent is held valid under the clear and convincing standard, but invalid in reexamination, the alleged infringer may bizarrely be enjoined in court based on a patent that is ultimately invalidated.⁵⁸

In *NTP v. Research In Motion*, that is essentially what happened.⁵⁹ RIM is the creator of the BlackBerry, a system for

53. JAFFE & LERNER, *supra* note 42, at 152 (explaining that the defendant in an infringement suit may not call into question the integrity of the examination process).

54. 35 U.S.C. §§ 303(a), 304 (2006).

55. MANUAL, *supra* note 51, § 2286, at 2200-143 (“[I]n the Office, it is sufficient to show nonpatentability by a ‘preponderance of evidence.’”); *see, e.g.*, 37 C.F.R. § 41.207(a)(2) (2007).

56. *See* 37 C.F.R. §§ 1.510, 1.515 (2007) (reexamination); *see, e.g.*, *NTP, Inc. v. Research In Motion, Ltd.*, 397 F. Supp. 2d 785, 787-88 (E.D. Va. 2005) (mem.) (denying a motion to stay an injunction in light of reexamination proceedings).

57. *See* MANUAL, *supra* note 51, § 1201 (appeal).

58. *See infra* notes 67-68 and accompanying text.

59. 418 F.3d 1282 (Fed. Cir. 2005).

sending and receiving emails wirelessly from a pager-like device.⁶⁰ NTP sued RIM for infringement of some of its patents that covered technology used in the BlackBerry communications network.⁶¹ The district court found that the patent was valid and infringed, awarding monetary damages of roughly \$50 million. Additionally, the court ordered an injunction against RIM, but stayed the injunction pending appeal.⁶² Meanwhile, RIM petitioned the USPTO for reexamination of NTP's patents in question in the lawsuit and the USPTO began reexamination proceedings on those and several other of NTP's related patents sua sponte. On appeal by RIM, the Federal Circuit affirmed and remanded the case to the district court for enforcement.⁶³ RIM then appealed to the Supreme Court, but was denied certiorari.⁶⁴ On remand for enforcement of the judgment, RIM moved to stay the enforcement of the injunction pending the outcome of the reexamination, but the motion was denied.⁶⁵ With injunction imminent, RIM finally acquiesced to licensing terms with NTP at the expense of \$612.5 million.⁶⁶ Two years later, the reexamination proceedings issued a final rejection of all claims in all the disputed patents, invalidating the very same patents that RIM was forced to license from NTP because the district court had found the claims valid under the clear and convincing standard.⁶⁷ Pending further appeals of the reexamination rejections by NTP, it seems as though RIM has purchased rights to over \$650 million of nothing.⁶⁸

60. *Id.*

61. *Id.*

62. NTP, Inc. v. Research In Motion, Ltd., No. Civ.A. 3:01 CV 767, 2003 WL 23100881, at **1-2 (E.D. Va. Aug. 5, 2003).

63. Research In Motion, Ltd. v. NTP, Inc., 418 F.3d at 1312.

64. Research In Motion, Ltd. v. NTP, Inc., 546 U.S. 1157 (2006) (denying certiorari).

65. NTP, Inc. v. Research In Motion, Ltd., 397 F. Supp. 2d 785, 788 (E.D. Va. 2005) (mem.) ("Valid patents would be rendered meaningless if an infringing party were allowed to circumvent the patents' enforcement by incessantly delaying and prolonging court proceedings which have already resulted in a finding of infringement.")

66. The license agreement included all rights to all applicable NTP patents. Heinzl, *supra* note 14.

67. Sheri Qualters, *Patent Review Overhaul Draws Praise: A Process Once Viewed as Risky May Help Avoid Costly Delays and Suits*, NAT'L L.J., Oct. 1, 2007, at 5, 8-9 (stating that Research In Motion asked the patent office to reexamine two patents held by NTP, but the patent office independently decided to examine six other NTP patents and rejected all the claims in the reexamined patents).

68. If the patents are declared and held invalid through the appellate process, the result would be a judicial quandary that would have directly cost RIM over \$650 million.

This outcome is problematic, especially in light of the fact that there was no evidence that RIM did in fact infringe, that is, actually copy the content of the patent—it seemed to have developed its technology independently of the NTP patents.⁶⁹

The ironic result in *NTP v. RIM* leads one to question whether the scope of the exclusive right goes too far. In light of the Supreme Court decision in *eBay v. MercExchange*, an opinion issued a mere two months after the Federal Circuit decision in *NTP*, it is unclear whether the *NTP* outcome would be the same today.⁷⁰

4. *The Absoluteness of the Right*

One of the main problems with the right to exclude is the absoluteness of the right. As discussed above, a patent, although presumed valid, is not necessarily valid, so the absoluteness of the exclusionary right does not seem like a perfect fit as a remedy for infringement.⁷¹ If all patents were 100 percent valid, then perhaps injunction, and therefore exclusion, should be the standard. But in the computer and electrical technology areas where patent overlap is systemic, patents are more likely to have a percentage of validity or a patent “strength” factor.⁷²

In free market negotiation of a license the perceived strength of the patent is taken into account by the parties—the patentee

Reasonably, one might wonder how NTP was suffering “irreparable harm” if they were to turn around and license the technology to RIM. See *NTP, Inc. v. Research in Motion, Ltd.*, No. Civ.A. 3:01CV767, 2003 WL 23100881, at *1 (E.D. Va. Aug. 5, 2003) (“This Court FINDS that ... NTP will be face [sic] irreparable harm if an injunction is not issued ...”). The jury awarded NTP a reasonable royalty rate of 5.7 percent, resulting in \$23 million, which figured in the court’s overall damage assessment of almost \$54 million. *NTP*, 418 F.3d at 1291-92.

69. See generally *NTP*, 418 F.3d 1282. Although independent creation of a patented technology is not a defense to infringement, from the perspective of the defendant in an infringement action they are not morally a wrongdoer. *Schnadig Corp. v. Gaines Mfg. Co.*, 620 F.2d 1166, 1168 n.3 (6th Cir. 1980) (“[A]n ‘inventor’ who produces something already patented infringes the patent regardless of his knowledge of its existence.”). If the infringement were intentional, then it would at least be morally culpable, even if the patents are ultimately invalid. If the patents remain invalid, NTP was not a legal or moral wrongdoer, yet still had to pay.

70. See *infra* Part I.D.

71. See *supra* Part I.C.3.a.

72. Lemley & Shapiro, *supra* note 37, at 2010-17 (explaining how the negotiation process involves a strength of patent element).

asserting the patent knows that at least some of the prior patents or publications that would tend to invalidate the patent, and the accused infringer would likely perform an exhaustive search for invalidating fodder as well.⁷³ So the patent strength could be described as the probability that a court would find the patent valid or invalid under the appropriate standard.⁷⁴ The negotiated amount is not necessarily a prediction of what a court would ultimately decide. Instead, the negotiation more accurately tries to predict the damages a court would find,⁷⁵ but then tempers that number by the patent strength.⁷⁶ Because a court does not have the leeway to determine that a patent is strong or weak—it is either valid or not—the damages found by the court cannot fully comprehend what free market negotiations would have produced.

5. Abusing the Right To Exclude

Changing the patent term from seventeen years from issuance to twenty years from filing is probably the most significant change in legislated patent rights in recent years.⁷⁷ On its face, the change seems to include no substantive difference. If a typical examination takes three years to complete, seventeen added to the three-year examination period equals the twenty-year new patent term. A patent applicant, however, could strategically prolong examination indefinitely.

One famous example of prolonged examination was by Jerome Lemelson. On December 24, 1954, he filed a 150-page application from which he formed the basis of twenty-three issued patents.⁷⁸ His

73. *Id.*; see 35 U.S.C. § 102 (2006).

74. See 35 U.S.C. §§ 273(b)(4), 282 (2006).

75. See 35 U.S.C. § 284 (2006). Although a court attempts in finding the reasonable royalty to mimic free market negotiations, the method falls short due to unavailability of data. See Patent Baristas, What's a Reasonable Royalty Rate?, <http://www.patentbaristas.com/archives/2005/11/17/whats-a-reasonable-royalty-rate/> (last visited Feb. 28, 2009).

76. See Lemley & Shapiro, *supra* note 37, at 2010-17; Jay Pil Choi, *How Reasonable is the 'Reasonable' Royalty Rate? Damage Rules and Probabilistic Intellectual Property Rights* 1-4 (Mich. State Univ., Dep't of Econ., Ctr. for Econ. Studies and Ifo Inst. for Econ. Research, Working Paper No. 1778, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=926037.

77. Uruguay Round Agreements Act, Pub. L. No. 103-465, § 532, 108 Stat. 4809 (1994) (codified as 35 U.S.C. § 154(a)(2) (2000)).

