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Janet Freilich

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Patent Shopping

Janet Freilich*

Over the past decade, scholars have identified many entities who use the patent system in ways that differ from the traditional model of patent use—entities such as patent assertion entities, patent aggregators, or owners of large patent portfolios. This Article presents a model that explains the behavior of some of the biggest and most controversial entities in the patent system. This Article argues that such entities are engaged in “patent shopping” where the plaintiff makes a strategic choice of patent in order to obtain the best facts and substance in a case and thereby maximize the chance of a favorable outcome. The patent shopping model draws by analogy on forum shopping, where plaintiffs make a strategic choice of forum in order to maximize the chance of a favorable outcome. The patent shopping model stands in contrast to the traditional model of patent use where a patentee owns a small number of patents closely related to a commercialized invention, which are drafted to encompass possible attempted work-arounds. Under the traditional model, patent acquisition comes first, infringement second. This Article proposes that, for patent shoppers, the chronology is flipped: infringement first, patent acquisition second. Instead of drafting patents to predict infringement, patent shoppers are able to react to infringement by selecting a patent that fits the infringing behavior. This is possible because most companies are constantly infringing on many different potential patents, infringement which has historically not been enforced. Patent shoppers have access to hundreds or thousands of patents, related to many different inventions, and can identify an instance of infringement that is a good target for enforcement and can then acquire the patent(s) of their choice. For instance, patent assertion entities may evaluate large numbers of patents that are available for sale and then select patents that can be most profitably enforced. Similarly, owners of large patent portfolios can shop in their own closet by selecting the best patents for enforcement from a wide array of options.

This Article presents the shopping model and then conducts a qualitative review of the financial statements of potential patent shoppers to provide empirical evidence that these entities pursue patent shopping as a business strategy. Patent shopping is a way to view some of the most important players in the patent system and adds a new analytic perspective to the broad literature on these entities. The concept of shopping for good claims is not unique to

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patent law; it also occurs in, for example, personal injury litigation and consumer debt suits. Thus, the framework proposed herein is broadly applicable to many areas of law.

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INTRODUCTION

“Forum shopping” refers to a method “of choosing the most favorable jurisdiction or court in which a claim might be heard.”¹ This Article introduces the concept of “patent shopping,” wherein plaintiffs make a strategic choice of patent, in light of knowledge about infringing behaviors, in order to obtain the best facts and substance in a case, and thereby maximize the chance of a favorable outcome.² The patent shopping model provides a description of the behavior of the largest and most consequential players in the patent system today, including patent assertion entities (PAEs) and companies with large patent portfolios.

Patent shopping is most easily explained by contrast to the traditional model of patent use. The traditional model begins with an invention, which then inspires a patent application.³ The patent application is forward looking; it is carefully drafted to cover both the inventor’s creation and any work-arounds that might be attempted by third parties.⁴ If third parties later engage in some infringing activity, the patent owner can enforce the patent in court.⁵ The chronology in the traditional view is patent acquisition first, infringement second. As a result, patent drafters must *predict* possible infringing behavior.⁶ This Article proposes that, for certain types of patent owners, the chronology is flipped: infringement first, patent acquisition second. The model developed by this Article explains how these patent owners are able to *react* to infringement by selecting a patent that fits the infringing behavior.

Patent shopping is a story of access and choice. The patentee in the traditional model (the innovator) might own one or two patents, all closely related to her invention.⁷ The innovator awaits infringement and will file suit only if an instance of infringement covered by their patent arises.⁸ Shoppers, by contrast, have access to hundreds or thousands of patents, related to many different inventions, and can acquire the patent(s) of their choice, either by purchasing a patent from another or by scouring a large patent portfolio that the shopper already owns.⁹ This gives shoppers an expansive array of opportunities. Shoppers can identify an instance of infringement that is a particularly “good” target for enforcement, perhaps because

1. BLACK’S LAW DICTIONARY 770 (10th ed. 2014). Similarly, legal scholars analyze whether a party to a boilerplate contract was “in a position to shop around” for a better option. *See, e.g.*, Mark R. Patterson, *Standardization of Standard-Form Contracts: Competition and Contract Implications*, 52 WM. & MARY L. REV. 327, 331 n.5 (2010).

2. *Infra* Section II.A.

3. *E.g.*, AMY L. LANDERS, UNDERSTANDING PATENT LAW § 1.01 (3d ed. 2018).

4. ROBERT C. FABER, FABER ON MECHANICS OF PATENT CLAIM DRAFTING § 10:1.1[B] (6th ed. 2008).

5. 35 U.S.C. § 271 (2012).

6. *Infra* Part I.

7. Mark D. Janis & Timothy R. Holbrook, *Patent Abolitionism*, 17 BERKELEY TECH. L.J. 899, 908 (2002).

8. *Infra* Section II.A.

9. *E.g.*, Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PENN. L. REV. 1, 7 (2005).

it is widespread or because the infringers are deep-pocketed.¹⁰ Shoppers can then obtain a patent that scores high in the relevant metrics, including the likelihood of surviving a validity challenge or the breadth of behavior covered by the patent.¹¹

The shopping model has both descriptive and prescriptive consequences. The ability to select patents for enforcement transforms patents from passive snares that capture only infringers that stumble upon them into tools of active attack that can be used to pursue desirable targets.¹² Further, shopping divorces patent enforcement from the inventive process, a link that is implicit in the traditional model.¹³ Moreover, the ability to select gives shoppers a substantial advantage over innovators in the context of pursuing infringers.¹⁴ This advantage has important consequences for policy reform. Many proposals for policy reform seek to attack litigants by weakening patents or reducing enforcement opportunities.¹⁵ Shopping theory explains that these proposals will have limited effectiveness because shoppers can “shop around” the policies by finding patents and enforcement opportunities that remain viable.¹⁶ In troubling contrast, parties that are unable to shop, such as small inventors, *will* be harmed by these policies. This Article argues that in order to create policy that affects shoppers, the policy must target the shopping process itself, or its predicates, rather than patents more generally.¹⁷

This Article proposes the patent shopping model and also provides empirical substantiation for the model.¹⁸ As many shoppers are PAEs, this Article conducts a qualitative analysis of the financial statements of all public PAEs and finds copious evidence that PAEs are engaged in patent shopping.¹⁹ The empirical evidence supports an analytic analysis of the effects of patent shopping which argues both that patent shoppers have a pervasive advantage over small innovators when it comes to patent enforcement, and also that patent shoppers and small innovators interact in systematically different ways with many features of the patent system.

Successful patent shoppers can achieve staggering results. For example, notorious PAE Erich Spangenberg²⁰ realized that most of the world’s largest car companies had for many years been using sales software that infringed on a patent owned by a small company—unbeknownst to both the car companies and the

10. *E.g.*, Lauren Cohen, Umit G. Gurun & Scott Duke Kominers, *Patent Trolls: Evidence from Targeted Firms* 5 (Harvard Bus. Sch., Working Paper No. 15-002, 2018).

11. *Infra* Section II.A.

12. *Infra* Section III.B.

13. *Infra* Section III.C.

14. *Infra* Section III.A.

15. *Infra* Section III.G.

16. *Infra* Section III.G.

17. *Infra* Section III.G.3.c.

18. *Infra* Section II.B.3.

19. *Infra* Section II.B.3.

20. David Segal, *Has Patent, Will Sue: An Alert to Corporate America*, N.Y. TIMES, July 13, 2013 (“His clients . . . praise him as a hero . . . Mr. Spangenberg’s opponents use less flattering terms to describe his work. Like shakedown artist. Or patent troll.”).

patent owner.²¹ Taking advantage of this information asymmetry, Spangenberg acquired the patent for approximately \$70,000²² and immediately filed suit against twenty-one car companies.²³ Twenty companies settled the lawsuit for undisclosed sums, and the remaining defendant, Hyundai, lost the case and was found liable for \$34 million in damages.²⁴ Companies with large patent portfolios can also shop for patents within their own portfolios to strategically attack competitors or earn monetary returns. In a patent dispute between IBM and Sun Microsystems, Sun denied infringing seven patents asserted by IBM, to which IBM famously replied that “we have 10,000 U.S. patents [and can] . . . find seven patents you do infringe . . . [unless] you want to make this easy and just pay us \$20 million.”²⁵ Given access to enough patents, shoppers can practically ensure victory in enforcement battles.

The shopping model relies on a number of underlying features of the patent system, notably that patent infringement is extremely widespread and rarely enforced.²⁶ Shoppers capitalize on this landscape by surveying a broad array of infringement and choosing the leading opportunity.²⁷ In substance, shopping resembles long recognized features of criminal law: the combination of overbreadth and prosecutorial discretion results in selective enforcement and discrimination against certain groups.²⁸ Tort law is characterized by a similar pattern, rates of claiming are low, and tortfeasors who end up in court are generally those with “deep pockets.”²⁹

Part I lays out the traditional theory of patent use, followed by a discussion of the predicate conditions required for patent shopping. Part II then lays out the theory of patent shopping and provides qualitative evidence from review of the SEC statements of all public PAEs to demonstrate that many PAEs pursue a patent shopping strategy. Part II further extends the model to show how patent shopping also describes the behavior of other types of patentees, such as defensive aggregators and owners of large patent portfolios. Part III analyzes patent shopping. It begins with an explanation of why shoppers have a substantial advantage in patent enforcement proceedings. It then explores how shoppers and innovators interact differently with various aspects of the patent system and have dissimilar effects on the patent system. It concludes with a discussion of policy.

21. Defendant Hyundai Motor America’s Motion for Remittitur at 7, *Orion IP, LLC v. Mercedes-Benz USA, LLC*, 516 F. Supp. 2d 720 (E.D. Tex. 2007) (No. 15-CV-322).

22. *Id.*

23. *Orion IP, LLC v. Hyundai Motor America*, 605 F.3d 967, 971 (Fed. Cir. 2010).

24. *Id.*

25. Gary Reback, *Patently Absurd*, FORBES (June 24, 2002), <https://www.forbes.com/asap/2002/0624/044.html> [<https://perma.cc/D3B6-UE8N>].

26. *Infra* Section I.C.

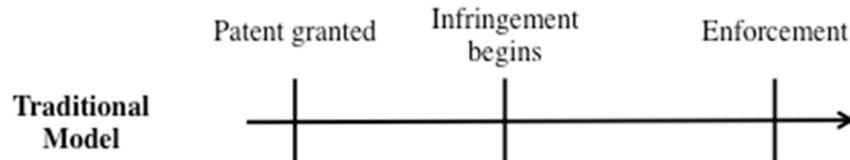
27. *Infra* Section I.C.

28. See, e.g., Richard Frase, *The Decision to File Federal Criminal Charges: A Quantitative Study of Prosecutorial Discretion*, 47 U. CHI. L. REV. 246, 246 (1980).

29. See Richard Abel, *The Real Tort Crisis—Too Few Claims*, 48 OHIO ST. L.J. 443, 447 (1987) (describing a “crisis of underclaiming”).

I. THE TRADITIONAL MODEL OF PATENT USE

This Article proposes the shopping model of patent use, which is contrasted with the traditional, or *ex ante*, model of patent use. The traditional model can be summarized as a series of chronological steps: (1) the inventor obtains a patent on the invention; (2) third parties infringe on the patent; and (3) the inventor enforces the patent.³⁰ Patents, in the traditional model, are obtained towards the beginning of the innovation process and are forward-looking.



The protagonist of the traditional model is the inventor.³¹ The model begins with her toiling in her garage, developing a brilliant new invention.³² After making the invention, she hurries to employ a patent attorney who writes a patent to protect her invention. Patents can generally cover somewhat more than precisely what the inventor has made,³³ so the patent attorney works to draft a patent that will give the inventor the broadest scope of protection possible.³⁴ Generally, the drafting attorney will consider what paths competitors might take to work around the patent,

30. See, e.g., Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 75 (2005) (“For many years, economists typically conceptualized patents as well-defined property rights Once a patent was issued . . . users of the patented technology respected that right or were forced by courts to do so.”). The prevalence of the traditional model of patent law can be seen in the organization of patent textbooks. For example, Patent Law in a Nutshell begins with several chapters on how patents are filed and granted by the PTO, followed by a chapter on infringement, followed by a chapter on remedies. MARTIN J. ADELMAN, RANDALL R. RADER & GORDON P. KLANCNIK, PATENT LAW IN A NUTSHELL, at V–XV (2008); see also JANICE M. MUELLER, PATENT LAW, at ix (5th ed. 2013) (beginning with chapters on issues of patent prosecution, followed by a chapter on patent infringement and then a chapter on remedies for patent infringement).

31. See Christopher A. Cotropia, *The Individual Inventor Motif in the Age of the Patent Troll*, 12 YALE J.L. & TECH. 52, 54–55 (2009).

32. *Id.* at 54.

33. See, e.g., *In re Hogan*, 559 F.2d 595, 606 (C.C.P.A. 1977) (“To restrict [the patentee] to the . . . form disclosed . . . would be a poor way to stimulate invention, and particularly to encourage its early disclosure.”); see also Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839, 848 (1990).

34. See, e.g., CARL W. BATTLE, THE POCKET LEGAL COMPANION TO PATENTS 148 (2013) (“The broadest claim should describe a generalized version of the invention.”); U.S. INTELLECTUAL PROPERTY LAW AND POLICY 161 (Hugh Hansen ed., 2006) (“As those schooled in the patent law will recognize, U.S. claims drafters typically craft a . . . patent [that] is very broad and abstract.”); INTELLECTUAL PROPERTY IN ACADEMIA: A PRACTICAL GUIDE FOR SCIENTISTS AND ENGINEERS 133–34 (Nadya Reingand ed., 2012); see also *Brenner v. Manson*, 383 U.S. 519, 534 (1966) (noting “the highly developed art of drafting patent claims so that they disclose as little useful information as possible—while broadening the scope of the claim as widely as possible”).

or how later iterations of the technology might develop, in order to draft a patent that covers these spaces.³⁵ In short, drafting a patent is an exercise in prediction.