78. GREGORY A. STOBBS, SOFTWARE PATENTS § 12.12, at 215-17 (Cum. Supp. 2007).

tactic was to delay issuance of the patents by amending claims and filing continuing applications to mete out the disclosure of the original specification, hoping to make new claims that would cover successful products from which he could then extract licensing fees.⁷⁹ For example, his most recent patent based on that 1954 application was filed on January 25, 1993, but did not issue until January 2, 2001, almost eight years later.⁸⁰ The patent will be in force until January 2, 2018, sixty-four years after his original filing.⁸¹ In another patent based on the first application in 1954, Lemelson claimed to have invented the bar code, but rather than suing bar code makers, he sued bar code users and was able to extract over \$1.5 billion in licensing fees before his bar code patent was finally invalidated by declaratory judgment in 2004.⁸²

The 1999 change in patent terms from seventeen years from issuance to twenty years from filing solved the problem of prolonged applications because patent rights now expire from the filing date rather than from the issuance date. More recently, commentators have questioned the practices of patent licensing companies, commonly called “patent trolls.”⁸³ A patent troll is a company that owns and licenses patents, but does not practice any patents itself.⁸⁴ The dual use of the “troll” moniker as a noun and verb describes both the general disdain for these companies by corporate America and the typical strategy for a patent licensing company.⁸⁵ The strategy is to cast out as many “cease and desist” letters to potential

79. *Id.*

80. U.S. Patent No. 6,169,840 (filed Jan. 25, 1993).

81. The claims that read on the original 1954 specification will have pended for the full period. *See id.* (filed Jan. 25, 1993) (showing ancestry to 1954 patent includes continuation-in-part).

82. *Symbol Techs. v. Lemelson Med., Ed. & Research Found.*, 301 F. Supp. 2d 1147, 1167 (D. Nev. 2004), *aff'd*, 422 F.3d 1378 (Fed. Cir. 2005); STOBBS, *supra* note 78, § 12.12[A], at 217.

83. The phrase was first used by the assistant general counsel at Intel Corp. who claims, “We were sued for libel for the use of the term ‘patent extortionists’ so I came up with ‘patent trolls.’” Brenda Sandburg, *You May Not Have a Choice. Trolling for Dollars*, LAW.COM, July 30, 2001, <http://www.phonetel.com/pdfs/LWTrolls.pdf>.

84. *Id.* The general counsel of Intel explains, “A patent troll is somebody who tries to make a lot of money off a patent that they are not practicing and have no intention of practicing and in most cases never practiced.” *Id.*

85. Troll means both to “fish by trailing a baited line boat,” and a “mythical, cave-dwelling being depleted in folklore as either a giant or a dwarf, typically having a very ugly appearance.” THE NEW OXFORD AMERICAN DICTIONARY 1803 (2d ed. 2005).

infringers as possible and hope they bite by agreeing to set up licensing agreements, rather than face a lawsuit.⁸⁶ Some commentators defend the practice of trolling as a valid business model, while others vehemently oppose it largely because of the threat of injunction, using the courts as a bargaining chip in licensing agreements, and the questionable validity of certain patents.⁸⁷

Pharmaceutical patents present another area of modern day “abuse” of patents. Some have said that the pharmaceutical industry in the United States is a shining beacon of the patent system at work, but others criticize pharmaceutical companies for taking patent protection too far.⁸⁸ The pharmaceutical industry has perhaps reaped the reward of strong patent protection like no other industry.⁸⁹ The ten pharmaceutical companies in the Fortune 500 combine yearly profits that exceed the rest of the Fortune 500 combined, which amounts to a staggering amount of money.⁹⁰ While pharmaceutical companies and big-business pundits might say, “that’s just business,” one might wonder if society is receiving a bad bargain when companies can profit so much on only a handful of inventions.⁹¹

Perhaps the examples of the “patent troll” and the blockbuster profits of the pharmaceutical industry are not “abuse” per se, but there is a valid question as to whether the activities of these industries really fulfill the aims of the patent system. This question will be explored in more depth in Part III.

86. See Donald J. Chisum, *Reforming Patent Law Reform*, 4 J. MARSHALL REV. INTELL. PROP. L. 336, 340 (2005).

87. See *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 394 (2006) (Kennedy, J., concurring) (“[T]he threat of an injunction is employed simply for undue leverage in negotiations”). Compare Chisum, *supra* note 86, at 340 (“The ugly, evil troll then leaps up and demands a huge toll”), with Naomi R. Lamoreaux & Kenneth L. Sokoloff, *Inventors, Firms, and the Market for Technology in the Late Nineteenth and Early Twentieth Centuries*, in *LEARNING BY DOING IN MARKETS, FIRMS AND COUNTRIES* 19 (Naomie R. Lamoreaux et al. eds., 1999) (describing the early patented technology licensing market which helped small inventors make a living).

88. See *infra* notes 154-62 and accompanying text.

89. See *infra* notes 154-62 and accompanying text.

90. See *infra* note 155.

91. See *supra* note 7 and accompanying text.

6. *The Problem of Weak Patents*

a. *The Slow To Adapt USPTO*

The patent landscape of the modern era is pocked with sinkholes of ambiguity. Presumably, the USPTO does its best when it approves a patent application for issuance, but the Office has been too slow to develop and adapt to modern technological innovations and emerging technologies. For instance, commentators have argued that the USPTO was not properly equipped to examine the emerging business method industry.⁹² Patents were awarded for innovation that came to the USPTO for the first time in a patent application, but had existed in the real world for quite some time.⁹³

In the area of business methods, Congress recognized the USPTO's late start in examining business method patent applications,⁹⁴ and created a statutory exception so that if someone were using a business method prior to the existence of a patent, they could not be held liable for infringement.⁹⁵ This exception is somewhat analogous to the defense of independent creation in the copyright realm of intellectual property.⁹⁶

The inability of the USPTO as an institution to adapt quickly to court decisions regarding patents leads to weak patents. The USPTO relies heavily on its databases of issued patents and pending patent applications to determine if a patent application in

92. JAFFE & LERNER, *supra* note 42, at 145-48. The USPTO does not have a reliable or consistent method of searching prior art in databases other than their own. *Id.* at 147-48.

93. *See id.* at 146-47.

94. Business method patent applications exploded in the wake of *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998). *See* USPTO, Class 705 Application Filing and Patents Issued Data, <http://www.uspto.gov/web/menu/pbmethod/applicationfiling.htm> (last visited Feb. 28, 2009) (showing that between 1998 and 1999 Business Method patent applications more than doubled from 1337 to 2852 and that in the following year, 2000, applications doubled again with 7733 filings). *State Street* opened the door by exclaiming, “[w]e take this opportunity to lay this ill-conceived [business method] exception to rest.” 149 F.3d at 1375.

95. 35 U.S.C. § 273(b)(1) (2006).

96. *Sheldon v. MGM Pictures Corp.*, 81 F.2d 49, 54 (2d Cir. 1936) (“[I]f by some magic a man who had never known it were to compose anew Keats’s Ode on a Grecian Urn, he would be an ‘author,’ and if he copyrighted it, others might not copy that poem, though they might of course copy Keats’s.”).

consideration is actually new and non-obvious.⁹⁷ If that database does not exist or it contains a paucity of references, then early patent applicants in an emerging area have an advantage due to the lack of prior references.⁹⁸

b. One Patent Equals One Invention

The USPTO applies the rule that one patent application should claim only one invention.⁹⁹ This rule makes sense for a chemical compound, as even a slight variation in a chemical structure can produce completely different results. In the high tech industry, however, it might make more sense if the USPTO could follow the unity of invention approach. This approach is followed in the Patent Cooperation Treaty for international patent applications and is defined as a “group of inventions so linked as to form a single general inventive concept.”¹⁰⁰ If the USPTO allowed a domestic applicant to apply for a unity of invention patent then the inventors of a single computer chip that integrates fifty different patentable innovations, for example, may need to file only one application.¹⁰¹ Some contend that this approach would vastly simplify patent prosecution in the high technology areas and result in stronger patents.¹⁰²

D. Compulsory Licensing—A Change in Judicial Attitude

The tone has changed recently in the Supreme Court’s patent jurisprudence. In *eBay v. MercExchange*, the Court unanimously overturned a long standing practice in the Federal Circuit of

97. See U.S. Patent & Trademark Office, General Information Concerning Patents, <http://www.uspto.gov/web/offices/pac/doc/general/index.html#top> (last visited Feb. 28, 2009).

98. See generally *id.*

99. 37 C.F.R. § 1.141 (2007).