Once a patent is granted, it can be enforced. If a third party infringes on the inventor's patent by making, using, or selling her invention,³⁶ she may sue the third party³⁷ and obtain, depending on the circumstances, an injunction or damages.³⁸ The traditional model of patent use also allows for acquisition of patents. In the traditional model, a company would purchase a patent if the business is operating in a particular area and wants to develop products covered by the patent.³⁹ Thus, the patent is purchased for purposes of commercialization, not enforcement. Enforcement of the patent occurs only if an infringer happens to venture into the area covered by the patent. Thus, the chronological order of patent acquisition and infringement remain the same: acquisition first, followed by infringement.

The traditional model of patent use closely links patent enforcement to innovation. Patents are described as intended to protect innovators by providing a defense against a competitor stealing an innovative product or process; importantly, patents are not often described as an asset that can be monetized by the innovator.⁴⁰

The traditional model permeates patent theory. Its characteristics, particularly the forward-looking, predictive nature of the model, are most easily seen in the classic (and aptly named) "prospect theory."⁴¹ Prospect theory argues that broad patents are socially beneficial because they enable the patent holder to control the future development of the technological area.⁴² Prospect theory relies on the assumption that patentees obtain patents in order to cover downstream innovation they believe will occur, and so that they can control this downstream innovation.⁴³

35. See, e.g., RONALD D. SLUSKY, INVENTION ANALYSIS AND CLAIMING: A PATENT LAWYER'S GUIDE 29–31 (2007); ASH TANKHA, PATENT YOUR IDEA 50 (2012).

36. 35 U.S.C. § 271(a) (2012).

37. 35 U.S.C. § 281 (2012).

38. 35 U.S.C. §§ 283–284 (2012).

39. E.g., Kuen-Hung Tsai & Jiann-Chyuan Wang, *External Technology Acquisition and Firm Performance: A Longitudinal Study*, 23 J. BUS. VENTURING 91, 94 (2008).

40. E.g., ADAM B. JAFFE & JOSH LERNER, INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT 18 (2007).

41. Edmund W. Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265, 266 (1977). The "reward function" cited by Kitch as a contrast to prospect theory is an older descriptive theory of patent law which posits that patents are both *ex ante* incentives to innovate and rewards for disclosing the fruits of the innovation to the public. See John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 439 (2004). There is a natural law element to reward theory rationalizing that the inventor has a "right to receive a reward for providing an invention to society, and that reward should be in the form of a monopoly and commensurate with the usefulness to society of the proffered invention." A. Samuel Oddi, *Un-Unified Economic Theories of Patents—The Not-Quite-Holy Grail*, 71 NOTRE DAME L. REV. 267, 274 (1996). There is also an "economic premise that the 'just' monopoly reward provided is (or should be) proportional to the benefit received by society." *Id.*

42. Oddi, *supra* note 41, at 282.

43. *Id.*

A. Obstacles to Enforcement

While patentees operating under the traditional model can and do enforce their patents, there are a number of obstacles built into this model. First, because the patentee both patents and produces products in a particular industry, infringers will often be competitors of the patentee.⁴⁴ Under these conditions, it is often the case that the infringer and the patentee each infringe each other's patents, creating an equilibrium that deters patent enforcement—since enforcement will often be met with a countersuit for one's own infringement.⁴⁵ Additionally, when the patentee both innovates and produces products in the same industry, there is a reputational component to enforcement.⁴⁶ Patentees who enforce more than is the norm in their industry might get a reputation as difficult and uncooperative.⁴⁷

If a patentee does choose to enforce a patent, there are certain challenges inherent in the process. In particular, because patent drafting is an exercise in prediction, the patent-in-suit will not always be a perfect candidate for enforcement, creating challenges for the patent holder (generally the plaintiff⁴⁸) during litigation.⁴⁹ A key component to the traditional model of patent use is that, when challenges to litigating against a certain target arise, the plaintiff must turn to her patent and make the best arguments she can in light of constraints posed by the patent as it was drafted many years before.⁵⁰ Patents drafted *ex ante* are often not perfect fits for infringement occurring *ex post*. Similarly, there is no guarantee that a granted patent will in fact be valid.⁵¹ It is common in litigation for the defendant to challenge a patent's validity, and common for this argument to succeed.⁵² A plaintiff may be the position of needing to bring suit but only having a patent of dubious validity with which to do so. In this circumstance, to bring suit is to risk losing the patent.⁵³

It is a risk, however, that plaintiffs in the traditional model of patent use must take. Given that the patent is already written, the plaintiff must make his best arguments for the patent's validity but cannot avoid the issue. Ultimately, the arguments available to the plaintiff, and even the ability to bring suit, are inevitable consequences of the patent as written before litigation began. The unavoidable

44. See Mark A. Lemley, *Distinguishing Lost Profits from Reasonable Royalties*, 51 WM. & MARY L. REV. 655, 657 (2009).

45. Cotropia, *supra* note 31, at 61–62.

46. Jacob H. Rooksby, *When Tigers Bare Teeth: A Qualitative Study of University Patent Enforcement*, 46 AKRON L. REV. 169, 172 (2013).

47. See *id.*

48. The patent holder will be the plaintiff in most cases, but infringers can sue for declaratory judgment, in which case the patent holder is the defendant. *E.g.*, *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 121 (2007).

49. *E.g.*, John R. Allison, Mark A. Lemley & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1769, 1782 (2015).

50. *Id.*

51. See *id.*

52. Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 85 (2005).

53. *Id.* at 76.

limits on future enforcement created by the words of the patent as written are the quintessence of the traditional view of patent use.

B. *The Traditional Model Breaks Down*

For the past decade, scholars have noted an increasing movement away from the traditional model.⁵⁴ PAEs are entities that do not develop or commercialize technology themselves, but instead make money by asserting patents in various, possibly socially detrimental, ways.⁵⁵ PAEs break the link between innovation and patenting that is inherent in the traditional model, because instead of patenting their own invention, they acquire patents from a variety of sources, including directly from the inventor, from a practicing entity that is not using a patent, or through bankruptcy proceedings.⁵⁶ Scholars have suggested that PAEs strategically acquire patents but have had limited direct evidence of this.⁵⁷

Scholars know that breaking this innovation-patenting link degrades the obstacles to enforcement present in the traditional model.⁵⁸ Because PAEs do not produce products, they do not need to worry about countersuits from competitors.⁵⁹ In addition, the absence of PAEs' physical footprints in an industry makes it easier for competitors to accidentally infringe PAE patents. It is difficult

54. The literature can be traced back over a decade. *See generally* James Bessen, Jennifer Ford & Michael J. Meurer, *The Private and Social Costs of Patent Trolls*, 34 REG., no. 4, 2012, at 26; Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571 (2009); Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117 (2013); Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 NOTRE DAME L. REV. 1809 (2007); Robert P. Merges, *The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law Reform*, 24 BERKELEY TECH. L.J. 1583 (2009); Marc Morgan, *Stop Looking Under the Bridge for Imaginary Creatures: A Comment Examining Who Really Deserves the Title Patent Troll*, 17 FED. CIR. B.J. 165 (2007); Kristen Osenga, *Formerly Manufacturing Entities: Piercing the "Patent Troll" Rhetoric*, 47 CONN. L. REV. 435 (2014); Tim Pohlmann & Marieke Opitz, *Typology of the Patent Troll Business*, 43 R&D MGMT. 104 (2013). The phenomenon is much older. *See* Christopher Beauchamp, *The First Patent Litigation Explosion*, 125 YALE L.J. 848, 851 (2016).

55. *See* Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP., MEDIA & ENT. L.J. 611, 613 (2008).

56. Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 459 (2012); Pohlmann & Opitz, *supra* note 54.

57. *See, e.g.*, Fiona M. Scott Morton & Carl Shapiro, *Strategic Patent Acquisition*, 79 ANTITRUST L.J. 463, 470 (2014) ("PAEs seek to keep abreast of industry knowledge and trends so that they can locate valuable patents and purchase them inexpensively. Indeed, having good information about potential licensees and past licensing deals or settlement terms is critical to the PAE business model . . ."); *see also* Ted Sichelman, *Are Patent Trolls "Opportunistic"?*, (San Diego Legal Studies, Paper No. 14-175, 2014), <http://ssrn.com/abstract=2520125> [<https://perma.cc/7AH6-8QQV>].

58. *See, e.g.*, Deborah Platt Majoras, *A Government Perspective on IP and Antitrust Law*, 38 RUTGERS L.J. 493, 498 (2007); Sannu K. Shrestha, *Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities*, 10 COLUM. L. REV. 114, 122-23 (2010).

59. Majoras, *supra* note 58.

to find patents through keyword searches;⁶⁰ thus, companies planning to commercialize a technology might attempt to avoid patent risks in part by reviewing the patent portfolios of known competitors.⁶¹ PAEs can obscure ownership of patents by creating shell companies, which makes it harder for potential infringers to find the patent and avoid infringement.⁶²

Third, PAEs have different motivations for patent litigation. PAEs litigate to monetize, that is, they bring patent infringement lawsuits in order to make money.⁶³ Practicing entities, by contrast, have more complicated motivations for patent litigation. While some practicing entities may also litigate to monetize their patent portfolio (and this may be an increasingly common practice),⁶⁴ others litigate to protect their own business and products. For example, a manufacturer of a brand name pharmaceutical product will sue a generic competitor, because if the generic enters the market, the brand name company will lose up to 80% of its market share.⁶⁵

PAEs have attracted a significant amount of policy attention, much of it negative.⁶⁶ Policy makers are concerned about PAEs because they engage in holdup behavior by waiting until a product has been developed and put on the market before suing the product's maker for patent infringement.⁶⁷ In the words of President Obama, PAEs "don't actually produce anything themselves. They're just trying to essentially leverage and hijack somebody else's idea and see if they can extort some money out of them."⁶⁸

60. Janet Freilich, *Are There Too Many Patents to Search*, NEW PRIV. L. BLOG (July 2, 2015), <http://blogs.law.harvard.edu/nplblog/2015/07/02/are-there-too-many-patents-to-search-a-response-janet-freilich/> [https://perma.cc/AQ8N-3T9H].

61. *Id.*

62. Jason M. Schultz & Brian J. Love, *Brief of Amici Curiae Law, Business, and Economics Scholars in Support of Respondents in Alice Corp. Pty. Ltd., v. CLS Bank International, et. al.*, 4 N.Y.U. J. INTELL. PROP. & ENT. L., no. 2, 2015, at 372.

63. Colleen V. Chien, *From Arms Race to Marketplace: The New Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 322 (2010).

64. *Id.*

65. Ernst R. Berndt & Murray L. Aitken, *Brand Loyalty, Generic Entry and Price Competition in Pharmaceuticals in the Quarter Century After the 1984 Waxman-Hatch Legislation* 6 (NBER Working Paper Series, Paper No. 16431, 2014), <http://www.nber.org/papers/w16431> [https://perma.cc/P9XH-L2SJ].

66. But not all. There is a well-developed literature on the benefits of PAEs, primarily their function in creating a market for patents, which allows small innovators to monetize their patents. *See, e.g.*, Christopher A. Cotropia, Jay P. Kesan & David L. Schwartz, *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649, 653 (2014); Pohlmann & Opitz, *supra* note 56, at 103; Risch, *supra* note 56, at 459; Shrestha, *supra* note 58, 115–16. In addition, PAEs serve as a form of contingency-fee lawyer by financing patent infringement lawsuits. If a patent owner is "unable or uninterested in filing a lawsuit to recover money," he can "instead sell and assign the patents and related causes of action to" another entity, often a PAE. David L. Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335, 338–39 (2012).

67. J.P. Mello, *Technology Licensing and Patent Trolls*, 12 B.U. J. SCI. & TECH. L. 388, 391 (2006).

68. Gene Sperling, *Taking on Patent Trolls to Protect American Innovation*, WHITE HOUSE BLOG (June 4, 2013), <https://obamawhitehouse.archives.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation> [https://perma.cc/7ACT-YBNC].

C. A Market for Patents

The traditional, *ex ante*, theory of patent use does not fully describe the behavior of certain classes of plaintiffs—for instance, PAEs—who acquire and enforce, rather than produce, patents. In order to have this acquisition and enforcement, there must be infringed patents available for sale. This Section explains that the patent system is characterized by widespread infringement, much of which is either inadvertent or unavoidable, but infringement actions are pursued relatively rarely, in part because it is difficult for individuals and small companies to obtain financing for litigation. The discussion below explores a variety of unintuitive features of the patent system that underlie why infringement is widespread and underenforced, and why infringement claims are often for sale.

Almost everyone regularly infringes a patent, which provides a wide range of potential actions and defendants that may be brought to court. Have you, the reader, picked up a stick from the ground and thrown it for a dog, used it as a walking stick, or fenced with a friend? You were infringing a patent.⁶⁹ Have you used a swing hanging from a tree? You were infringing a patent.⁷⁰ Do you use Wi-Fi? You were infringing a patent.⁷¹ Do you have a smartphone? You might be infringing hundreds of thousands of patents.⁷²

The causes of widespread infringement are varied. In part, it is due to the future-looking nature of patents. Perhaps an early innovator developed, and patented, an essential component of Wi-Fi technology. As the technology developed, it became ubiquitous, and, consequently, practically everyone might infringe the patent. Other causes of widespread infringement are poor quality patents and high levels of patenting, resulting in large numbers of patents on basic technologies.⁷³ Further, it is difficult to figure out what technologies or actions are

69. U.S. Patent No. 6,360,693 (filed Dec. 2, 1999) (issued Mar. 26, 2002) covers branched sticks. Fortunately, this patent was abandoned for failure to pay maintenance fees, and so is not in force. Gene Quinn, *Patent on a Stick: Learning from the Animal Toy Patent*, IP WATCHDOG (Oct. 6, 2010), <http://www.ipwatchdog.com/2010/10/06/animal-toy-patent/id=12711/> [https://perma.cc/4EPC-TSYU]. In addition, this patent was certainly granted erroneously and was not valid, even when it was in force. *Id.*

70. U.S. Patent No. 6,368,227 (filed Nov. 17, 2000) (issued Apr. 9, 2002).

71. The owner of several patents on wireless technologies has started suing end-users of the technology such as bakeries and cafes that offer Wi-Fi. Gaia Bernstein, *The Rise of the End User in Patent Litigation*, 55 B.C. L. REV. 1443, 1456 (2014).

72. Colleen Chien, *Predicting Patent Litigation*, 90 TEX. L. REV. 283, 289 (2011) (“250,000 patents cover smartphone technology.”).