100. MANUAL, *supra* note 51, 1850, R. 13.1.

101. Compare 37 C.F.R. § 1.141 (2007), with 37 C.F.R. § 1.475 (2007) (restricting a patent application to one invention in national patent application but allowing an application for a unity of invention in an international application).

102. See, e.g., Letter from Charles M. Kinzig, Vice President Corporate Intellectual Prop., GlaxoSmithKline, to Kathleen Kahler Fonda, Legal Advisor, Office of the Deputy Comm’r for Patent Examination 3-4 (Oct. 15, 2007), available at <http://www.uspto.gov/web/offices/pac/dapp/opla/comments/markush/gsk.pdf>.

awarding permanent injunctions except in extraordinary circumstances.¹⁰³ Although the widespread effect of this ruling will develop over the next several years, the district court on remand denied MercExchange's request for a permanent injunction.¹⁰⁴ The court employed the four-factor equity test requiring that the

plaintiff ... demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.¹⁰⁵

In applying the four-factor equity test, the court found that MercExchange could not show "irreparable injury," thus rejecting the former standard that irreparable injury was presumed.¹⁰⁶ In its analysis, the court emphasized that MercExchange did not practice its patents as a patent holding and licensing company, and that in the initial court proceeding MercExchange did not ask for injunctive relief.¹⁰⁷ The court also found that because MercExchange sought to use the injunction as a bargaining chip in negotiation, the court could instead order damages that would adequately remedy the controversy.¹⁰⁸ In so holding, the court looked to the concurring opinion by Justice Kennedy in the Supreme Court opinion.¹⁰⁹

An industry has developed in which firms use patents not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees. For these firms, an injunction, and

103. 547 U.S. 388, 391-94 (2006).

104. *MercExchange, L.L.C. v. eBay, Inc.*, 500 F. Supp. 2d 556 (E.D. Va. 2007). For a tracking of injunctions since *eBay*, see Joseph Scott Miller, *The Fire of Genius: Injunction*, <http://www.thefireofgenius.com/injunctions> (last visited Feb. 28, 2009).

105. *eBay*, 547 U.S. at 391 (citation omitted).

106. *MercExchange*, 500 F. Supp. 2d at 568-69. The court upheld the enacted patent right that the Federal Circuit has used to justify the presumption of irreparable harm, concluding that any "additional leverage in licensing" is "a natural consequence of the right to exclude and not an inappropriate reward" to the patent holder. *MercExchange, L.L.C. v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005), *rev'd*, 547 U.S. 388 (2006).

107. *MercExchange*, 500 F. Supp. 2d at 570-73.

108. *Id.* at 582.

109. *Id.*

the potentially serious sanctions arising from its violation, can be employed as a bargaining tool to charge exorbitant fees to companies that seek to buy licenses to practice the patent. When the patented invention is but a small component of the product the companies seek to produce and the threat of an injunction is employed simply for undue leverage in negotiations, legal damages may well be sufficient to compensate for the infringement and an injunction may not serve the public interest.¹¹⁰

These words strike out at the practice of using the courts as tools of negotiation for licensors of patented technologies. The spirit of Justice Kennedy's words—that the patentee's right to exclude should be exercised when actually trying to exclude and not simply to gain a better bargaining position—are relied on in the framework that follows. This Note takes this idea a step further by contending that any patentee who dilutes the patent's right to exclude should lose it.

II. THE BALANCING FRAMEWORK

A. A Shortened Exclusive Right

The framework that this Note suggests is basic in concept but analyzing its potential effect on patent policy is a much more difficult task. Essentially, patents would issue in much the same way they do now and would be entitled to a certain period of protection.¹¹¹ The difference is that the patent right is bifurcated into periods of exclusive rights and a remaining period of licensing rights. While property rights exist for the patent's entire life, the right to exclude is initially shortened but renewable under certain circumstances, and the remainder of the patent's life is subject to mandatory licensing.¹¹² The right to exclude would be renewable in many circumstances, and when such circumstances warrant, the patentee could extend the exclusive interest up to the entire enforceable life of the patent—twenty years from filing. The

110. *eBay*, 547 U.S. at 396-97 (Kennedy, J., concurring) (citations omitted).

111. 35 U.S.C. § 154(a)(2) (2006) (currently twenty years from date of filing).

112. Mandatory licensing as used in this Note is the same as compulsory licensing in the sense that a patentee who is subject to mandatory licensing has no recourse to exclude an infringer, but may only collect fees for use.

circumstances allowing for extension of the exclusionary right may include cases where the patentee practices the patent, the patentee holds the patent as a method for preventing competitors from marketing a product that is closely related to a patent that the patentee practices (blocking patent),¹¹³ the patentee is a research organization and requires exclusive patent protection for incentive to further develop and enhance the invention, or some other worthy exceptions.

For the purposes of this Note and discussion of the proposed framework, it may be helpful to provide a concrete example of the system with some of the variables filled in. Consider a patent system in which a patentee has five years from the date of filing the application to start a timer on three years of exclusive patent rights.¹¹⁴ The timer would begin upon issuance of the patent or at the five-year mark, whichever comes first. Exclusive rights run for three years. If the patentee qualifies at the end of the exclusive patent term, exclusive rights continue for another three years. If the patentee still qualifies at the conclusion of the second term of exclusivity, the exclusionary right renews for another three years, and so on until the entire enforceable patent interest is exhausted and the patent is turned over to the public. If the patentee does not qualify for exclusive rights to continue at the time when the exclusionary period must be renewed, then the patent enters a state of mandatory licensing.

There still exist many other detailed questions as to how to manage and restrict patentees' rights in their patents and the effect of willfulness or neglect in misuse of the system. One such concern is that someone may intentionally use the patented technology and not seek a mandatory license. In such a case, the patentee should be afforded the proper protection to encourage users to come forward.

113. See *Standard Oil v. United States*, 283 U.S. 163, 171 n.5 (1931) ("A patent may be rendered quite useless, or 'blocked,' by another unexpired patent which covers a vitally related feature of the manufacturing process."). The rationale would be the same as if the patentee were practicing the patent, or setting up an opportunity for a cross-license, a legitimate and desirable effect of patent law. *Id.* See also ABA SECTION OF ANTITRUST LAW, *supra* note 32, at 239-46.

114. The numbers were chosen without regard to any predetermined reference point; however, the five-year period and three-year renewable exclusivity periods approximate U.S. patent law's maintenance fees, required every four years to maintain patent rights beginning at three and a half years from the date of issue. 37 C.F.R. § 1.20(e) (2007).

A court could impose as a remedy an injunction of the use of the patented technology until any monetary judgment is paid, including treble damages if applied, and a license agreement has been ordered or agreed upon.¹¹⁵ Another consideration is whether to allow patentees to recapture exclusivity after having lost it. If allowed, it would be important to provide safe harbors for users of the technology during the time when exclusivity was not claimed. Practically speaking, allowing recapture would open the door for abuse by patentees who would, as a tactic, let their patent exclusivity lapse, and then reassert exclusivity to sue for injunction as a bargaining tool.

Making an assertion of exclusivity should require that it be done in good faith, the effect being that if the patentee makes an assertion of exclusivity, yet knew that the patent did not qualify, then that would rise to the level of patent misuse, and the patentee would lose all rights in the patent. The penalty has to be stiff if the system is to work, and thus the burden to show good faith should be low. Doctrines tempering the low burden could include any evidence that products or sales were fabricated for the primary or sole purpose of remaining eligible for exclusivity—a bad faith factor.

Five years as an initial limit on beginning the period of exclusive rights should give patentees enough time to really know the invention—its market potential, its role in leading to other patentable inventions, and its place in the patentee's overall personal or corporate strategy—regardless of whether the patent had been issued. This limit also serves as a counterbalance to patent applicants who would delay issuance of the patent as a tactic. Three years of exclusivity per renewable period are proposed for several reasons. Three years should give the patentee the time to determine whether to make the efforts necessary to maintain the exclusive right or let the patent become available for mandatory licensing. The three years also allow the patentee the ability to adjust strategy based on the market performance of the patented product, rather than simply revoking exclusive rights immediately on some event—such as bankruptcy or supply issues—that would otherwise render the patentee unable to maintain exclusive rights until rectification of such a situation. Finally, it allows the patentee to

115. See 35 U.S.C. § 284 (2006).

recover exclusive rights if, within a period of exclusivity the patent enters a state which would not allow exclusivity to continue, but, by the end of the three years, a condition for renewed exclusivity has been reestablished.¹¹⁶

For example, in the table manufacturer hypothetical above, recall that table manufacturer *G* could be excluded from manufacturing her operating table as long as any one of *A* through *F* desired to enjoin her from doing so. In the proposed system, if *A* licenses to *B-F*, then *A* must license to *G*. Likewise, if *B* licenses to *C-F*, then *B* must license to *G*, and so on. Only *F*, who licenses to no one, could seek to enjoin *G* from manufacturing operating tables. This makes sense because the scope of *G*'s patent is more similar to the scope of *F*'s patent, and if *F* manufactures a competing operating table, *F*'s patent should serve as a means of keeping *G* out of the marketplace. If *F* does not practice the patent, however, then *G* could force *F* to license the patent to her once *F*'s patent is in a mandatory licensing state.