73. The number of patents is growing rapidly. Applications rose from 104,329 in 1980 to 356,943 in 2004. JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK 68–69 (2008). There are many causes of poor-quality patents. Much of the criticism focuses on the small amount of time allocated to examining each patent and problematic incentives at the Patent Office. Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1495, 1495 (2001); see also Michael D. Frakes & Melissa Wasserman, *Does Agency Funding Affect Decisionmaking?: An Empirical Assessment of the PTO's Granting Patterns*, 67 VAND. L. REV. 66, 80 (2013); Michael Frakes & Melissa Wasserman, *The Failed Promise of User*

covered by patents, and, even if potentially relevant patents can be identified, it is difficult to ascertain precisely what the boundaries of these patents are in order to avoid infringing.⁷⁴

Widespread infringement occurs not only because many patents cover many different technologies but also because many patents overlap to cover particular intellectual areas.⁷⁵ It is common for several different parties to file overlapping patents covering one technology from different angles (called a “patent thicket”).⁷⁶ It is also common for companies to seek multiple overlapping patents to protect a product from all angles.⁷⁷ The result of overlapping patents is that one activity frequently infringes on many patents, often owned by many different patent-holders.

Although infringement is widespread, patents are consistently underenforced. There are many reasons for underenforcement.⁷⁸ Companies in the business of

Fees: Empirical Evidence from the U.S. Patent and Trademark Office, 11 J. EMPIRICAL LEGAL STUD. 602, 603 (2014).

74. Patentees can choose their own words (even if these are non-standard) to describe their inventions, so keyword searches may not be effective to find patents. *See* Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996); *see also* Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 317 (2012). *But see* Ted Sichelman, *Are There Too Many Patents to Search? – A Response*, HARV. BLOGS: NEW PRIV. L. (July 3, 2015), <https://blogs.law.harvard.edu/nplblog/2015/07/02/are-there-too-many-patents-to-search-a-response-ted-sichelman/> [https://perma.cc/C6G7-DM8X] (arguing that it is feasible to conduct patent clearance searches). In addition, the boundaries of individual patents are fuzzy, in part because it is difficult to define inventions with absolute clarity and in part because it can be to the patentee’s advantage to inject some ambiguity into the patent. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2129 (2014) (“absent a meaningful definiteness check, we are told, patent applicants face powerful incentives to inject ambiguity into their claims”). This makes it challenging for third parties to know whether they are infringing.

75. *E.g.*, John F. Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 442–43 (2004) (calling “overlapping exclusive rights” a “basic feature of patent law”); *see also* Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 SCIENCE 698, 698 (1998) (describing “a spiral of overlapping patent claims in the hands of different owners, reaching ever further upstream in the course of biomedical research”); Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL’Y 309, 324 (2002) (“[N]umerous and overlapping patents make it costly for a possible infringer to negotiate a license . . .”).

76. Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in INNOVATION POLICY AND THE ECONOMY 119 (Adam B. Jaffe, Josh Lerner & Scott Stern, eds., 2001) (“In several key industries . . . our patent system is creating a *patent thicket*: an overlapping set of patent rights requiring that those seeking to commercialize new technology obtain licenses from multiple patentees.”).

77. For example, pharmaceutical companies developing a new drug often patent first the molecule used in the drug, then separately patent use of the molecule to treat the relevant disease, formulating the molecule in a particular way, specific doses of the molecule, and other variations on this theme. Katherine Gaudry, *Evergreening: A Common Practice to Protect New Drugs* 3 (2011), <http://nrs.harvard.edu/urn-3:HUL.InstRepos:8965556> [https://perma.cc/5BNP-UMH8]; *see also* Robin Feldman, *Rethinking Rights in Biospace*, 79 S. CAL. L. REV. 1, 30 (2005); C. Scott Hemphill & Bhaven N. Sampat, *Evergreening, Patent Challenges, and Effective Market Life in Pharmaceuticals*, 31 J. HEALTH ECON. 327, 327–28 (2012).

78. Clark D. Asay, *Patent Pacifism*, 85 GEO. WASH. L. REV. 645, 660 (2017).

commercializing a product may not have the interest or expertise to pursue infringers who are not direct competitors. These same companies may fear the reputational costs of enforcement, or they may fear countersuit if they too are infringing patents. Small companies may have insufficient financing for enforcement actions. Patent infringement suits are expensive (a median of \$4 million in litigation fees for lawsuits with more than \$25 million at issue)⁷⁹ due to many factors such as long pendency, complexity, and the need to hire expensive expert witnesses.⁸⁰ Thus, while tort lawsuits are often financed on a contingency fee basis, patent infringement (also a tort) has historically not been a candidate for contingent fee financing.⁸¹ Widespread infringement and consistent underenforcement are so common that in practice, companies in some industries simply “ignore patents,” making no effort to evade infringement.⁸²

Widespread infringement and underenforcement are essential components in the market for patents and patent claims because they create a pool of potentially lucrative enforcement opportunities that are not presently being exploited. Those opportunities may have value to buyers. Further, the inability of innovators to enforce their patents incentivizes innovators to sell patents to other parties who may have the resources and desire to enforce previously ignored claims.

A third important component to the patent market is the ability to freely buy and sell patents. Both patents and claims for past infringement of a patent are fully assignable.⁸³ To illustrate, Company *A* has been infringing on Company *B*'s patent for three years, and Company *B* has not enforced the patent, either out of ignorance of the infringement or inability to enforce against known infringement. Company *B* can now sell the patent to a third party, who can sue Company *A* for the past three years of infringing behavior, even though the third party did not own the patent when the infringement occurred.⁸⁴ Alienability of claims allows innovators to

79. AM. INTELLECTUAL PROP. LAW ASSOC., REPORT OF THE ECONOMIC SURVEY 22 (2003).

80. Schwartz, *supra* note 66, at 348.

81. *Id.* at 338.

82. Mark A. Lemley, *Ignoring Patents*, 2008 MICH. ST. L. REV. 19, 21–22 (2008) (“[B]oth researchers and companies in component industries simply ignore patents. Virtually everyone does it Nor do they conduct a search before launching their own product. Rather, they wait and see if any patent owner claims that the new product infringes their patent.”).

83. Schwartz, *supra* note 66, at 350 (“In patent law, the owner of a patent may sell and assign the patent and the right to obtain past damages. The purchaser of these rights may then assert the patent in litigation. The rule in most other tort contexts is the opposite.”); *see also* Mentor H/S, Inc. v. Med. Devices All., Inc., 240 F.3d 1016, 1017 (Fed. Cir. 2001).

84. This sort of assignment of causes of action was historically disfavored by common law, though over the years the prohibition has narrowed. *See* Anthony Sebok, *The Inauthentic Claim*, 64 VAND. L. REV. 61, 72 (2011).

monetize their patents through sale⁸⁵ and provides a legal mechanism for third parties to purchase and enforce patents.⁸⁶

In sum, companies infringe frequently, patent owners rarely enforce, and patent claims are freely alienable. These conditions foster a market in patents where shoppers can buy un- or underenforced patent claims.

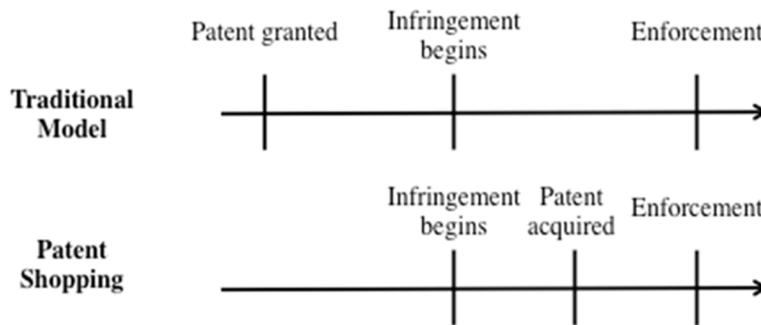
* * *

The traditional model of patent use involves an innovator inventing, patenting, and finally enforcing. However, scholars are aware of at least one type of player—the PAE—that has broken out of the traditional model. This break from the traditional model is enabled by widespread conditions of the patent system. This Article argues that PAE behavior is a subset of a more universal phenomenon: patent shopping. In the following Section, I describe and characterize patent shopping as an overarching model that applies not to specific PAEs but to their actions more broadly and that is generalizable beyond PAEs.

II. PATENT SHOPPING

A. The Model

As explored above, the traditional, *ex ante*, model of patent use comprises three chronological steps: (1) the inventor obtains a patent on the invention; (2) third parties infringe on the patent; and (3) the inventor enforces the patent. By contrast, the shopping, *ex post*, model of patent use reverses the first two steps: (1) third parties infringe on a patent; (2) a (soon-to-be) plaintiff acquires a patent; and (3) the plaintiff enforces the patent.



The inventor in the traditional model must *predict* what infringement will look like when she is drafting her patent. Crucially, she is then limited by the patent as it

85. See, e.g., Alex Kozinski, *A Market-Oriented Revision of the Patent System*, 21 UCLA L. REV. 1042, 1051 (1974) (“A secure, fully alienable patent will provide an attractive alternative to investors and thus give a new invention an equal chance to compete for capital with existing products.”).

86. See Lee Anne Fennell, *Adjusting Alienability*, 122 HARV. L. REV. 1403, 1413–15 (2009) (stating, in the context of non-practicing entities, that “[t]he ability to use things that one owns to ‘extract money’ is of course the essence of alienability”).

was drafted. By contrast, the plaintiff in the shopping model acquires a patent in response to a known act of infringement and can *react* to infringement by selecting a patent that fits the infringing act. He is not bound by the scope and validity of any one patent because, if one patent does not fit the infringing act well, he can select another.

Shopping can only occur under certain conditions, which are common but are not available to all plaintiffs. First, a large pool of patents, covering many common activities, must exist. Second, many third parties must frequently infringe patents in this pool. Third, the plaintiff must be able to access this pool, either because he has the resources to acquire patents from this pool, or because he already owns the pool as his patent portfolio.

For shoppers, the process of getting a patent granted, or the content of any one patent, is not particularly relevant. Instead, these plaintiffs begin by identifying a litigation target. The litigation target may be a deep-pocketed defendant, a particularly bitter competitor, or a widespread activity that infringes on a heavily patented area. Once the litigation target is identified, the plaintiff *selects*, either through acquisition or from a group of patents already in its possession, a patent that is “good” for litigation. This may mean a patent that covers commercially important activity and may, therefore, be used to obtain significant damages. It may mean a patent that, after due diligence, is deemed likely to be valid. It may mean a patent that covers a broad range of common activity, making it easier to prove infringement. It may mean some combination of the above. The plaintiff then asserts this patent either through licensing demands or in litigation.

Note that the shopping model can apply either to individual patents or to patent portfolios. A patent shopper might choose to acquire a particular patent because it possesses desirable characteristics, or might choose to acquire a portfolio because the portfolio has particular features of interest. For example, a portfolio might be acquired because, in the aggregate, it covers a highly infringed space. This Article uses individual patents for most of the analysis below, but the analysis applies similarly if “portfolio” is substituted for “patent.”

Additionally, the shopping model can apply to purchases of weak patents. While some types of patentees seek strong patents that can survive a court challenge, there is a subset of patentees who survive by filing nuisance suits or sending out widespread demand letters premised on infringement of patents unlikely to be actually infringed or valid. These two types of patentees would shop along different criteria. The former might look for a high-quality patent that is likely to be valid. The latter often makes money through *quantity*, by sending out thousands of demand letters or filing large numbers of suits and hoping that at least a portion of the targets will settle for a small sum of money irrespective of the merits of the suit.⁸⁷ Thus, these patentees might try to select a patent that covered more widespread behavior. Even if the patent is invalid, proving that the patent is invalid

87. Bernstein, *supra* note 71, at 1451.

is expensive,⁸⁸ thus, many may settle. These patentees might also deliberately shop for vague and ambiguous patents. Such patents would allow them to target a large number of potential defendants who might find it cheaper to settle than to get counsel's opinion about the precise meaning of the vague patent language. Alternatively, these shoppers might seek volume at a low price, such as a large portfolio being sold relatively inexpensively.

Patent shopping has not previously been explored in the patent literature, but the contents of the model will not be unfamiliar to legal scholars. It has many analogs in other areas of law. In a sense, shopping is roughly analogous to a contingency fee lawyer conducting due diligence on a potential client before determining whether or not to bring the case. The lawyer can review the client's claims and use her substantive legal knowledge to assess both the likelihood of winning and the potential size of the damage award. A lawyer starting out may have only one or two potential clients and, therefore, will take any case that has a chance, even if the returns are likely to be small. A well-known lawyer with many clients seeking his services will be able to select the cases he believes are winnable and will bring large returns. Shopping similarly has analogs in both criminal and tort law. Many scholars have written about how criminal law's combination of overbreadth and prosecutorial discretion results in selective enforcement and discrimination against certain groups.⁸⁹ Tort law is characterized by a similar pattern, rates of claiming are low, and tortfeasors who end up in court are generally those with "deep pockets."⁹⁰

Patent shopping is a model, and, as such, it makes a variety of simplifying assumptions about the world. While patent shopping does occur, it is not as straightforward or predictable as depicted by some of the hypotheticals in this Article. In particular, it is not easy to determine the universe of patents available for sale, evaluate those patents, and negotiate for acquisition of patents at a reasonable price. It is further challenging to evaluate patents and determine whether they are likely to be infringed and valid. Moreover, instances of infringement are often invisible without discovery. Patent shoppers have experience and expertise in evaluating patents and patent monetization opportunities.

B. *Qualitative Study of Patent Shopping*

Having set out the basic model of patent shopping, this Section explores qualitative evidence of patent acquisition and enforcement patterns and strategies. This is a qualitative study both because it is difficult to obtain quantitative data on patent shopping⁹¹ and because qualitative research is often better suited to

88. Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101, 116–17 (2006).

89. Frase, *supra* note 28, at 246–47.

90. Abel, *supra* note 29, at 447.

91. In part because patent transfers between parties ("assignment") need not be recorded in the USPTO's assignment database. Alan C. Marco et al., *The USPTO Patent Assignment*

observation of strategy. Though patent shopping is a novel way to describe the behavior of players in the patent system, entities who perform some of the steps involved in patent shopping, namely patent acquisition and monetization, are well known in the literature: PAEs. In order to obtain evidence of patent shopping, data were gathered from a review of all 2015 SEC filings for public patent assertion entities.⁹² Below, this Section begins with an overview of PAEs and previous research on patent acquisition strategies, proceeds to a discussion of the study's design and methodology, and then summarizes the results.

1. Patent Assertion Entities

The PAE world is complex. PAE is a broad (overly broad) category that covers many different types of entities.⁹³ PAEs are often divided according to the nature of their business. Mark Lemley and Nathan Myhrvold have developed a taxonomy of patent plaintiffs, which divides PAEs into categories such as “failed product company,” “individual inventor,” “IP subsidiary of a product company,” “acquired patent,” and others.⁹⁴ This Article is focused on the subset of PAEs who acquire and enforce patents: the patent shoppers.

PAEs can be divided into (at least) two categories according to their acquisition and litigation strategies. First, there are “big game hunter” PAEs,⁹⁵ those who seek to “strike it big in court. These entities believe that they have a patent that reads on a significant area of technology, and it is very important to them that their patent be held valid and infringed.”⁹⁶ A second type of PAE is the “bottom-feeder,” who files large numbers of suits with no expectation of going to trial, and hopes to elicit relatively small settlements with high frequency.⁹⁷ Both types of PAEs can engage in patent shopping behavior.

2. Study Design and Methodology

Because PAEs are known to acquire and enforce patents, they have the potential to behave like patent shoppers and are the target of this qualitative study.

Dataset: Descriptions and Analysis 2 (U.S. Patent and Trademark Office, Working Paper No. 2015–2, 2015) (explaining that recorded patent assignments are “executed (optionally) by an interested party . . .”).

92. A list of public PAEs is available from RPX. RPX, *Q3 2015 Public PAE Report* (2015), available at <https://www.rpxcorp.com/wp-content/uploads/sites/2/2015/12/RPX-Public-PAE-Report-Q3-2015-Final.pdf> [<https://perma.cc/M2YX-MYNN>].

93. For more information on the full taxonomy of PAEs, see Chien, *supra* note 52, at 1571; Cotropia, Kesan & Schwartz, *supra* note 66, at 656–58; Sara Jeruss, Robin Feldman & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L. & TECH. REV. 357, 366–67 (2013); Osenga, *supra* note 54, at 437–38; Lemley, *supra* note 55, at 613.

94. Described in John R. Allison, Mark A. Lemley & Joshua Walker, *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO. L.J. 677, 683–84 (2011).

95. James Bessen & Michael J. Meurer, *The Direct Cost from NPE Disputes*, 99 CORNELL L. REV. 387, 405 (2014).

96. Lemley & Melamed, *supra* note 54, at 2126.

97. *Id.*

A list of all public PAEs was obtained from RPX Corporation, a patent aggregator that issues reports on PAE practices. RPX's report lists twenty-three public PAEs in 2015.⁹⁸ Of these, fifteen are in the business of monetizing patents that were developed either by the company itself or by a predecessor, and their financial statements do not discuss patent acquisition. These companies are therefore less relevant for an evaluation of patent shopping and are not analyzed in detail below. The remaining eight companies are in the business of acquiring patents for enforcement (though some also monetize patents that were developed in-house). The business strategies of these eight companies, as assessed from their financial statements, are explored below. All eight companies very explicitly describe a strategy of patent shopping.

3. Results

As described above, the traditional, *ex ante* model of patent use is characterized by three chronological steps: (1) patent acquisition; (2) patent infringement; and (3) patent enforcement. By contrast, the shopping, *ex post* model flips the order of the first steps: (1) patent infringement; (2) patent acquisition; (3) patent enforcement. This allows patent acquisition to respond to infringement, rather than predict infringement. Below, the patent acquisition and enforcement strategies for each studied PAE are described in vignettes. Each PAE is explicit that it begins by surveying patent infringement and then responds to this infringement by acquiring patents which it then enforces. This chronology makes apparent that the PAEs follow the *ex post* patent shopping model, rather than the *ex ante* tradition model of patent use.

Acacia, one of the oldest and largest PAEs,⁹⁹ is a public company that describes its business as “focus[ing] solely on the patent marketplace . . . as a leading outsource patent licensing and enforcement company for patent owners.”¹⁰⁰ The business strategy has all of the components of the patent shopping model described above: (1) infringement; (2) acquisition; and (3) enforcement. Acacia begins by identifying patents that have or are expected to have economically enticing enforcement opportunities, conducts a detailed evaluation of the patents, acquires the patents, and enforces the patents.¹⁰¹ In Acacia's words

98. InterDigital (IDCC), Tessera (TSRA), Rambus (RMBS), Rovi (ROVI), Acacia (ACTG), WiLan (WILN), Pendrell (PCO), VimetX (VHC), Unwired Planet (UPIP), SITO Mobile (SITO), Vringo (VRNG), Network-1 (NTIP), ITUS (ITUS), Finjan Holdings (FNJN), Crossroads Systems (CRDS), Marathon Patent Group (MARA), ParkerVision (PRKR), Inventergy (INVT), Spherix (SPEX), Document Security Systems (DSS), Patriotic Scientific (PTSC), Walker Innovation (WLKR), Endeavor IP (ENIP).

99. Michael A. Carrier, *Patent Assertion Entities: Six Actions the Antitrust Agencies Can Take*, 2013 CPI ANTITRUST CHRON. 1, 3 (2013); Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1, 15 (2012) (“Acacia Research Corporation likely represents the first modern mass aggregator.”).

100. Acacia Research Corp., Annual Report (Form 10-K), at 4 (Mar. 15, 2016) [hereinafter “Acacia 10-K”].

101. *Id.* at 4–9.

[We] actively seek to identify high-quality but undervalued patent portfolios in a variety of industries. We combine our legal expertise, technology expertise, and our extensive knowledge of, and expertise in, the patent licensing ecosystem, to continually uncover important patent assets and bring needed proficiency to patent licensing and enforcement.¹⁰²

The first step in Acacia's business model is "Patent Discovery."¹⁰³ On occasion the patent holders themselves reach out to Acacia "seeking assistance with the monetization or enforcement" of patents or portfolios, or alternatively, Acacia "reach[es] out to patent holders who may be disenfranchised."¹⁰⁴ Acacia employees seek to "identify core, patented technologies that have been or are anticipated to be widely adopted by third-parties in connection with the manufacture, sale or use of products and services."¹⁰⁵ In the context of the patent shopping model, this means that Acacia is searching for patents or portfolios that are (or are expected to be) widely infringed and where that infringement is not yet being monetized through licensing or litigation.

Acacia then does extensive due diligence on the patent or portfolio, either using its own "staff of in-house business development executives, patent attorneys, patent licensing executives, and technology engineers" or contracting with "external specialists and technology consultants."¹⁰⁶ Acacia specifically focuses on evaluating infringement, validity, and enforceability.¹⁰⁷ For infringement, Acacia explains that it must "identify third-parties that are practicing the invention(s) covered by the patent without obtaining permission from the patent owner to do so."¹⁰⁸ Acacia considers the "types of claims and the number of claims potentially infringed by third-parties," as well as "potential infringers, industries in which the potential infringers exist, longevity of the patented technology" and other factors that "directly impact the magnitude . . . of a licensing and enforcement program."¹⁰⁹ The company additionally identifies future infringement that may arise, particularly "growth areas where patented technologies will play a vital role in connection with the manufacture or sale of products or services."¹¹⁰ Acacia "estimate[s] a patent's economic value by evaluating the expected value of . . . past, present, and future revenue of infringing products and services" discounted by the "risk that a court will disagree with our . . . assessments of the patent."¹¹¹ Crucially, this due diligence is all done "before the decision is made to allocate resources to a patent portfolio

102. *Id.* at 5.

103. *Id.* at 6.

104. *Id.*

105. *Id.*

106. *Id.* at 7.

107. *Id.*

108. *Id.* at 6.

109. *Id.* at 7.

110. *Id.*

111. *Id.*

investment.”¹¹² Thus, Acacia seeks to identify infringement and enforcement opportunities prior to acquiring the patent.

Acacia is an expert in evaluation of infringement opportunities and identification of patents that can be effectively enforced to capitalize on these opportunities. The “inherently complex nature of patent law” can make this task challenging, but “we employ our wealth of expertise to make the best assessment possible.”¹¹³

If due diligence goes well, Acacia acquires the patent. The nature of the transaction varies, including arrangements where Acacia “partner[s] with a patent portfolio owner, acquiring rights in the patent portfolio” or instances where Acacia “acquir[es] the patent portfolio outright.”¹¹⁴

Once Acacia has acquired a patent, it seeks to monetize the asset through licensing or litigation.¹¹⁵ Acacia boasts “a proven track record of licensing success with more than 1,490 license agreements.”¹¹⁶ However, monetization often requires litigation: “As a result of the common reluctance of patent infringers to negotiate and ultimately take a patent license for the use of patented technologies without at least the threat of legal action, patent licensing and enforcement often begins with the filing of patent enforcement litigation.”¹¹⁷

Acacia is not alone in pursuing a strategy of patent shopping. A number of other publicly traded companies reveal similar strategies in their financial statements. For example, Marathon Patent Group is “technology agnostic” and “special[izes in] patents and patent monetization”¹¹⁸; it has a “[s]trong patent acquisition pipeline with a proprietary process to value patent assets.”¹¹⁹

Like Acacia, Marathon searches for patents that have been infringed, or are likely to be infringed, and then acquires and enforces the patents. Marathon explains that “the patents and patent rights that we seek to acquire have large identifiable targets who are or have been using technology that we believe infringes our patents and patent rights.”¹²⁰ Marathon’s business model has two primary elements: “the identification, analysis and acquisition of patents and patent rights” followed by the

112. *Id.*

113. *Id.*

114. *Id.* at 4.

115. *Id.* at 7.

116. *Id.* at 3.

117. *Id.* at 5.

118. *Would Marathon Be Interested in My Patent?*, MARATHON PATENT GRP. (2016), <https://web.archive.org/web/20160429142236/http://www.marathonpg.com/for-patent-owners/would-marathon-be-interested-in-my-patent> [<https://perma.cc/8NRS-JXJ8>].

119. *Investor Presentation*, MARATHON PATENT GRP. 3 (Feb. 2015), <http://content.stockpr.com/marathonpg/media/6d823f116830875ff10328470858cf27.pdf> [<https://perma.cc/77BY-7BZ8>].

120. Marathon Patent Grp., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015 (Form 10-K), at 1 (Mar. 30, 2016) [hereinafter *Marathon Annual Report*].

“generation of revenue from the acquired patents or patent rights.”¹²¹ Marathon has been successful in acquiring over 300 patents and “intend[s] to add more patents . . . to [its] portfolio for the purpose of generating additional revenues from assertion of claims against infringers.”¹²²

Part of Marathon’s strategy relies on obtaining early and exclusive access to patent markets. Marathon has “worked to establish a supply of patent acquisition opportunities with patent brokers and dealers.”¹²³ Marathon also relies on a sophisticated proprietary method of conducting due diligence on patents. “Our portfolio evaluation involves an initial screening with our analytics platform . . . followed by internal technical analysis.”¹²⁴ The platform “is comprised of approximately 120 factors, and it has been continuously updated using actual observations.”¹²⁵ Marathon conducts this due diligence “before the decision is made to allocate resources to an acquisition.”¹²⁶ Of particular interest during due diligence is to “identify potential infringers; [and] industries within which the potential infringers exist.”¹²⁷ After acquisition, Marathon monetizes patents by “entering into licensing discussions, and if that is unsuccessful, initiating enforcement activities.”¹²⁸ Essentially, Marathon has created a series of relationships with potential patent sellers coupled with advanced due diligence techniques to identify patents that are infringed and then acquire and enforce these patents.

Similar to Marathon, Inventergy is a company “focused on developing relationships . . . with leading companies . . . who lack expertise in IP monetization.”¹²⁹ These companies may have “significant patent asset portfolios in areas that are no longer of strategic value to the client,”¹³⁰ and thus, potentially available for sale to Inventergy. Inventergy seeks patent portfolios in “strong-margin, high-growth segments of particular industry sectors.”¹³¹ Before acquiring a patent, Inventergy “reviews the patent assets” and studies “patents of prospective clients and evaluate[s] overall patent strength, the size of the appropriate addressable market(s), [and] the reasonably probable revenue.”¹³²

Inventergy is particularly concerned about identifying infringing behavior before acquiring the patent. It hunts for patents that “have clearly been adopted and built upon by other market participants”¹³³ and have legal and technical teams to “help[] analyze the products and services of prospective licensees [i.e.,

121. *Id.* at 2.

122. *Id.*

123. *Id.*

124. *Id.*

125. *Id.* at 3.

126. *Id.*

127. *Id.*

128. *Id.* at 1.

129. Inventergy Glob., Inc., Annual Report (Form 10-K), at 7 (Apr. 4, 2016).

130. *Id.* at 7–8.

131. *Id.*

132. *Id.* at 7–8.

133. *Id.* at 7.

infringers].”¹³⁴ These teams also “analyze[] patent claims and determine[] how these claims relate to products, services and industry standards.”¹³⁵ Inventergy concludes that a key element of its business strategy is “[l]everaging our management’s expertise to select . . . patent assets.”¹³⁶

Another example of patent shopping comes from Endeavor IP. Endeavor’s “activities generally include the acquisition and development of patents, and the monetization of those patents.”¹³⁷ It “will seek to acquire existing rights to intellectual property through the acquisition of already issued patents and pending patent applications.”¹³⁸

Endeavor particularly looks for patents that are presently being infringed by a large number of companies or are likely to become infringed soon. “[W]e will identify core, patented technologies that have been or are anticipated to be widely adopted by third parties in connection with the manufacture or sale of products and services.”¹³⁹ As part of this process, and during its “patent evaluation process,” they give “significant consideration . . . to the identification of potential infringers” and “industries within which the potential infringers exist.”¹⁴⁰ Endeavor also attempts to “identify potential problem areas [such as prior art] . . . and determine whether potential problem areas can be overcome, prior to acquiring a patent portfolio.”¹⁴¹

When the evaluation process is complete, Endeavor “may elect to purchase the patented technology.”¹⁴² After acquisition, Endeavor enforces the patents by “present[ing] the claims of [its] patents and demonstrat[ing] how they apply to companies we believe are using our technologies in their products or services.”¹⁴³ Endeavor is comfortable with both licensing negotiations or litigation: “These presentations can take place in a non-adversarial business setting, but can also occur through the litigation process, if necessary.”¹⁴⁴

Tessera Technologies, Inc. is another PAE involved in patent shopping. Tessera’s strategy is to “evaluate intellectual property portfolios for purchase in the fields of advanced semiconductor packaging, circuitry technologies, and related fields.”¹⁴⁵ It conducts these evaluations using specific criteria including “sales and profitability of the relevant products . . . size of the portfolio, legal criteria and . . . the likelihood of obtaining negotiated licenses.”¹⁴⁶ Tessera acknowledges

134. *Id.* at 8.