The following sections explore in greater depth the conditions that would allow the exclusionary period to renew, the procedural aspects of renewing exclusive rights, and exactly how the mandatory license would work.

B. Application of the Renewal of the Exclusionary Right

1. Conditions for Allowing the Right To Renew

To encourage inventors to solve their problems through innovation, two situations that satisfy the conditions for renewability of the exclusionary right are: (1) where the patentee practices a patent, and (2) where the patentee practices a patent closely related to the one she does not. For example, a manufacturer of a medical screw may hold ten patents on ten variations of the medical screw, each one patentably distinct from the others, but not distinct enough to create a market for all ten variations. Moreover, were the patent owner forced to license one of the nonpracticed patents after the

116. Of course, the condition for reestablishing exclusivity must not be a sham, only done for the sake of renewing exclusive patent rights. See, e.g., *Mahurkar v. Impra, Inc.*, 71 F.3d 1573, 1577 (Fed. Cir. 1995) (concluding that a sale was a "sham" which did not trigger the "on sale" bar of 37 U.S.C. § 102(b)).

exclusionary period had expired, the marketability of the screw she manufactures would suffer because of the relatedness between the patents she does and does not practice.

To help contrast which patent owners the proposed framework would affect, there are two situations which should not qualify a patent for an extension of exclusionary rights: (1) the patentee licenses the patent to multiple organizations, and (2) the patentee simply holds on to the patent.¹¹⁷

The paramount factor in determining whether a situation satisfies the condition for renewability should be that the patentee either did not voluntarily dilute the exclusive right by choosing to exclude some but not others, or that the patentee did not use the exclusive right by making use of the patent herself. Other specific policy goals of society, however, such as combating hunger and disease, providing affordable medicines to third-world nations, or developing alternative renewable energy sources, could allow exclusivity renewability in key technological areas.¹¹⁸ But in the normal case, the key to determining whether the exclusionary right persists is whether the patentee exercises the right. As the cliché posits, “If you don’t use it, you lose it.” In determining other qualifications allowing the extension of exclusivity, the reasons arguably should further the goal of promoting progress.¹¹⁹

2. Forward-Looking/Backward-Looking Implementation

The logistics of how to renew the exclusionary right are important, for a change in patent law that places too much burden on the system through increased transaction costs and delays would surely

117. A closer call would be where a patent owner exclusively licenses a patent in return for some percentage of sales associated with the product because the patent owner is still retaining an interest in the patent which varies on the market value of the patent and is therefore not truly *exclusive*. This would be less of a problem if the patentee exclusively licensed the patent for a flat rate because, although the patentee retains an interest in the patent, it would look more like a lease.

118. For example, an inventor that creates a revolutionary battery technology may be given the option to exercise limited licenses to help offset the possible disincentive that mandatory licensing might present, giving potentially greater remuneration when society perceives a much greater utility than the average invention.

119. See U.S. CONST. art. I, § 8, cl. 8.

fail.¹²⁰ Perhaps the best approach would be to require patentees to claim their exclusionary right, filing a statement with the USPTO to accompany the patent file every three years.¹²¹ The claim need not be examined for accuracy or for actual compliance with the requirements for exclusivity, but it would serve to announce to the public (1) that the patentee asserts that she has a legal right to exclude and (2) on what basis the patentee believes she qualifies for the right under the accepted conditions for exclusivity. It would also bind the patentee to the assertion. Subsequent litigation could use those statements to show whether they were made in good faith or in misconduct and to show actual notice to the infringer. On receipt of an infringement notice from a patentee, the alleged infringer could examine the statements claiming exclusionary rights and determine whether to continue infringing, seek a declaratory judgment of noninfringement or patent invalidity, or cease infringement and develop a workaround.

C. Application of the Mandatory Licensing Period

The mandatory licensing period serves three primary purposes: it keeps licensing agreements fair, encourages innovation where innovators would have been previously enjoined, and moves up the time at which society gains free market access to the patented technology. In all cases of mandatory licensing, the patentee will still get paid for use of the patent. The patent is a property right, but the mandatory licensing period simply unbundles the right to exclude.

120. The change would also likely need to be compatible with international treaties that the United States has signed dealing with patents and intellectual property. An exhaustive analysis of this aspect is beyond the scope of this Note, but the most comprehensive treaty covering patent law, the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), reveals that TRIPS allows a member country to determine provisions for compulsory licensing. WTO, Intellectual Property (TRIPS)—TRIPS and Public Health: Compulsory Licensing of Pharmaceuticals and TRIPS, http://www.wto.org/english/tratop_e/trips_e/public_health_faq_e.htm (last visited Feb. 28, 2009). See generally Agreement on Trade-Related Aspects of Intellectual Property Rights, Apr. 15, 1994, 33 I.L.M. 1197. Brazil, a member of TRIPS, has compulsory licensing provisions with pharmaceuticals. See *infra* note 168.

121. Inventors must similarly file a signed oath upon filing of a patent application. 35 U.S.C. § 115 (2006).

1. *Reasonable Royalty*

To assess damages in infringement suits, courts use a calculated reasonable royalty rate.¹²² A reasonable royalty rate is also used to calculate the value of provisional patent rights for infringement that occurs between the publication of a patent application and the issuance of a patent.¹²³ For example, a patent applicant may notify a potential infringer that the product it is producing would violate her patent once it has issued.¹²⁴ In other words, the right to exclude does not start until the patent is issued, but for the time lapse between when the infringer is notified and the issuance of the patent, the patent applicant can collect a reasonable royalty for use of her invention.¹²⁵

Because of its familiarity in patent law already, the reasonable royalty is likely the best candidate for assessing the cost of the mandatory licensing period of this framework. The reasonable royalty is supposed to represent the fair market value added to the infringing use.¹²⁶ In the mandatory licensing period, the patentee would still maintain the property right and so would be entitled to the fair market value of the technology until the patent expires. A distinct difference between the reasonable royalty rate of an infringement suit and that of the mandatory licensing period is that in an infringement suit the rate is for past infringement, whereas in the mandatory licensing period, the rate is for a continuing license.¹²⁷

2. *Calculating the Mandatory License*

Because the license is mandatory (the outcome is always a license), it could be implemented through arbitration, mediating

122. Lemley & Shapiro, *supra* note 37, at 1995-2000.

123. 35 U.S.C. § 154(d)(1) (2006).

124. *See id.* § 154(d)(1)(B) (requiring actual notice).

125. *Id.* § 154(d).

126. Lemley & Shapiro, *supra* note 37, at 1995-2000.

127. *See Amado v. Microsoft Corp.*, 517 F.3d 1353, 1361 (Fed. Cir. 2008) (“There is a fundamental difference, however, between a reasonable royalty for pre-verdict infringement and damages for post-verdict infringement.”).

licensing terms for the remainder of the patent's enforceable life.¹²⁸ This Note does not consider the merits of arbitration, but suggests it as an efficient way to achieve compulsory licensing because arbitration can accommodate some of the concerns of compulsory licenses.¹²⁹ Mark Lemley and Carl Shapiro set forth a structure for calculating the value of the patent to the product in a technology setting; however, their basic calculation could be used as a base value determined in any patent infringement action.¹³⁰

Before arbitration or some other legal remedy is used, the parties would have an opportunity to negotiate a licensing agreement in the free market.¹³¹ Because the outcome of the negotiation is always a license, either determined by a judicial body or by the parties themselves, the parties have a strong incentive to reach an agreement on their own.¹³²

The arbitrator would not find whether the patent is valid, but instead would determine a sliding scale of validity—the patent strength.¹³³ Consider the judicial quandary of *NTP v. RIM* and how the court's judgment has been essentially turned on its head by the USPTO.¹³⁴ If the court instead could have declared that the patents in question were more likely valid than not, and imposed a compulsory license rather than an injunction, a subsequent reexamination in the USPTO would not be completely contrary to the findings of the district court. Indeed, an infringer may wish to avoid the uncertainty of requesting reexamination and license the patentee's technology willingly—resulting in a net increase in licensing overall.

128. Arbitration would allow expert third-party arbitrators to consider case-by-case attributes. See Federal Arbitration Act, 9 U.S.C. § 5 (2006).

129. See RICHARD A. EPSTEIN, *OVERDOSE: HOW EXCESSIVE GOVERNMENT REGULATION STIFLES PHARMACEUTICAL INNOVATION* 49-50 (2006) (arguing that a compulsory licensing system must have provisions dealing with the same things that voluntary licensing would: sharing of research results, assignment of rights, delegation of duties, sharing of trade secrets, definition of net sales, etc.).

130. Lemley & Shapiro, *supra* note 37, at 1995-2000. The patent must be evaluated at least for its strength, then the strength is multiplied by its overall contribution to the product, and adjusted by the net effect of using an alternative. *Id.* at 1996-97.

131. *Id.* at 1995-2000.

132. See generally Steven J. Elleman, *Problems in Patent Litigation: Mandatory Mediation May Provide Settlements and Solutions*, 12 OHIO ST. J. ON DISP. RESOL. 759 (1997) (discussing the difficulties of litigating patent disputes and the desirability of alternative dispute resolution).

133. Lemley & Shapiro, *supra* note 37, at 1996-97.

134. See *supra* notes 63-69 and accompanying text.

Assuming that NTP appeals the final rejections of their patents to the Federal Circuit and the Federal Circuit upholds the rejections, the unique occurrence would have happened where the same court has had the same patents come before it and reached two opposite results as to their validity.

D. Parallel Arguments and Practices

1. Past Arguments for Compulsory Licensing

Although this Note's argument tying the right to exclude with the exercise or dilution of the right in the proposed framework is novel, certainly the idea of compulsory licensing provisions in patent law is not. Indeed, the Senate in the Patent Act of 1790 proposed a provision for compulsory licensing that was rejected by the House.¹³⁵

Commentators have generally disdained the power inherent in the right to exclude, applied to the marketplace and technology of today.¹³⁶ But even as many as sixty years ago one commentator called upon the exclusionary right to be "conditionally exclusive."¹³⁷ Another early commentator determined that compulsory licensing, if enacted, would be constitutional.¹³⁸ Even a study sponsored by the Senate Judiciary Committee yielded the suggestion of compulsory licensing as many as fifty years ago.¹³⁹ The patent system of India has a time limit to exclusivity that is similar to this Note's proposed framework.¹⁴⁰ The Indian patent system has been used to argue that

135. BRUCE W. BUGBY, *GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW* 143 (1967).

136. See JAFFE & LERNER, *supra* note 42, at 60-64 (arguing that exclusivity and cross-licensing creates a restriction in competition); LAWRENCE LESSIG, *THE FUTURE OF IDEAS* 116 (2001) ("The extreme protections of property are neither needed for ideas nor beneficial."); Richard T. Jackson, *A Lockean Approach to the Compulsory Patent Licensing Controversy*, 9 J. TECH. L. & POL'Y 117 (2004) (arguing for broader use of compulsory licensing); Pankaj Tandon, *Optimal Patents with Compulsory Licensing*, 90 J. POL. ECON. 470 (1982) (arguing that compulsory licensing may mitigate the monopoly problem associated with patents).

137. Nicholas A. Vonneuman, *Conditionally Exclusive Patent Rights and the Patent Clause of the Constitution*, 5 AM. J. COMP. L. 391, 394 (1956).

138. Frank I. Schecter, *Would Compulsory Licensing of Patents Be Unconstitutional?*, 22 VA. L. REV. 287, 313-14 (1936).

139. STAFF OF SUBCOMM. ON PATENTS, TRADEMARKS AND COPYRIGHTS, S. COMM. ON THE JUDICIARY, 84TH CONG., *PROPOSALS FOR IMPROVING THE PATENT SYSTEM* 25-26 (Comm. Print 1956).

140. The Patents Act, No. 39 of 1970, § 84(1); India Code (1970) (allowing a compulsory license after three years from grant if "the reasonable requirements of the public with respect

compulsory licensing should be more quickly available in less developed countries primarily to allow those countries faster access to generic versions of effective pharmaceuticals.¹⁴¹ In the area of biotechnology, a fair use exception combined with strict licensing regulation has been suggested to ease hold up and royalty stacking effects in biotechnology research.¹⁴² One commentator has even suggested similar compulsory licensing for a more elaborate experimental use exception with regard to research tools.¹⁴³ The main purpose of compulsory licensing is to overcome the right to exclude, allowing access to the patent sooner. Abandonment of the patent presents another way to overcome the right to exclude. Although this can be done explicitly by the patentee through a dedication to the public, the USPTO encourages abandonment through escalating maintenance fees.¹⁴⁴

2. Patent Maintenance Fees

The USPTO currently requires periodic “maintenance fees” to retain the rights of utility patents.¹⁴⁵ This fee represents no examination work burden on the USPTO, and so the continual escalation of the maintenance fee suggests that it is prohibitive enough that, as the patent ages, it serves as a means to weed out the patents to which patentees no longer think the exclusive rights are worth maintaining.¹⁴⁶ The USPTO could increase these maintenance fees both in frequency and amount. If it did, patentees with

to the patented invention have not been satisfied or that the patented invention is not available to the public at a reasonable price”).

141. Le-Nhung McLeland & J. Herbert O’Toole, *Patent Systems in Less Developed Countries: The Cases of India and the Andean Pact Countries*, 2 J.L. & TECH. 229, 244-45 (1987).

142. Laurie L. Hill, *The Race to Patent the Genome: Free Riders, Hold Ups, and the Future of Medical Breakthroughs*, 11 TEX. INTELL. PROP. L.J. 221, 254-55 (2003).

143. Katherine J. Strandburg, *What Does the Public Get? Experimental Use and the Patent Bargain*, 2004 WIS. L. REV. 81, 138-45.

144. See 37 C.F.R. § 1.321(a) (2007) (terminal disclaimer and dedication to the public).

145. *Id.* § 1.20(e)-(g) (stating fees to be \$900, \$2300, \$3800 at 3.5, 7.5, and 11.5 years, respectively).

146. A parallel exists in copyright, in that the majority of copyright rights are given away freely by their owners when it becomes clear there is no potential remuneration available. See, e.g., William M. Landes & Richard A. Posner, *Indefinitely Renewable Copyright*, 70 U. CHI. L. REV. 471, 473-74 (2003).

valuable patents or the ability to pay would pay the fees without hesitation, whereas patentees with a patent that has no market value would let their rights expire. This proposed framework is a middle ground, allowing patent rights to continue, but giving society the ability to access the technology sooner.

III. OUTCOME ASSESSMENTS

A. The Patent Interest

The interests of society are a complex system of balances that cannot be easily captured. For simplicity of argument, this Note assumes that society's primary interest in granting to inventors their patent comes down to use—encompassing derivative use, present use, future use, use to improve the quality of life, and use to promote competition and lower prices. In the context of this Note, this assumption probably has no negative impact on other potential societal interests in patent law, such as the desire to be a world leader in innovation. There could be an effect, however, in political interest and philosophies of political parties. For example, while this Note is not necessarily anti-business, its proposals ultimately would reduce patenting rights, which would affect all businesses directly or indirectly.

Likewise, this Note assumes that inventors and businesses who own patents share the same essential interests and that the primary interest in seeking patent protection is monetary—encompassing product sales, patent licensing, marketplace health (to drive sales/licensing), protection market share, and future money potential by derivative patents. This assumption is subject to the criticism that universities and public institutions research and develop for reasons beyond mere monetary returns; however, seeking patent protection over defensive publication, a publication that would prevent anyone from obtaining a patent is evidence that money, although not necessarily a direct cause of research, is a direct cause of patent application.¹⁴⁷ Furthermore, many of the interests of businesses and inventors are irreconcilable in the areas of incentive, strategy, cost, and ease of patenting—small-time

147. See 35 U.S.C. § 102(a) (2006).

inventors are at a distinct disadvantage due to their more limited resources.¹⁴⁸ The subject matter of this Note may affect incentive and strategy, but not significantly insofar as the small-time inventor and big business is concerned.¹⁴⁹

B. Standard of Success

The standard of success for any change to patent law is an enhancement of the propensity to promote progress.¹⁵⁰ The shortened time frame of exclusivity would have one of three outcomes: dampen the spirit of innovation, heighten the spirit of innovation, or have no effect at all. The actual change in the patent law most analogous to the one proposed is the change of the term of a patent from seventeen years from issue to twenty years from filing.¹⁵¹ At the time, there was much debate about the effect the change would have on innovation.¹⁵² The actual effect, however, did not seem to stifle innovation; patent applications have increased every year since 1994, and in 2005 were more than twice what they were in 1994.¹⁵³ In this Note's proposed framework, the patentee would

148. Robert E. Thomas, *Vanquishing Copyright Pirates and Patent Trolls: The Divergent Evolution of Copyright and Patent Laws*, 43 AM. BUS. L.J. 689, 729 (2006).