135. *Id.*

136. *Id.* at 4.

137. Endeavor IP, Inc., Annual Report (Form 10-K), at 2 (Jan. 28, 2016) [hereinafter Endeavor Annual Report].

138. *Id.*

139. *Id.* at 3.

140. *Id.*

141. *Id.*

142. *Id.*

143. *Id.*

144. *Id.*

145. Tessera Tech., Inc., Annual Report (Form 10-K), at 5 (Feb. 22, 2016).

146. *Id.*

that the success of its business “depends on our ability to continue to develop and acquire high quality patent portfolios” but that “competition for acquiring high quality patent portfolios is intense.”¹⁴⁷

Another example is Network-1, whose strategy “is to focus on acquiring high quality patents which management believes have the potential to generate significant licensing opportunities.”¹⁴⁸ The company “continually review[s] opportunities to acquire or license additional intellectual property.”¹⁴⁹ Network-1 notes that patent acquisition is not an easy business

Acquisitions of patent assets are competitive, time consuming, complex and costly to consummate. Our strategy is to focus on acquiring high quality patent assets which management believes have the potential for significant licensing opportunities. These high quality patent opportunities are difficult to find and are often very competitive to acquire.¹⁵⁰

Other companies are also patent shoppers. For example, Finjan intends to acquire “IP portfolios or other assets” and

identify relevant security technologies and patents that have been, or are anticipated to be, widely adopted by third parties in connection with the manufacture or sale of products and services, and to which we can bring enforcement actions.¹⁵¹

Similarly, Spherix Inc., a “patent commercialization company” has a strategy of “acquiring IP from patent holders” and then “managing a licensing campaign, or . . . settlement and litigation of patents.”¹⁵² Spherix specifically wishes to acquire patents from companies who had not been able to “effectively address the unauthorized use of their patented technologies.”¹⁵³

It is clear from these companies’ own descriptions of their business strategies that they engage in patent shopping. They are explicitly looking for instances of infringement before purchasing and enforcing patents. The business practices above are all clear examples of patent shopping.

C. Extending the Model

PAEs are not the only entities that can use a patent shopping strategy. This Section explores how the shopping model can be extended to other types of patentees. Specifically, this Section focuses on defensive aggregators, entities with large patent portfolios, and the practice of filing continuation applications.

147. *Id.* at 8.

148. Network-1 Tech., Inc., Annual Report (Form 10-K), at 2 (Mar. 30, 2016).

149. *Id.* at 1.

150. *Id.* at 16.

151. Finjan Holdings, Inc., Annual Report (Form 10-K), at 9 (Mar. 26, 2016).

152. Spherix Inc., Annual Report (Form 10-K), at 2 (Mar. 29, 2016).

153. *Id.* at 3.

1. *Defensive Aggregators*

Defensive aggregation is a relatively new business model with few players, though the field is growing.¹⁵⁴ Defensive aggregators characterize themselves as “fighting patent trolls”¹⁵⁵ and are in the business of protecting their clients against assertions of patent infringement. Defensive aggregators acquire large numbers of patents in order to guarantee that their clients will not be sued for infringement of those patents.¹⁵⁶ Clients are generally large practicing entities that are frequent targets of PAEs.¹⁵⁷

Defensive aggregators operate in a manner remarkably similar to the PAE patent shoppers described above, except that instead of acquiring patents with the goal of enforcing the patents, they acquire patents with the goal of preventing them from being enforced. However, the core of the shopping strategy is the same. Defensive aggregators seek patents that are likely being infringed or likely will be infringed and then acquire those patents. They succeed at their business because they have access to a market with many patents.

The parallels between the defensive aggregator strategy and PAE patent shopping behavior is clear from review of the financial statements of RPX Corporation, the only public patent aggregator.¹⁵⁸ RPX describes its core business as one “in which we acquire patents and licenses to patents that are being or may be asserted against our current and prospective clients.”¹⁵⁹ RPX reports that the substantial majority of its acquisitions “involved patent assets that we believed were relevant to multiple clients and/or prospective clients.”¹⁶⁰

RPX “closely track[s] patent assets that become available on the market” and has “reviewed more than 7,700 patent portfolios” since its inception.¹⁶¹ This “familiarity provides us early notice of patent portfolios that are entering the market.”¹⁶² Once RPX becomes aware of these portfolios, it applies a “rigorous and disciplined approach to evaluating acquisition opportunities.”¹⁶³ In particular, RPX uses a “proprietary methodology” to determine the “costs our clients might incur from potential assertions of those patents if we were not to acquire them.”¹⁶⁴ RPX also determines “the degree to which patent claims may describe technologies incorporated in clients’ products or services,” and “the legal quality of the patents

154. Anne Kelley, *Practicing in the Patent Marketplace*, 78 U. CHI. L. REV. 115, 119 (2011).

155. Lemley & Melamed, *supra* note 54, at 2119.

156. See Schwartz, *supra* note 66, at 379.

157. Kelley, *supra* note 154, at 119–20.

158. Andrei Hagiu & David B. Yoffie, *The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators*, 27 J. ECON. PERSP., no. 1, at 45, 56 (2013).

159. RPX Corp., Annual Report (Form 10-K), at 6 (Feb. 26, 2016).

160. *Id.* at 6.

161. *Id.*

162. *Id.*

163. *Id.*

164. *Id.*

and their likely validity.”¹⁶⁵ They continue to “refin[e] [their] processes for identifying potentially valuable patent assets” in order to serve their clients by shopping for patents that are being infringed or may be infringed.¹⁶⁶

2. Patent Portfolios

Thus far, patent shopping has been discussed in the context of shoppers who acquire patents from other entities. However, the patent shopping model can be extended to patentees who own extensive patent portfolios and shop in their own closet by choosing an appropriate patent (or patents) for enforcement from among hundreds or thousands of patents. This Section begins by summarizing literature on patent portfolios, and then explains how the patent shopping model can be extended to companies owning large patent portfolios. Because companies with large patent portfolios have many business functions apart from patent monetization, it is difficult to find evidence that these companies engage in patent shopping from review of their financial statements. Thus, this section instead gives a theoretical explanation for why companies with large patent portfolios are able to engage in patent shopping and also cites several statements by representatives of these companies that suggest that the companies do so.

a. Literature on Portfolios

Years ago, studies of patents came up against a puzzling observation: individual patents are worth less than the cost of filing the patent, and yet firms continue to file patents on a large scale.¹⁶⁷ Gideon Parchomovsky and Polk Wagner pioneered the “portfolio” theory of patent use, suggesting that the value of patent ownership lies not in individual patents but in ownership of a patent portfolio.¹⁶⁸ They propose that portfolios operate as a “super-patent,” providing the ability to exclude over a broad range.¹⁶⁹ Portfolios are both “sizeable,” meaning that any patents within a patent portfolio cover closely related areas,¹⁷⁰ and they are “diverse,” meaning that they include patents covering a number of different subject areas.¹⁷¹ Portfolio scale-effects create more value than would be suggested by merely adding together the value of individual patents.¹⁷²

165. *Id.*

166. *Id.* at 7.

167. Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PA. L. REV. 1, 2 (2005).

168. *Id.* at 31.

169. *Id.* at 7.

170. *Id.* at 41 (“[E]ffective patent portfolios are . . . *sizeable* . . . covering an expanse of closely related subject matter . . . increasing the size of a portfolio entails obtaining additional closely related patents (ideally, patents whose subject matter abuts existing holdings, so as to create a relatively seamless ‘super-patent’) . . .”).

171. *Id.* (“[E]ffective patent portfolios are . . . *diverse* . . . composed of distinct individual patents . . . increasing the diversity of a portfolio is best achieved by obtaining additional patents with more distinct subject matters.”).

172. *See id.* at 7–8.

Ideally, “the breadth of the right to exclude conferred by a patent portfolio is essentially the sum of the individual patent rights”¹⁷³ and each patent seamlessly abuts or slightly overlaps with its neighbor to create a broad area of protection¹⁷⁴ (picture the scales on a turtle’s shell). The broader aggregate scope of the portfolio increases the chance that the portfolio owner will be able to prove infringement of any one patent in the portfolio.¹⁷⁵ Holders of large patent portfolios may, therefore, “have an inherent advantage over competitors that hold a small number of individual patents.”¹⁷⁶ The broader diversity of the portfolio increases the number of different instances of infringement that can be targeted in enforcement proceedings. This similarly provides an advantage to the holders of large patent portfolios.

Patent portfolios may arise from internal company research, or from outside acquisition.¹⁷⁷ Outside acquisition may occur when firms purchase individual patents or small groups of patents, or when firms acquire large portfolios owned by another company.¹⁷⁸ For example, in 2011, Google bought Motorola Mobility’s patent portfolio of over 17,000 patents.¹⁷⁹ Patent portfolios have grown very large; Microsoft has over 50,000 patents,¹⁸⁰ IBM obtained over 25,000 patents between 1994 and 2004, while Canon obtained around 15,000 over the same period.¹⁸¹ However, research has shown that even smaller portfolios (holding dozens or hundreds of patents) can provide aggregate benefits beyond the mere number of individual patents.¹⁸² Some PAEs also own large patent portfolios. For example, Intellectual Ventures has acquired over 70,000 patents.¹⁸³

b. Portfolio Owners as Shoppers

Companies with large patent portfolios are shoppers, selecting individual patents from within the large portfolio to assert in litigation. Good patent

173. *Id.* at 33.

174. *See id.* at 41.

175. *Id.* at 34.

176. *Id.* at 65.

177. *See* Michael Risch, *Patent Portfolios As Securities*, 63 DUKE L.J. 89, 99–100 (2013).

178. *See id.* at 98–101.

179. Evelyn M. Rusli & Claire Cain Miller, *Google to Buy Motorola Mobility for \$12.5 Billion*, N.Y. TIMES (Aug. 15, 2011), <https://dealbook.nytimes.com/2011/08/15/google-to-buy-motorola-mobility/> [<https://perma.cc/HMD6-FJHY>]; *see also* Risch, *supra* note 177, at 101; Risch, *supra* note 179, at 101.

180. Mark R. Patterson, *Leveraging Information About Patents: Settlements, Portfolios, and Holdups*, 50 HOUS. L. REV. 483, 504 (2012).

181. Parchomovsky & Wagner, *supra* note 167, at 46–47.

182. *See* ESKIL ULLBERG, HOOVER INST., THE LANGUAGE OF TRUST AND RECIPROCITY IN PATENT MARKETS: A SOCIOLOGICAL ANALYSIS OF PROPERTY RIGHTS ON MESSAGES RESOLVING UNCERTAINTY IN EXCHANGE IN IDEAS 24 (2015), <http://hooverip2.org/wp-content/uploads/ip2-wp15016-paper.pdf> [<https://perma.cc/W7JL-T8TA>].

183. Erik Oliver & Kent Richardson, *Negotiating with Intellectual Ventures (IV)? What About Their Other Funds?*, IP WATCHDOG (May 26, 2016), <https://www.ipwatchdog.com/2016/05/26/negotiating-intellectual-ventures-iv-2/id=69464/> [<https://perma.cc/5TX9-JKLF>].

portfolios—those that are both sizeable and diverse—will include patents covering a number of different subject areas.¹⁸⁴ As a result, a large portfolio will cover both many different instances of infringement and will cover each individual instance of infringement with multiple patents. This allows the owners of large portfolios to select the preferred patents from an assortment of potentially enforceable patents.

The power of a sizeable and diverse portfolio can be seen by examining the patent portfolio owned by Koninklijke Philips N.V. (Philips), a “diversified technology company” that makes a variety of healthcare, consumer and lighting products.¹⁸⁵ Philips has a large portfolio of at least 25,000 U.S. Patents.¹⁸⁶ The portfolio spans a wide range of different technologies. For example, Philips owns patents on audio and video technologies such as MP3, MPEG, and text-to-speech, communications technologies such as smart metering and 4G cellular technologies, lighting technologies such as LEDs and luminescent solar concentrators (smart glass that dims automatically in bright sunlight), smartphone and tablet technologies such as touch screens and other user features, and home technologies such as televisions, remote controls, and voice control applications.¹⁸⁷ Thus, most people use many different technologies patented by Philips on a daily basis.

Philips’ portfolio not only covers many different technologies but it also includes clusters of many different patents covering a particular technology. In this manner, a person going about their daily routine might do many different infringing activities but will also infringe on many different patents with each activity. For example, *In re Princo* found that the defendant’s use of recordable and rewritable compact disks infringed at least five Philips patents.¹⁸⁸ The patents cover core technologies and overlap such that it is “highly implausible if not impossible as a practical matter” to avoid infringing on the patents.¹⁸⁹ When Philips litigates using these patents, it is therefore able to prove infringement easily, with the court stating that it was “clear that Defendants’ products contained certain features of the patent.”¹⁹⁰ It is perhaps not surprising that Philips was able to win easily, because Philips owns 4% of the *total* number of U.S. granted patents in this subject area.¹⁹¹

184. Parchomovsky & Wagner, *supra* note 167, at 41.

185. Koninklijke Philips N.V., *Philips Proposes to Change Company Name to Koninklijke Philips N.V. (Royal Philips)* (Feb. 25, 2013), <https://www.usa.philips.com/a-w/about/news/archive/standard/news/press/2013/20130225-Philips-proposes-to-change-company-name-Koninklijke-Philips-N-V.html> [<https://perma.cc/EZ6X-CCNB>].