149. *But see id.* (arguing that the decreasing likelihood of permanent injunction harms the capacity of small entities to enforce patents).

150. *See Grant v. Raymond*, 31 U.S. (6 Pet.) 218, 241 (1832) ("To promote the progress of useful arts, is the interest and policy of every enlightened government."); *Hilton Davis Chem. Co. v. Warner-Jenkinson Co.*, 62 F.3d 1512, 1536 (Fed. Cir. 1995) (Newman, J., concurring) ("[P]atent law is directed to ... fostering technological progress, investment in research and development, capital formation, entrepreneurship, innovation, national strength and international competitiveness.").

151. *See Uruguay Round Agreements Act*, Pub. L. No. 103-465, § 532, 108 Stat. 4809 (1994) (codified as 35 U.S.C. § 154(a)(2) (2006)).

152. PHARMACEUTICAL INDUSTRY SPECIAL EQUITY ACT OF 1996, S. REP. NO. 104-394, at 13 (1996) ("The 20-year patent term was a very contentious issue. Congress held hearings on this matter and heard from many in industry, especially the pharmaceutical and biotechnology industry, who had concerns that the 20-year term might erode patent terms in this country."); *see also id.* ("It was a major sacrifice on the part of the biotechnology and the pharmaceutical industries to support the 20-year provisions of the URAA in favor of harmonized patent rules internationally. With a 20-year term from filing, applicants, including pharmaceutical and biotechnology applicants, are no longer able to extend their patent terms through intentional delay in the Patent and Trademark Office.").

153. U.S. PATENT & TRADEMARK OFFICE, U.S. PATENT ACTIVITY, CALENDAR YEARS 1790 TO THE PRESENT at 1 (Apr. 23, 2008), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.pdf.

suffer a major loss—patent exclusivity—if she did not qualify for a renewable exclusionary period. This would certainly result in some stifling of innovation, but the overall effect on innovation would likely be an increase because other inventors would gain access to patented subject matter sooner. If a statistical analysis could be made that correlated compulsory licensing with its impact on innovation, a serious endogeneity problem would suggest the use of another measure—perhaps the number of patents applications filed. Two problems with such an analysis are that court-imposed compulsory licensing seldom occurs such that there would be too few data points, and that the risk of employing another measure to overcome the endogeneity problem invites logic errors from the lack of identifying other variables that could also be affecting the chosen index. Rather than attempt to identify by statistics how the proposed framework would affect innovation, a pragmatic argument is made in the following sections by attempting to analyze how two different market sectors would be affected by the framework.

C. The Pharmaceutical Industry

1. Perspective

One of the largest proponents of strict exclusionary interests is the pharmaceutical industry.¹⁵⁴ This industry has huge profit potential but is subjected to outside regulation, potential liability, and capital risk in developing new drugs.¹⁵⁵ Drug companies have two strong arguments to support exclusionary rights. First, only about 10 percent of developed drugs are successfully brought to market—pharmaceutical companies take a gamble with every

154. Brief for Pharmaceutical Research and Manufacturing of America as Amicus Curiae Supporting Respondent at 2, *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130) (“As practitioners in an industry where research and development are expensive and competition is fierce, PhRMA’s members need strong patent protection to be able to recoup the costs of their investments.”).

155. See MARCIA ANGELL, *THE TRUTH ABOUT THE DRUG COMPANIES: HOW THEY DECEIVE US AND WHAT TO DO ABOUT IT* 11 (2004). In 2002, in conjunction with the rest of the economic turndown, pharmaceutical profits dropped from 18.5 percent to 17.0 percent; however, the combined profits for the ten drug companies in the Fortune 500—\$35.9 billion—were still more than the profits for all the other 490 organizations combined—\$33.7 billion. *Id.* Another 2.7 percent drop in profits occurred in 2003, but drug companies’ profits were still well above the median profit of 4.6 percent for all industries. *Id.*

development of a new drug.¹⁵⁶ Second, because of the regulations of the Food and Drug Administration (FDA) and delays in the Patent Office, they might argue that they have a shortened time to enforce or practice their patent before it expires.¹⁵⁷

Although bringing new drugs to suffering people who need them is a noble endeavor, the primary interest for a pharmaceutical company is profit. This is reflected in R & D, marketing, and patent strategies. Drug companies often spend a lot of money developing “me-too” drugs, which are drugs classified by the FDA as being no better than what was already available.¹⁵⁸ These drugs, combined with marketing and patent strategies, can prolong market protection for essentially the same drug as the one that is no longer protected by patents.¹⁵⁹ One of the more recent examples of this in practice is AstraZeneca’s Nexium heartburn drug. As AstraZeneca’s previous heartburn medicine, Prilosec, neared the expiration of its patent rights, Nexium was introduced in 2001.¹⁶⁰ Prilosec had been producing about \$6 billion in annual sales, so the loss of exclusivity would likely have been a devastating blow to sales as generics appeared on the market.¹⁶¹ Notwithstanding the similarity of the chemical formulas for Prilosec and Nexium, AstraZeneca was able to procure patent protection on Nexium and spent about \$500 million marketing the new product.¹⁶²

156. See DAVID B. RESNIK, *OWNING THE GENOME* 67 (2004) (“Only 30 percent of the drugs a pharmaceutical company develops will make it through the R & D process and be brought to the market. Only one third of those will be deemed to be successful. Thus, about 10 percent of the drugs developed net a profit.”).

157. See *id.* (arguing that because it takes on average ten years to test a new drug and bring it to market, plus the three years in the Patent Office, companies have only seven years of patent protection to recoup the \$500 million average cost to get the drug to the market). *But see* Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98-417, 98 Stat. 1585 (1984) (codified as amended at 21 U.S.C. § 355 (1994)) (allowing for recovery of patent term due to FDA process).

158. ANGELL, *supra* note 155, at 75 (showing that from 1998 to 2002, of the 415 new drugs approved by the FDA, 77 percent were “me-too” drugs).

159. *Id.*

160. *Id.* at 77 & n.4.

161. *Id.* at 77.

162. *Id.* (explaining that Prilosec is a mixture of an active form of the omeprazole molecule and isomers (inactive form of the same molecule), whereas Nexium is simply the active form isolated). Ironically, in four FDA drug trials sponsored by AstraZeneca comparing Nexium at two to four times the normal dose with the predecessor Prilosec given at its normal dose, it was demonstrated that in only two of the trials Nexium was marginally more effective than Prilosec. *Id.* at 78-79 & n.5.

Despite the sometimes dubious practices of the pharmaceutical industry, the evidence suggests that, *overall*, the drug system in the United States is working—that is, producing new and better drugs.¹⁶³ The question is whether the current patent system and accompanying laws provide too much protection, resulting in profits not commensurate with the value of the patent to innovation. In contrast to the U.S. patent system, until recently in India drugs were not themselves patentable, but only the process of making the drugs.¹⁶⁴ As a result, India's pharmaceutical industry rapidly went from new development with a large percentage of transnational pharmaceutical companies to companies that simply concentrated on copying patented drugs abroad, but with different processes.¹⁶⁵ Likewise, European drug companies, with restrictions on the free market effect of drug sales, have floundered compared to the companies in United States.¹⁶⁶ The success of United States drug companies domestically, however, comes at a global cost because of the relative wealth of the nations of the world along with the growing number of third-world countries entreating to recognize U.S. patent law.¹⁶⁷ Access to infringing use is cut off, and because

163. See ALFONSO GAMBARDELLA, LUIGI ORSENIGO & FABIO PAMMOLLI, REPORT FOR THE ENTERPRISE DIRECTORATE-GENERAL OF THE EUROPEAN COMMISSION, GLOBAL COMPETITIVENESS IN PHARMACEUTICALS: A EUROPEAN PERSPECTIVE 36-42 (2000), available at http://ec.europa.eu/enterprise_papers/pdf/enterprise_paper_01_2001.pdf.

164. Compare The Patents Act, No. 39 of 1970; India Code (1970), with The Patents (Amendment) Act, No. 15, of 2005; India Code (2002) (omitting section 5, restricting the patentability of drugs).

165. Carsten Fink, *Patent Protection, Transnational Corporations, and Market Structure: A Simulation Study of the Indian Pharmaceutical Industry*, in INTELLECTUAL PROPERTY AND DEVELOPMENT 227, 228-31 (Carsten Fink & Keith E. Maskus eds., 2005). Because of the lack of pharmaceutical patent protection in India, the market share of transnational pharmaceutical companies declined from as high as 90 percent in 1970 to 39 percent in 1993. Furthermore, profitability declined from about 15 percent to 1 percent in the same approximate period and most R & D activity by Indian-owned firms has concentrated on imitating or adapting pharmaceutical products abroad. *Id.*

166. See generally GAMBARDELLA, ORSENIGO & PAMMOLLI, *supra* note 163 (explaining that the U.S. pharmaceutical industry has flourished compared with the same industry in Europe due to the free market that the United States provides).

167. See PETER DRAHOS, INFORMATION FEUDALISM: WHO OWNS THE KNOWLEDGE ECONOMY? 10-12 (2002) (arguing that TRIPS benefits primarily the U.S. and European Union and that the effect on less developed countries is to limit severely their citizens' freedom while giving up their own sovereignty over something as fundamental as property).

the people cannot afford legitimate use, essentially all access is eliminated.¹⁶⁸

The biomedical field supports the pharmaceutical industry by performing federally funded and privately endowed research. In some senses biomedical researchers are the same as the R & D arm of a pharmaceutical company, but they often seek innovation for the sake of innovation and academia, not money. Much of the biotechnology research and development in the United States is done by public and private universities and by the government through the National Institute of Health.¹⁶⁹ Prior to the Bayh-Dole Act of 1975, patents procured on research projects funded by government money were in the public domain—anyone could develop and use them.¹⁷⁰ The problem was that pharmaceutical companies, the most likely user of biotechnology innovations, did not think the risk worth the reward to develop the innovation into a marketable product. Food and Drug Administration testing and expense, along with the fact that as soon as a successful product was made generic drug companies could come in and quickly recreate what was done, stifled the development of publicly funded biomedical research into marketable products.

2. *Effects of the Mandatory License*

Although mandatory licensing would limit the rights of pharmaceutical companies in certain contexts that would probably have a direct negative effect on innovation, a correlative encouragement of

168. Brazil has combated its HIV/AIDS problem through pharmaceutical legislation. Although it provides patent protection for pharmaceuticals, through compulsory licensing provisions is able to provide antiretroviral therapy for \$0.57 per day per person. As a result, Brazil does not face the crisis that many African countries do. *Id.* at 8-9.

169. Clive Cookson, *Universities Drive Biotech Advancement*, FIN. TIMES, May 7, 2007, at 8; see Richard P. Rozek & Bridget A. Dickensheets, *Encouraging Cooperation Among the Academic, Government and Private Sectors in US Biomedical R&D*, in THE INTELLECTUAL PROPERTY DEBATE: PERSPECTIVES FROM LAW, ECONOMICS, AND POLITICAL ECONOMY 118, 133 (Meir Perez Pugatch ed., 2006) (arguing that progress in biomedical R & D requires the cooperation among the academic, government, and private sectors due to the multi-tiered approach to biomedical development).

170. See University and Small Business Patent Procedures Act, 35 U.S.C. §§ 200-212 (2000).

innovation occurs in two ways.¹⁷¹ First, access would be improved to patented technology so that an inventor could improve on the work of another without undue hardship.¹⁷² Second, because pharmaceutical companies would qualify for exclusive rights extensions for patents that they own and practice, they would be encouraged to develop drugs in-house, while university- and government-sponsored research would continue, resulting in more research efforts overall.¹⁷³ The net effect would lean toward an increase in the encouragement of innovation.

Pharmaceutical companies are powerhouses of profit. One might think that the proposed framework would diminish the industry's bottom line, but the FDA already gives exclusivity incentives to pharmaceutical companies that help commercialize federally funded drugs.¹⁷⁴ Bristol-Myers Squibb profited by billions of dollars under this type of arrangement.¹⁷⁵ Research by the National Cancer Institute (NCI) in the 1960s revealed that paclitaxel could be highly effective against tumors, but with little progress made over the next twenty-five years, and with the National Institute of Health (NIH) unable to provide enough paclitaxel to continue clinical studies, the technology was transferred to Bristol-Myers Squibb for commercialization.¹⁷⁶ Worldwide sales of the brand name paclitaxel, Taxol, were \$9 billion as of 2003.¹⁷⁷ In return for their \$183 million

171. Complicated and comprehensive patent protection may stifle some innovation. See DRAHOS, *supra* note 167, at 3 ("When a group of scientists stop working on a protein molecule because there are too many intellectual property rights that surround the use of the molecule, a basic freedom, the freedom to research, has been interfered with."); EPSTEIN, *supra* note 129, at 47 ("[M]ultiple monopolies of separate patent holders prevent the coordination of research efforts needed for the further development of pharmaceutical products.").

172. The starting period could be adjusted for the delays in the FDA as in the Hatch-Waxman Act for Patent Restoration. See Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98-417, 98 Stat. 1585 (1984) (codified as amended at 21 U.S.C. § 355 (1994)). The Act also gives the FDA the ability to allow a pharmaceutical product to be produced exclusively by one company in certain situations. *Id.*

173. Prior to the Bayh-Dole Act, pharmaceuticals had no right to an exclusive license on federally funded biotechnology research patents. See University and Small Business Patent Procedures Act, 35 U.S.C. §§ 200-212 (2000). In contrast, government and university research funding does not come with the expectation of monetary returns.

174. See Drug Price Competition and Patent Term Restoration Act of 1984, Pub. L. No. 98-417, 98 Stat. 1585 (1984) (codified as amended at 21 U.S.C. § 355 (1994)).

175. ANGELL, *supra* note 155, at 58-59, 66.

176. Rozek & Dickensheets, *supra* note 169, at 132.

177. ANGELL, *supra* note 155, at 66. Moreover, the author argues that the assistance that Bristol-Myers Squibb provided to gain exclusivity from the FDA was not much more than

investment, the NCI and NIH received only \$35 million of \$9 billion in sales, while Medicare further paid Bristol-Myers Squibb hundreds of millions of dollars for treatments.¹⁷⁸

These measures already ensure that pharmaceutical companies have extended special market protection, but the framework could also provide profit protection as one of the reasons for exclusivity extensions. It could borrow from section 18 of the 1836 Patent Act, which provided for patent term extensions if the patentee “failed to obtain, from the use and sale of his invention [during the normal patent term], a reasonable remuneration for the time, ingenuity, and expense”¹⁷⁹ This same reasoning could allow exclusionary extensions when the pharmaceutical patentee is progressing toward reasonable remuneration. Once the patentee has sufficiently profited,¹⁸⁰ the exclusionary right should be abrogated and the patentee subjected to mandatory licensing. In the case of Taxol, more money would be returned to NIH, which could then fund even more progressive research.

But without these extra protections for pharmaceutical companies, mandatory licensing of pharmaceuticals could potentially slow new drug development, as in the days before the Bayh-Dole Act, which allowed pharmaceutical companies to gain exclusive rights to publicly funded research.¹⁸¹ The question becomes whether the entire patent system should be engrossed by the interests of pharmaceutical companies. As the costs of drug development increase, supporting pharmaceutical companies’ innovation through the patent system becomes a value judgment for society. There may exist better alternatives to achieve the same interest in innovation at less of a cost on the entire patent system.

funding a third-party chemical company to produce the chemical compound and clinical research trials. *Id.*

178. *Id.* at 58-59, 66.

179. Patent Act of 1836, ch. 357, § 18, 5 Stat. 117, 125 (repealed 1860).

180. The cost of bringing a drug to market has been widely disputed. Compare RESNIK, *supra* note 156, at 67 (finding a \$500 million average cost to get a drug to the market), with Christopher P. Adams & Van V. Brantner, *Estimating the Cost of New Drug Development: Is It Really \$802 Million?*, 25 HEALTH AFFAIRS 420, 427 (2006) (“Our estimate of \$868 million suggests, if anything, that \$802 million is an underestimate.”); Joseph A. DiMasi, et al., *The Price of Innovation: New Estimates of Drug Development Costs*, 22 J. HEALTH ECON. 151, 166, 181 (2003) (finding an \$802 million average).

181. See *supra* note 170 and accompanying text.

D. The Patent Licensing Industry

1. Perspective

The rainmaker situation for a patent licensing company (PLC) is torpedo enforcement, completely unexpected and devastatingly damaging. Because the business model of a PLC is to enforce the exclusionary rights of patents through licensing and suing, it has a real incentive to hold patents quietly and enforce strategically for maximum gain.¹⁸² Some argue this is a legitimate business practice, while others say it is not fair play, as it twists the system beyond its intentions.¹⁸³

The PLC wants exclusive rights for as long as can be had. PLCs of today are not unlike Jerome Lemelson of old.¹⁸⁴ In his life, Lemelson acquired 558 patents primarily by researching what others were doing and then drafting patent claims to cover their inventions.¹⁸⁵ PLCs look for patents to acquire and hold.¹⁸⁶ They then regularly scour the market for potentially infringing patents, investigate potential infringers, and take action on the likely candidates.¹⁸⁷ If they do not license or sue, then they are not making money. Also, by waiting to sue, whole industries will unknowingly rely more on the technology covered by the patent. When the patent is enforced, the PLC can pursue a whole industry sector for royalties.¹⁸⁸

An example of this began in 2003, when Acacia Technologies began to assert its patents covering streaming media against hundreds of online adult sites.¹⁸⁹ Nevermind that streaming media

182. See STOBBS, *supra* note 78, at 217 (explaining “submarine patents”).

183. See generally James F. McDonough III, *The Myth of the Patent Troll: An Alternative View of the Function of Patent Dealers in an Idea Economy*, 56 EMORY L.J. 189 (2007).