186. Searching the USPTO Assignments database for patents assigned to “Koninklijke Philips” returns 25,028 patents, but the company may own other patents where the assignment was not recorded or the assignment was to a different name.

187. Koninklijke Philips N.V., *Licensing at the Heart of Innovation* (2019), <https://www.ip.philips.com/licensing/> [<https://perma.cc/76SG-A2G8>].

188. *In re Princo*, 478 F.3d 1345, 1348 (Fed. Cir. 2007).

189. *U.S. Philips Corp. v. Princo Corp.*, 361 F. Supp. 2d 168, 180 (S.D.N.Y. 2005).

190. *Id.* at 179.

191. I calculated this percentage using International Product Classifications (IPCs). For each IPC assigned to the patents-in-suit in the referenced case, I divided the total number of US granted patents assigned to Philips having that classification by the total number of US granted patents having that classification. The percent of patents owned by Philips varied between 2.3% and 5.6% for the 8

The result is that the owners of large patent portfolios can be shoppers. They can select particular instances of infringement; for example, hypothetically Philips could sue someone for using a cell phone, for using a television, for using a remote control, for turning on a light, and many other activities.¹⁹² Since not everyone will infringe on all areas of a patent portfolio, having patents covering many different areas give the portfolio owners the opportunity to enforce a patent against many different parties engaging in many different behaviors. Once a particular infringing behavior is identified, there is once again a selection opportunity:¹⁹³ the infringing behavior likely infringes on several overlapping patents; therefore, the portfolio owner can bring litigation using one or all of the patents. The portfolio owner can choose which patents to use for litigation along a number of different criteria, but they will likely involve some evaluation of whether the patent is likely to be valid, how easy it will be to prove infringement of the patent, and what types of patents will yield the greatest damages.

A striking example of how large patent portfolios can be used to ensure patent infringement comes from the famous dispute between IBM and Sun Microsystems.¹⁹⁴ IBM asserted seven patents, to which Sun responded that these patents were not infringed and were invalid.¹⁹⁵ IBM replied that even if “you don’t infringe these seven patents . . . we have 10,000 U.S. patents” and can “find seven patents you do infringe,” unless “you want to make this easy and just pay us \$20 million.”¹⁹⁶

Other companies with large patent portfolios can similarly leverage them to ensure infringement. In litigation between Microsoft and Barnes & Noble,

Barnes & Noble argues that Microsoft has never definitively identified which of Microsoft’s over 65,000 patents are infringed . . . Barnes [sic] & Noble contends that even though the patents are “trivial” it cannot work around them because Microsoft has said that it would simply come forward with other patents to assert against Barnes & Noble.¹⁹⁷

IPC classifications in question, for an average of 4.2%. Note that this raises antitrust concerns. *Id.* at 181.

192. This is hypothetical. Many of these acts would not be infringing because the manufacturer of the product would have a license from Philips for the relevant patents (and many of the products are also manufactured by Philips itself).

193. Note that the order in which the selection occurs in this hypothetical is arbitrary. Here, the portfolio owner first identifies an infringing behavior and then selects a patent, but this could also be done in the reverse, with a portfolio owner selecting a strong patent for infringement and then finding potential defendants.

194. Gary L. Reback, *Patently Absurd*, FORBES ASAP (June 24, 2002), <https://www.forbes.com/asap/2002/0624/044.html> [<https://perma.cc/W9WU-ZWAS>].

195. *Id.*

196. *Id.*

197. *Certain Handheld Electronic Computing Devices, Related Software, and Components Thereof*, Inv. No. 337-TA-769, WL 504367, at *5 (Jan. 31, 2012).

In this manner, companies with large patent portfolios can use a shopping strategy to find (a) a patent that is infringed and (b) a patent that is well positioned for litigation across whatever criteria are relevant.

3. Continuations

The concept of shopping, where infringement is identified and a patent is acquired to fit, has a parallel in the patent prosecution process: continuations. During patent prosecution, an applicant can create a sister application, called a “continuation” or “continuation-in-part,” which contains the same narrative text as the original application¹⁹⁸ but can have different claims.¹⁹⁹ Continuations can be filed at any time during the application process, even after the examiner has allowed the application, as long as the applicant has not yet paid the issue fee.²⁰⁰ The range of things that can be claimed in a continuation application is limited, as the claims of the continuation must be supported by the narrative text of the original application.²⁰¹

Notwithstanding this limitation, in extreme cases, applicants can learn about an idea from a competitor and, if the idea is close to the subject matter in the original application but not covered by the claims of the original application, submit a continuation with new claims covering the competitor’s process.²⁰² Thus, although a competitor may have been the first to discover a particular idea, the patent applicant can obtain a patent blocking the competitor from using the idea. The Federal Circuit has explained, “there is nothing improper, illegal or inequitable in filing a patent application for the purpose of obtaining a right to exclude a known competitor’s product from the market; nor is it in any manner improper to amend or insert claims intended to cover a competitor’s product.”²⁰³

Despite the Federal Circuit’s reassuring words, allowance of continuations in this manner strikes scholars as troublesome.²⁰⁴ There have been several

198. For a continuation. A continuation in part can contain different text in the specification. U.S. PATENT AND TRADEMARK OFFICE, MANUAL OF PATENT EXAMINING PROCEDURE § 1895 (9th ed., 7th rev. Nov. 2015) [hereinafter MPEP].

199. The claims of a patent are legal formulas that define the boundaries of the patent. 35 U.S.C. § 112 (claims “particularly point[] out and distinctly claim[] the subject matter which the inventor or a joint inventor regards as the invention”).

200. 35 U.S.C. § 120; 37 C.F.R. § 1.53(d).

201. *In re Lukach*, 442 F.2d 967 (C.C.P.A. 1971); MPEP, *supra* note 198, § 2163(B) (“the written description requirement prevents an applicant from claiming subject matter that was not adequately described in the specification as filed. New or amended claims which introduce elements or limitations which are not supported by the as-filed disclosure violate the written description requirement.”).

202. Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 76 (2004).

203. *Kingsdown Med. Consultants v. Hollister*, 863 F.2d 867, 874 (Fed. Cir. 1988).

204. *See, e.g.*, Mark A. Lemley, *Ten Things to Do About Patent Holdup of Standards*, 48 B.C. L. REV. 149, 163 (2007); Lemley & Moore, *supra* note 202, at 78.

unsuccessful attempts to limit the use of continuations, both in Congress²⁰⁵ and at the PTO.²⁰⁶

Continuations are analogous to shopping because they allow a patent applicant to wait until infringement has occurred and then craft an *ex post* response to infringement, rather than requiring a patentee to predict *ex ante* what infringement will look like. The key criticism of use of continuations to cover a competitor's product is that the "practice seems fundamentally unfair, since a competitor who was legitimately the first to invent a particular device or process may be held to have infringed on a patent claim written after . . . that invention."²⁰⁷

Table 1: Taxonomy of Patent Shoppers

Type of Entity	Source of Patent	Patent Characteristic Valued
PAE: "Big Game Hunter"	External	Infringed by high-value defendants; likely valid
PAE: "Bottom Feeder"	External	Infringed by many defendants; vague language; inexpensive
Defensive Aggregator	External	Infringed by clients
Owner of Large Patent Portfolio	Internal	Infringed by defendants of interest (perhaps competitors); likely valid
Patent Applicant (Filing a Continuation)	Internal	Infringed by defendants of interest (perhaps competitors); likely valid

III. IMPLICATIONS & POLICY

Patent shoppers and innovators behave in fundamentally dissimilar ways, with consequently divergent effects and implications. This Section analyzes these differences.

205. H.R. 2795, 109th Cong. (2005) (granting the USPTO the explicit ability to limit continuations).

206. Changes to Practice for Continuing Applications, Requests for Continued Examination Price, and Applications Containing Patentably Indistinct Claims, 71 Fed. Reg. 48 (Jan. 3, 2006) (to be codified at 37 C.F.R. pt. 1).

207. Lemley & Moore, *supra* note 202, at 78.

Table 2: Differences Between Shoppers and Innovators

	Shoppers	Innovators
Enforcement	Advantage	Disadvantage
Effects of Probabilistic Patents	Probability of patent having value approaches 1	Probability of patent having value < 1
Relationship to Infringement	Want infringement	Want to prevent infringement
Relationship to Patent Text	Not bound by patent text	Bound by patent text
Strategic Implications	Plaintiff chooses defendant by acquiring patent	Defendant chooses plaintiff by infringing
Patent Enforcement Levels	Increased enforcement	Decreased enforcement
Marketability of Patents	May create market in patents	Do not create (though may use) market in patents
Policy Targets	Transaction	Substance

A. Enforcement Advantage

In the game of patent enforcement, patent shoppers have a significant advantage over small innovators who own only one or two patents (and cannot acquire more). The small innovator has a limited number of choices for patent enforcement, meaning that in many instances a third party's behavior will simply fall outside of their patents and the small innovator will not be able to use patent enforcement as a mechanism to prevent the behavior or monetize patent assets. In addition, even if the third party's behavior falls within the patent, the patent may be of dubious validity, in which case it will be considerably riskier and more difficult for the plaintiff to win their case.

The patent shopper's advantage comes down to numbers. The patent shopper has access to a greater number of patents covering a wide variety of activities and, therefore, has a greater probability of having access to a valuable patent that can be successfully enforced.

Because patent invalidity is so common²⁰⁸ and infringement is either difficult to prove or the patent simply does not end up covering important technology, most

208. Michael D. Frakes & Melissa F. Wasserman, *Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents?*, 67 STAN. L. REV. 613, 615–17 (2015).

patents “turn out to have little or no commercial significance.”²⁰⁹ The value of any individual patent is “highly skewed, with the top 1 percent of patents more than a thousand times as valuable as the median patent.”²¹⁰ This has led scholars to suggest that patents are like lottery tickets, where inventors seek patents “knowing that most of the resulting patents will turn out to be worthless, but hoping that a few will pay off big-time.”²¹¹ This uncertainty means that patent filing and enforcement behavior will reflect the “probabilistic” nature of patents.²¹² No patent is guaranteed to be valuable, enforceable, or valid.

The probabilistic nature of patents impacts shoppers and innovators quite differently. Shoppers have access to a large pool of patents. If that pool is large enough and the patents are different enough that they will not all be infringed or invalidated by the same activities or evidence, then shoppers can overcome the probabilistic nature of patents. For example, if, on average, every patent has a 5% chance of being infringed by a target worth pursuing in litigation, a shopper has a strong chance of having a meritorious infringement case if she owns twenty or more patents. Similarly, if, on average, a patent has a 50% chance of being found to be invalid, a shopper with access to five patents has a good chance that at least one will be valid. These calculations assume independent probabilities (probably an unrealistic assumption) and become more complex when infringement, validity, and other factors are added to the same case. However, with patent portfolios frequently in the thousands and often in the tens of thousands, there are many companies who can feel confident that they own or have access to at least one valid and infringed patent. This is particularly advantageous if the shopper’s sole goal is monetization, rather than obtaining an injunction against a specific target.

The innovator in the traditional model has, however, a much smaller probability of owning a patent that is valid and infringed. The innovator owns only one or two patents and thus, given the numbers in the hypothetical above, a much smaller chance of having an infringed or valid patent. Because the innovator only has access to a small number of patents, he cannot exploit sheer volume to overcome the probabilistic nature of patents.

Every patent is unique, and access to many patents is no guarantee of winning, nor is access to only a small number of patents a guarantee that the patents are not valuable or enforceable. However, as a general matter, the patent shopper able to choose from a large pool of patents will have an enforcement advantage over the patentee restricted to only a small number of patents.

209. Lemley & Shapiro, *supra* note 30, at 75. Empirical evidence shows that only 0.1% of patents are litigated to trial. Jean O. Lanjouw & Mark Schankerman, *Characteristics of Patent Litigation: A Window on Competition*, 32 RAND J. ECON. 129, 130 (2001).

210. Lemley & Shapiro, *supra* note 30, at 80. For an empirical study, see John R. Allison, Mark A. Lemley, Kimberly A. Moore & R. Derek Trunkey, *Valuable Patents*, 92 GEO. L.J. 435, 460 (2004).

211. Lemley & Shapiro, *supra* note 30, at 81; *see also*, F.M. Scherer, *The Innovation Lottery*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY 3 (Rochelle Cooper Dreyfuss et al., eds., 2001).

212. Lemley & Shapiro, *supra* note 30, at 76.

B. Relationship to Infringement

Innovators and patent shoppers have divergent views of patent infringement. Innovators who, under the traditional model, want to commercialize a product would prefer to avoid infringement if possible. Shoppers, by contrast, eagerly seek infringement.

Innovators are often patenting in conjunction with development and commercialization of a product. They seek to create “a patent estate that maximizes value for the owner and discourages patent litigation.”²¹³ The American Bar Association’s Patent Infringement Litigation Handbook explains that “[i]n a perfect world the grant of a patent would cause others to avoid working on anything close to the patented invention.”²¹⁴ It further explains that the ideal patent would either cause “a competitor [to] withdraw[] from the market” or “sell[] only what is already in the prior art.”²¹⁵ In other words, the goal is to dissuade competitors from approaching the patented area altogether. Infringement, though it can be addressed through litigation, simply creates headaches, and a “well-considered plan for invention protection” can be “used effectively to avoid expensive, time-consuming, and sometimes company killing patent infringement litigation.”²¹⁶

Patent shoppers view infringement very differently. Patent shoppers earn returns by identifying and addressing infringement, and thus both eagerly await it and actively seek it out. For example, Endeavor gives “significant consideration . . . to the identification of potential infringers” before acquiring a patent,²¹⁷ Marathon seeks patents that “have large identifiable targets who have been using technology that we believe infringes our patents,”²¹⁸ and Acacia identifies third-parties “that are practicing the invention(s) covered by the patent without obtaining permission from the patent owner to do so.”²¹⁹ Shoppers derive no value from situations where a patent dissuades competitors from entering a market completely. Thus, infringement is transformed from an area of concern under the traditional model to a desired feature under the shopping model.

This different relationship with infringement enhances the enforcement advantage already held by patent shoppers. If innovators enforce a patent, they do so to target a particular behavior or a particular competitor. This means that they have a small number of acceptable enforcement targets. Shoppers, by contrast, often enforce the patent with the goal of monetizing the patent. Thus, acceptable enforcement targets are diverse and numerous. This puts probability on the side of the shopper. The innovator may own two patents and have two possible

213. ALAN R. THIELE, JUDITH R. BLAKEWAY & CHARLES M. HOSCH, *THE PATENT INFRINGEMENT LITIGATION HANDBOOK: AVOIDANCE AND MANAGEMENT*, at xviii (2010).

214. *Id.* at 13.

215. *Id.* at 14.

216. *Id.* at xx.

217. Endeavor Annual Report, *supra* note 137, at 3.

218. Marathon Annual Report, *supra* note 120, at 1.

219. Acacia 10-K, *supra* note 100, at 6.

infringement targets—a total of four different potential scenarios, of which the innovator must win one to accomplish its goal. The shopper may have access to one hundred patents and have one hundred different infringement targets—creating an enormous range of potential scenarios, winning any one of which would benefit the shopper.

C. *Strategic Implications*

For any case of deliberate infringement (or infringement caused by deliberate ignorance), the defendant first has the opportunity to select the plaintiff, and then the plaintiff has the opportunity to select the defendant. The defendant has the opportunity to select the plaintiff by deciding whether or not to take an infringing action. If he chooses to infringe, he chooses the possibility of being a defendant in an infringement suit. The plaintiff then has the opportunity to decide whether or not to bring an infringement suit.

The dynamics of this choice are different under the traditional model of patent use and under the shopping model of patent use, though both choices still happen under both models. Under the traditional model, the dominant dynamic is the defendant choosing the plaintiff. Competitors could choose to enter a space with a patent and either try to license the patent, work-around the patent, or ignore the patent, the latter two potentially prompting a suit. Large companies anecdotally often ignored patents held by smaller players because they knew that small players did not have the resources to bring suit.²²⁰ The dynamic is one of an infringer choosing a calculated risk of infringement based on characteristics of the defendant, such as whether she is able to finance a lawsuit, the likelihood of a work-around actually infringing, reputational costs of a lawsuit, and others. The plaintiff must still choose to bring suit, but the defendant's choice happens first.

By contrast, under the shopping model, the dominant dynamic is one where the plaintiff chooses the defendant. A defendant still begins by infringing a patent, but the defendant is not choosing a plaintiff because the eventual plaintiff will not yet have bought the patent. At a later time, the plaintiff chooses the defendant by deciding whether or not to acquire a patent that is being infringed. The plaintiff can make that choice based on many different considerations such as whether there are many infringers, if it is a holdup situation, if the infringer has deep pockets, whether the suit against the infringer can be leveraged in some other way,²²¹ and whether the infringer has a reputation for fighting back, giving in, or taking a license. For example, Marathon explains, “[T]he patent and patent rights that we seek to acquire have large identifiable targets who are or have been using the technology that we

220. Lemley, *supra* note 66, at 21.

221. For example, end user suits (though these are rare). Roger D. Blair & Thomas F. Cotter, *An Economic Analysis of Seller and User Liability in Intellectual Property Law*, 68 U. CIN. L. REV. 1, 3 (1999). Here the defendant is an individual who may be judgment proof, but the suit places great pressure on upstream manufacturers to obtain a license from the patentee. *See, e.g.*, Dmitry Karshedt, *Damages for Indirect Patent Infringement*, 91 WASH. U. L. REV. 911, 970 (2014).

believe infringes . . . [our] patents.”²²² In this manner, Marathon, who will be the plaintiff in any eventual enforcement action, is choosing the defendant by acquiring an infringed patent.

D. Relationship to Patent Text

The words of the patent have always been the dominant focus in both patent prosecution and patent litigation. Patent prosecutors are exhorted to put great effort into each word of the patent, particularly the patent claims, as “[e]very word and every phrase in a patent claim is a test.”²²³ In litigation, the text of the patent becomes even more crucial. In the famous words of Giles Rich, “[T]he name of the game is the claims.”²²⁴

Under the traditional model of patent use, the patentee’s involvement in selecting the patent text is predominantly *ex ante*—the patentee’s drafting choices before patent grant set the bounds of the patent, and patent rights are then maintained statically throughout the life of the patent.²²⁵ More recent scholarship argues that while certain aspects of the patent are fixed *ex ante*, the scope of the patent is malleable within certain limits.²²⁶ Even under the malleability model, the portions of the patent that are fixed before patent grant are not insignificant. The patentee drafts the specification²²⁷ and claims of the patent during the application phase, and the prior art is fixed as of the priority date of the patent. Once the patent is granted, the claims of the patent in conjunction with the specification and prior art demarcate a defined space over which the patentee is granted the right to exclude others.²²⁸ After patent grant, the patentee can make modifying arguments during litigation by arguing the doctrine of equivalents or pursuing certain claim construction strategies. However, these opportunities are both limited by drafting choices and closely governed by the courts, which are (arguably) guided by a calculus of social benefit.²²⁹

In contrast to the traditional model of patent use, the text of the patent as it was drafted *ex ante* is far less important to patent shoppers. Patent shoppers effectively choose the boundaries of their patent after grant by selecting a patent

222. Marathon Annual Report, *supra* note 120, at 23.

223. THIELE, *supra* note 213, at 10.

224. Giles S. Rich, *Extent of Protection and Interpretation of Claims – American Perspectives*, 21 INT’L REV. INDUS. PROP. & COPYRIGHT L. 497, 499 (1990).

225. Jason Rantanen, *The Malleability of Patent Rights*, 2015 MICH. ST. L. REV. 895, 895 (2015).

226. *Id.*

227. A narrative portion of the patent describing the invention. 37 C.F.R. § 1.51(b)(1).

228. See, e.g., Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 WM. & MARY L. REV. 49, 65 (2005).

229. Although exactly which calculus guides doctrine of equivalents decisions is debated and claim construction decisions may have no relation to social benefit at all. See Michael J. Meurer & Craig Allen Nard, *Invention, Refinement and Patent Claim Scope: A New Perspective on the Doctrine of Equivalents*, 93 GEO. L.J. 1947, 1950 (2005) (“Recent decisions have moved away from a deontological fairness theory Unfortunately, the courts have not replaced their fairness theory with a new normative account that explains when and how the DOE contributes to social welfare.”).

having appropriate boundaries. The name of the game is still the claim, but the game is claim shopping, not claim drafting.

E. Patent Enforcement Rates

As discussed above, there is widespread underenforcement of patent infringement.²³⁰ Shoppers, by identifying instances of infringement and then acquiring and enforcing patents that might have otherwise gone unenforced, may reduce underenforcement.²³¹

In doing so, shoppers can be characterized as addressing an unfulfilled need in patent law. Many patentees cannot enforce their patents without help. If a patentee is an individual or small company, she may have approached larger companies about a license or to alert them to infringement but been ignored. Large companies are incentivized to ignore small patentees because the large company knows it will be difficult for the patentee to obtain financing to bring the case to court.²³² The 2008 movie *Flash of Genius* tells the true story of Robert Kearns, who invented and patented the intermittent windshield wiper.²³³ He offered to sell his invention to several large car companies, but these companies ignored him.²³⁴ Kearns was able to represent himself in court, although it took twelve years of litigation (during which, according to the movie, Kearns suffered a mental breakdown and his wife left him) in order for Kearns to obtain damages from the car companies.²³⁵ Unlike Kearns, most inventors cannot represent themselves in court and cannot pay for a lawyer.²³⁶

Shoppers create opportunities for patent sale and actively seek instances where companies infringe on patents. Thus, previously ignored patentees can approach shoppers. For example, Endeavor explains that “[o]ften, individual inventors and small companies . . . are unable to effectively address the unauthorized use of their patented technologies” and that Endeavor seeks to partner with patentees that “do not have experience or expertise [and] . . . do not possess the in-house resources to devote to intellectual property licensing and enforcement activities.”²³⁷ This creates a needed mechanism to give enforcement power to small patentees.

Increased enforcement in certain circumstances is helpful, but too much enforcement is a problem. Full patent enforcement would cause the economy to

230. *Supra* Section I.C.

231. For discussion of how “copyright trolls” enforce actions that would otherwise have gone underenforced, see Shyamkrishna Balganesh, *The Uneasy Case Against Copyright Trolls*, 86 S. CAL. L. REV. 723, 725 (2013).

232. See *supra* Section I.C. on the challenges of obtaining financing for patent litigation.

233. FLASH OF GENIUS (Universal Pictures 2008).

234. The Associated Press, *Robert Kearns, 77, Inventor of Intermittent Wipers, Dies*, N.Y. TIMES, Feb. 26, 2005, at A13.

235. *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1543 (Fed. Cir. 1994).

236. *Supra* Section I.C.

237. Endeavor Annual Report, *supra* note 137, at 3.

grind to a halt.²³⁸ The rise in enforcement caused by patent shoppers has been criticized for hampering innovative companies who inadvertently infringe on patents.²³⁹ If a company infringed upon a patent of which they were unaware and could not realistically have been aware, is it fair to hold the company liable?²⁴⁰

In tort law, economists have argued that liability is a vehicle for deterring undesirable conduct.²⁴¹ Thus, underenforcement is an impediment to deterrence (though full enforcement would also not be optimal).²⁴² However, tort law's underenforcement-deterrence narrative does not sit comfortably in the world of patent law. The ultimate goal of patent law is incentivizing innovation.²⁴³ Some amount of enforcement of patent infringement likely does work towards this goal, but complete enforcement of patent infringement most likely would not. Innovation in patent law is an iterative process. It begins with an invention by a pioneering patentee, and the invention is then developed and expanded upon by downstream innovation. Maximal deterrence of patent infringement would incentivize innovation by the original, upstream, patentee because the value of the upstream patent would be higher if there was no unpunished infringement. However, maximal deterrence of patent infringement might hamper downstream innovation by increasing the price of that innovation. Where tort and patent law diverge is that infringement—the behavior that must be deterred to promote innovation—is often itself an innovation.

There is no clear answer about the optimal level of infringement and enforcement thereof. It fits into a larger literature about the tradeoff between upstream and downstream innovation and is a question that has been explored at

238. Because patent infringement is exceedingly common. *See supra* Section I.C.

239. *See, e.g.,* JAFFE & LERNER, *supra* note 40, at 18.

240. Scholars have discussed this question at length outside of the context of shoppers, asking whether it is equitable to punish independent inventors. *See, e.g.,* Michelle Armond, *Introducing the Defense of Independent Invention to Motions for Preliminary Injunctions in Patent Infringement Lawsuits*, 91 CAL. L. REV. 117 (2003); Roger Milgrim, *An Independent Invention Defense to Patent Infringement: The Academy Talking to Itself: Should Anyone Listen?*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 295 (2008); Samson Vermont, *Independent Invention As a Defense to Patent Infringement*, 105 MICH. L. REV. 475 (2006).

241. Richard A. Posner, *A Theory of Negligence*, 1 J. LEGAL STUD. 29, 33 (1972); STEVEN SHAVELL, *ECONOMIC ANALYSIS OF ACCIDENT LAW* (1987). *But see* John C. P. Goldberg, *Twentieth-Century Tort Theory*, 91 GEO. L.J. 513, 553 (2003) (explaining arguments against the deterrence theory of torts); Gary T. Schwartz, *Reality in the Economic Analysis of Tort Law: Does Tort Law Really Deter?*, 42 UCLA L. REV. 377, 381 (1994) (summarizing objections against deterrence-based theories of tort law).

242. W. Jonathan Cardi, Randall D. Penfield & Albert H. Yoon, *Does Tort Law Deter Individuals? A Behavioral Science Study*, 9 J. EMPIRICAL LEGAL STUD. 567, 570 (2012). Underenforcement is a problem across a variety of different types of torts. *See, e.g.,* Richard L. Abel, *A Critique of Torts*, 37 UCLA L. REV. 785, 813 (1990); Kenneth S. Abraham & John C. Jeffries, Jr., *Punitive Damages and the Rule of Law: The Role of Defendants' Wealth*, 18 J. LEGAL STUD. 415, 419 (1989); David Shieh, *Unintended Side Effects: Arbitration and the Deterrence of Medical Error*, 89 N.Y.U. L. REV. 1806, 1831 (2014); Jennifer Wriggins, *Domestic Violence Torts*, 75 S. CAL. L. REV. 121, 163 (2001).

243. JAFFE & LERNER, *supra* note 40, at 18.

length in the patent literature.²⁴⁴ An underlying empirical question is, if shoppers increase enforcement of patents, how much of that increase in enforcement incentivizes innovation? Not all shoppers innovate themselves; some are solely middlemen. In order for innovation to be incentivized, these shoppers must pass some returns on to the original inventor so that future inventors believe that they will be able to obtain higher returns on their patent and are consequently incentivized to innovate. Studies have attempted to put a number returns to innovators,²⁴⁵ but the results are controversial.²⁴⁶ Overall, while increased enforcement of patent infringement might result in increased innovation, it is far from clear that this is the case or that shoppers are the proper vehicle to accomplish increased enforcement.

F. Marketability of Patents

The purpose of patents is to incentivize innovation.²⁴⁷ This purpose would be poorly served if there were no way to buy or sell patents, or if the market in patents were very limited.²⁴⁸ Not every inventor who obtains a patent has the resources or desire to commercialize a product. Thus, patents must be saleable.

Shoppers may help create a market for patents by buying patents from others. Shoppers also may create a market in patent *claims*. As described above, shoppers acquire patents for the purpose of litigation. Thus, a shopper purchasing a patent and then initiating a lawsuit is not different in any essential way from a contingency fee lawyer providing financing, for example, for a tort claim. Seen through the lens of market creation and litigation financing, shoppers enable the monetization of patents, presumably increasing the value of the patent right. More valuable patents should be a greater incentive for innovation.²⁴⁹ Under this narrative, shoppers may be promoting innovation.

244. See, e.g., Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *SCIENCE* 698, 698 (1998); Peter Lee, *Patents, Paradigm Shifts, and Progress in Biomedical Science*, 114 *YALE L.J.* 659, 661–62 (2004); Arti K. Rai, *Fostering Cumulative Innovation in the Biopharmaceutical Industry: The Role of Patents and Antitrust*, 16 *BERKELEY TECH. L.J.* 813, 819–20 (2001).