184. See *supra* notes 78-82 and accompanying text.

185. STOBBS, *supra* note 78, at 216 (explaining that Lemelson filed and kept up with his patent applications as a full time job). Lemelson and the modern patent troll are similar in that both have a strategic advantage in waiting until the market is ripe with the product before enforcing their patents.

186. See Lemley & Shapiro, *supra* note 37, at 1995.

187. *Id.*

188. One patent owner charges 0.75 percent royalty for patents that do not cover industry standards and 3.5 percent for patents that do. Lemley & Shapiro, *supra* note 37, at 2009.

189. Xenia Kobylarz, *Extreme Makeover: How Acacia Technologies, Once Derided as a Patent Troll, Grew Up and Got Respectable*, IP LAW & BUSINESS, Feb. 2007, at 24; Jonathan

had been around since at least 1995.¹⁹⁰ Once these sites started caving in to the threats of lawsuit and licensing Acacia's patents, Acacia had the momentum and credibility to arrange licensing with companies like the Walt Disney Company, Bloomberg, and LodgeNet.¹⁹¹

Prolific infringement demonstrates an upside to the PLC in that patent validity can be immaterial in a market with a cross-population of infringers if the PLC extorts a relatively small licensing fee from each alleged infringer.¹⁹² Because these infringers are usually in competition with each other, there is not enough of an advantage in spending millions of dollars litigating the validity of the patent when the net effect helps the competition more than the accused infringer.¹⁹³

Due to the nature of the business model of the PLC and the way the patent system works, the highest potential for remuneration comes by waiting to assert until there is a successful product in the market that infringes.¹⁹⁴ The PLC has no incentive to cross-license because it does not practice the patent; thus, money is the only compensation that an alleged infringer can offer.¹⁹⁵

Royalty stacking is a practice in which several members of a patent thicket assert their patent rights against a technological product by extracting licensing fees potentially in excess of the value of the product.¹⁹⁶ Even within something as simple as navigating a web page, the use of a web browser implicates as many as thirty Internet communication standards, each covered by multiplicities of patents.¹⁹⁷ Patent portfolios and patent pools mitigate the licensing problems, but do not eliminate them because participation

Krim, *Patenting Air or Protecting Property?*, WASH. POST, Dec. 11, 2003, at E1.

190. See RealNetworks.com, Company, <http://www.realnetworks.com/company/index.html> (last visited Feb. 28, 2009) (stating that RealNetworks released its first RealPlayer software in 1995).

191. Kobylarz, *supra* note 189.

192. Lemley & Shapiro, *supra* note 37, at 1995.

193. *Id.*

194. *Id.*

195. See JAFFE & LERNER, *supra* note 42, at 59-64 (explaining how cross-licensing applies to a technology thicket).

196. *Id.* at 62-63.

197. Bruce Perens, *The Problem of Software Patents in Standards*, in 3 THE STANDARDS EDGE: OPEN SEASON 173, 174 (Sherrie Bolin ed., 2005).

is voluntary.¹⁹⁸ Patent holdup is a growing concern because “[n]onpracticing entities file 30-40% of all patent suits in the computing and electronics industries”¹⁹⁹ Moreover, the price that patent holding companies can charge varies not on the patent, but on its effect in the marketplace.²⁰⁰ The \$612 million worthless license in the *NTP* case is a real world result of patent holdup.²⁰¹

2. *Effects of the Mandatory License*

PLCs might be the most at risk by this proposal, because by definition they do not practice patents and so would not qualify for exclusivity extensions. They would still be entitled, however, to the initial period of exclusivity. The proposal subverts the PLC strategy of torpedo enforcement because there is less incentive to wait to enforce the patent when the market ripens with infringers.²⁰² While this strategy would not be available, the overall effect may actually be to increase the ability for PLCs to license their patents, especially where the compulsory licensing period would result in a fair license for both parties. In the case of *NTP v. RIM*, once RIM was to be enjoined from infringement, there was a wide discrepancy in the parties’ relative bargaining positions.²⁰³ NTP was poised to collect from RIM the profit potential of the entire operation for the enforceable life of the patent or until RIM could implement a workaround.²⁰⁴ Had a reasonable and fair method of licensing been available, NTP probably would not have had its patents reexamined and thus held invalid.

With a significant number of all patent suits in the computing and electronics industries coming from nonpracticing entities, mandatory licensing could starkly affect the litigation and licensing

198. Lemley & Shapiro, *supra* note 37, at 2014-15. Patent portfolios and patent pools provide standard license fee entrance into the pool to access technology. *Id.*

199. *Id.* at 2009.

200. *See supra* note 188.

201. *See supra* Part I.C.3.b.

202. *See supra* Part I.C.3.b.

203. *See eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring); *Foster v. Am. Mach. & Foundry Co.*, 492 F.2d 1317, 1324 (2d Cir. 1974) (“An injunction to protect a patent against infringement ... is not intended as a club to be wielded by a patentee to enhance his negotiating stance.”).

204. Lemley & Shapiro, *supra* note 37, at 2000-01.

model in this area.²⁰⁵ Facing a mandatory license rather than an injunction, however, the accused infringer may prefer to pay a fair licensing fee and avoid the cost of litigation.²⁰⁶ Moreover, the cost of a fair licensing fee would encourage licensing by providing a reliable model. A reliable method of determining mandatory licenses would cause the number of licenses to increase. Furthermore, due to the mandatory availability of licensing, a greater number of licenses would be realized because they would be less risky and less expensive than trying to work around the patents. Although eliminating the need to work around a patent could be an argument against the proposed framework—many inventions are born out of trying to solve a problem of necessity—many innovators invent independently of any specific knowledge of the patents already in existence. Licensing becomes a vehicle to maintain access to the inventor's own work in hindsight rather than a vehicle to explicitly base work upon in foresight.

The theoretical real-world effect on the pharmaceutical and PLC industries shows a definite reduction in patent rights. In the case of pharmaceutical companies, however, profit protection mechanisms are already in place for those publicly funded biomedical patents that pharmaceutical companies help bring to market. For PLCs the proposed framework probably has less real effect in light of *eBay*. The framework takes *eBay* further though and would level the playing field for manufacturers who make use of a PLC's patents. Manufacturers would benefit by knowing that even if they are sued for infringement by a PLC, an injunction would be far less likely.

CONCLUSION

Society's interests are utilitarian—access to improved technology and better drugs sooner but at a reasonable cost. People are looking for Apple's new iPod, Nokia's new cell phone, safer vehicles, and computer programs or services that enhance productivity and entertainment. Some are willing to pay for the newest, whereas others wait to make their purchase. The people who want the

205. See *supra* note 194 and accompanying text.

206. The cost of litigation is a major factor to consider. The average cost of patent litigation in 2000 was \$1.2 million. Dee Gill, *Defending Your Rights: Protecting Intellectual Property Is Expensive*, WALL ST. J., Sept. 25, 2000, at 6.

newest gadgets on the market are willing to pay premium prices, whereas the people who wait do so because they know the cost will come down. The consumer expectation in the high-tech world of today is that when a new technology is released, the cost will rapidly decrease within the first few years of availability. The length of exclusivity in patent rights does not adequately mirror the expectations of society.

The patent system needs tweaking to serve better the interests across more industries that rely on it. Patents exist to promote progress, but ultimately the desire to promote progress is to benefit society. Thomas Jefferson held a pragmatic view of the patent system: “Society may give an exclusive right to the profits arising from [patents], as an encouragement to men to pursue ideas which may produce utility, but this may or may not be done, according to the will and convenience of society, without claim or complaint from anybody.”²⁰⁷

Although exclusionary rights and compulsory licenses in patents remain at odds, one can envision a system that encompasses the benefits of each outcome, maintains the goal to encourage innovation, and reduces the transaction costs of patent licensing and litigation. The geniuses that came before might have been giants or they might have been trolls, and to help inventors stand on their shoulders, this proposal provides a stepstool.

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207. Letter from Thomas Jefferson to Isaac McPherson, *supra* note 9, at 333-34.

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