245. Bessen & Meurer, *supra* note 95, at 411 (“Payments to independent inventors come to only 5% of the direct costs to defendants (and are only 7% of NPE licensing revenues). Note furthermore that this figure likely overstates the longterm flow of funds to inventors . . .”).

246. David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 *CORNELL L. REV.* 425, 434–41 (2014); see also David S. Olson, *On NPEs, Holdups, and Underlying Faults in the Patent System*, 99 *CORNELL L. REV. ONLINE* 140 (2014).

247. U.S. CONST. art. I, § 8, cl. 8.

248. See, e.g., John M. Golden, “*Patent Trolls*” and *Patent Remedies*, 85 *TEX. L. REV.* 2115, 2117 (2007) (explaining that denying injunctions based on the patent holder’s business model would “act as an undesirable drag on the efficiency and competitiveness of markets for innovation”).

249. Merges & Nelson, *supra* note 33, at 868.

G. Policy

Scholars and policymakers are actively trying to change policy in the patent arena. In 2011, the America Invents Act was passed, which President Obama called, “[T]he most significant reform of the Patent Act since 1952.”²⁵⁰ In the past five years, numerous further patent reform bills have been introduced before Congress, most targeted towards the types of entities who are likely to be patent shoppers.²⁵¹ The Obama White House issued statements advocating certain goals for patent policy.²⁵² In sum, patent law is presently an area of active policy change, and the goal is often changing the behavior of shoppers.

The normative effects of patent shoppers have been discussed at length by scholars in other contexts. As a result, this Article will not revisit the normative discussion at length but rather summarize the dominant conclusion: the acts of patent acquisition and enforcement are not inherently problematic themselves, but some actors are conducting these actions in problematic ways. The major behavioral concerns are discussed briefly in Part 1, below.

The patent system has several mechanisms to protect against problematic behavior. However, these mechanisms have not worked particularly well to prevent abuses by PAEs. The shopping model can help explain the failure of presently available safeguards. In essence, the safeguards operate on the level of the individual patent and can, therefore, be “shopped around” by entities who have access to large numbers of patents. This is explored further in Part 2, below.

Accepting the premise that some (though not all) patent shoppers behave in detrimental ways that are not well addressed by current policy, shopping theory provides some insight into how to craft policy that will impact shoppers. Part 3 discusses the advantage and disadvantages of different approaches and proposes specific mechanisms to hamper shoppers’ bad behavior.

250. Press Release, White House Office of the Press Sec’y, President Obama Signs America Invents Act, Overhauling the Patent System to Stimulate Economic Growth, and Announces New Steps to Help Entrepreneurs Create Jobs (Sept. 16, 2011).

251. Trade Protection Not Troll Protection Act, H.R. 2189, 115th Cong. (2017); Transparency in Assertion of Patents Act, S. 2049, 113th Cong. (2014); Patent Fee Integrity Act, S. 2146, 113th Cong. (2014); Innovation Act, H.R. 3309, 113th Cong. (2013); Patent Transparency and Improvements Act of 2013, S. 1720, 113th Cong. (2013); Demand Letter Transparency Act of 2013, H.R. 3540, 113th Cong. (2013); Patent Litigation Integrity Act of 2013, S. 1612, 113th Cong. (2013); Innovation Act, H.R. 3309, 113th Cong. (2013); Patent Litigation and Innovation Act of 2013, H.R. 2639, 113th Cong. (2013); Stopping the Offensive Use of Patents Act, H.R. 2766, 113th Cong. (2013); Patent Abuse Reduction Act of 2013, S. 1013, 113th Cong. (2013); End Anonymous Patents Act, H.R. 2024, 113th Cong. (2013); Patent Quality Improvement Act of 2013, S. 866, 113th Cong. (2013); Saving High-Tech Innovators from Egregious Legal Disputes Act of 2013, H.R. 845, 113th Cong. (2013).

252. Press Release, White House Office of House Press Sec’y, Fact Sheet - Executive Actions: Answering the President’s Call to Strengthen Our Patent System and Foster Innovation (Feb. 20, 2014).

1. *The Problem with Shoppers*

What is wrong with buying a patent? And if the patent is infringed, why is it wrong to seek a license from the infringer or sue if the infringer proves reluctant? Taken in isolation, these actions are important parts of a functioning patent system and are not wrong at all. Yet when a company buys a patent solely for the purpose of enforcement (rather than commercialization), it operates outside the traditional equilibrium of the system and therefore has a heightened chance of abusing the system.²⁵³ Companies that do research and commercialize products are thought to be restrained from, for example, filing nuisance patent suits or attempting to hold up a competitor for fear that they will have the same strategies used on them in return or that they will pay a reputational cost.²⁵⁴ Further, any monetary gain these companies might make from patent enforcement could be plowed back into their own innovative projects and therefore may be a net gain to innovation. Though not all shoppers are bad actors, and bad actions are not the sole province of shoppers, there are voluminous reports of shoppers using patent enforcement in the following problematic ways:

Holdup: “The prospect of an injunction-induced blackout of handheld e-mail” has “haunted current policy discussions regarding U.S. patent law.”²⁵⁵ Injunctions were the traditional remedy for patent infringement.²⁵⁶ Thus, if a small and perhaps even unnecessary component of a complex device infringed on a patent, the patentee would have the power to enjoin all sales of that device until the infringer was able to negotiate a license or redesign the device to avoid infringement. Neither option would be particularly palatable to the infringer. The former would result in expense wildly disproportionate to the value of the infringer component because the patentee would have the infringer over a figurative barrel. The latter would require pulling the product from the market for the time needed to redesign, likely resulting in significant loss of customer base. The most well-known company to face this choice, Research in Motion, the maker of the BlackBerry handheld device, chose to negotiate a license and pay the patentee \$612 million.²⁵⁷

Injunctions are now harder to get, particularly for PAEs.²⁵⁸ However, the possibility still renders patent litigation a frightening prospect for defendants. Knowing this, patent shoppers can use patent enforcement to extract disproportionately large settlements. Further, “lock-in”—making a physical product

253. Balganes, *supra* note 231, at 747–69 (discussing the equilibrium in the context of copyright).

254. *Supra* Section I.B.

255. John M. Golden, *Principles for Patent Remedies*, 88 TEX. L. REV. 505, 506 (2010).

256. Though this has changed somewhat in the aftermath of *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

257. Rob Kelley, *BlackBerry Maker, NTP Ink \$612 Million Settlement*, CNNMONEY.COM (Mar. 3, 2006, 7:29 PM), https://money.cnn.com/2006/03/03/technology/rimm_ntp/ [https://perma.cc/8DUH-ZX6Y] (“Research in Motion averts shutdown of wireless e-mail service . . .”).

258. Bernard H. Chao, *After eBay, Inc. v. MercExchange: The Changing Landscape for Patent Remedies*, 9 MINN. J.L. SCI. & TECH. 543, 545 (2008).

that has a particular patented component—makes it difficult for potential defendants to easily change course to avoid suit. Patent shoppers may “wait[] until a technology is fully entrenched before scouting around for patents to acquire or asserting the patents it holds.”²⁵⁹ Because it is practically impossible for product companies to avoid all patent infringement, they cannot avoid exposing themselves to the possibility of holdup.²⁶⁰

Nuisance suits: Patent litigation is expensive.²⁶¹ This creates the potential for “nuisance fee economics,” described as a system where “defendants pay [settlement fees] not because of the economic value of the patent, but in order to avoid the cost of determining liability and resolving a patent demand.”²⁶² PAEs will sometimes send demand letters or file suit with vague infringement allegations, where the defendant has strong arguments to counter but the defendant may find it easier and cheaper to pay a settlement rather than litigate.²⁶³

Net loss of money for innovation: Proposals to restrict patent purchases and enforcement are not intuitively justifiable; why block a functioning market or impose costs on companies that have found an arbitrage opportunity and are simply exploiting it? Patents are not the same as other business opportunities. Most business opportunities do not rely on a monopoly grant from the government. The patent system does, and the monopoly grant is given for a specific purpose (set out in the Constitution): promoting innovation.²⁶⁴ A concern with shoppers is that they obtain large settlement or damage awards from infringers—who are often companies doing their own innovation—but very little of that money goes to the original patentee (presumably an innovator).²⁶⁵ Rather, the profit is in the hands of the middleman and is therefore taken out of the innovation cycle. Middlemen making a profit is not normally problematic, but when it is made as a product of a government-granted monopoly but does little to serve the goal of that grant, it is worrisome.

To reiterate, nothing about the practice of patent shopping necessitates these behaviors, and not all patent shoppers behave in these ways. However, enough do that policymakers want to prevent these occurrences.²⁶⁶ The sections below first explain how patent shoppers evade some types of policy and then recommend several policies that will impact patent shoppers.

259. Robert P. Merges, *The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law*, 24 BERKELEY TECH. L.J. 1583, 1591 (2009).

260. *Id.*

261. Colleen Chien, *Startups and Patent Trolls*, 17 STAN. TECH. L. REV. 461, 467 (2014).

262. *Id.* at 6.

263. E.g., Ranganath Sudarshan, *Nuisance-Value Patent Suits: An Economic Model and Proposal*, 25 SANTA CLARA COMPUTER & HIGH TECH. L.J. 159, 159 (2008).

264. U.S. CONST. art. I, § 8, cl. 8.

265. Bessen et al., *supra* note 54, at 28.

266. See, e.g., legislative proposals cited *supra* note 252.

2. How Patent Shoppers Evade Policy

All of these problems can occur in litigation brought by any type of patentee, not just patent shoppers. As a result, the patent system and the litigation system more broadly have safeguards built in to prevent certain bad outcomes. Several of these safeguards are described below. The descriptions are followed by explanations of how, while the safeguards may work for many patentees, shopping theory predicts that they will not work for patent shoppers because they can shop around the safeguards.

Motions to Dismiss: Nuisance suits occur when there is weak support for the plaintiff's case, but the defendant settles anyway because pursuing a judgment on the merits is expensive.²⁶⁷ When the facts are very weak or the complaint is exceedingly vague, these suits can be resolved through the relatively inexpensive measure of the motion to dismiss.²⁶⁸ While dismissal is not always effective against nuisance suits, it is particularly ineffective against nuisance suits brought by patent shoppers. First, patent shoppers have access to multiple patents and can bring multiple suits. A motion to dismiss might resolve each suit, but it is limited to the individual suit, and repetitive filing increases the cost to the defendant. Second, patent shoppers can deliberately acquire patents where the shopper can make at least a colorable argument that the patent relates to the defendant's activities, making it difficult to win a motion to dismiss. Finally, patent shoppers can seek to acquire vague or ambiguous patents which might be more likely to survive a motion to dismiss because there may be at least some weak argument that the patent can be interpreted in the direction of the defendant's activities.

Doctrines Limiting Scope: The coverage of a patent is, as a theoretical matter, limited by what the inventor has actually invented, what the inventor has disclosed in the text of the patent, and what has previously been disclosed in the prior art. This limits the availability of patents quite significantly. Most companies will, therefore, only have patents related to what they invented and will only be able to litigate against defendants practicing those inventions. Not so for patent shoppers. Because patent shoppers can acquire patents on a wide variety of topics, patent shoppers can avoid limits build into individual patents by casting a net across a multitude of patents.

Doctrines Invalidating Patents: Many granted patents are invalid.²⁶⁹ A study of invalidity rates found that courts held 46% of litigated patents to be invalid,²⁷⁰ and

267. E.g., D. Rosenberg & S. Shavell, *A Model in Which Suits Are Brought for Their Nuisance Value*, 5 INT'L REV. L. & ECON. 3, 3 (1985).

268. *Id.* at 12.

269. See, e.g., Leslie, *supra* note 88, at 105–06. Some literature argues that invalid patents are actually not a problem because “the overwhelming majority of patents are never litigated or even licensed . . . it is much cheaper for society to make detailed validity determinations [only] in those few cases [where patents are litigated] than to invest additional resources examining patents that will never be heard from again.” Lemley, *supra* note 73, at 1497; Lemley & Shapiro, *supra* note 30, at 75.

270. John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998).

older studies suggest this number is even higher.²⁷¹ If a patent is thought to be improperly granted and in fact invalid, it can be challenged in court.²⁷² A powerful defense for a company worried about holdup, for example, is to argue that the plaintiff's patent is invalid. Invalidity is less powerful against patent shoppers who can specifically search for patents that are likely to be valid, or who can assert multiple patents in the hopes that at least one is valid. For example, if the likelihood that any particular patent will be found to be invalid is 50%, a plaintiff with one patent to assert has a 50% chance of losing on the issue of validity. By contrast, a shopper who owns (for example) ten patents overlapping to cover a particular technology faces a much smaller chance that all ten patents are invalid.²⁷³ Although it is not always possible to predict whether or not a patent is valid before litigation, the shopper may be able to do some preliminary due diligence on the patents and bring only the most likely to be valid to litigation. Non-shoppers have no such recourse and only two choices: bring litigation using the one patent that they own, even if this patent is likely to be invalid, or avoid litigation entirely.

Policy Changes Altering Substantive Law: If substantive patent law is changed in ways that weaken patents, as is sometimes suggested as a way to combat PAEs, it will have an attenuated effect on patent shoppers (the target of the law) and a far stronger effect on non-shoppers such as small innovators. Consider the following example relating to a hypothetical change in patent law that narrowed patents.²⁷⁴ Narrowing patents will have less of an impact on shoppers than small innovators because, although narrowing patents will decrease the number of patents from which shoppers can select, they will still often be able to select good patents for litigation. By contrast, if the one patent owned by a small innovator is narrowed, in some instances the infringing behavior may fall entirely outside of the patent, and the shopper will not be able to enforce the patent at all. The diagram below illustrates this advantage. Circles represent patent scope, and the star represents the infringing behavior. In the top row, with patents of the initial breadth, both shopper and innovator have patents that cover the infringing behavior, though the shopper

271. *Carter-Wallace, Inc. v. Davis-Edwards Pharmacal Corp.*, 443 F.2d 867, 872 (2d Cir. 1971) (“The bald fact is that more than 80% of patent infringement actions on appeal result in a determination that the patent sued upon is invalid.”).

272. Although only if there is litigation or “a substantial controversy, between parties having adverse legal interests, of sufficient immediacy and reality to warrant the issuance of a declaratory judgment.” *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118, 127 (2007).

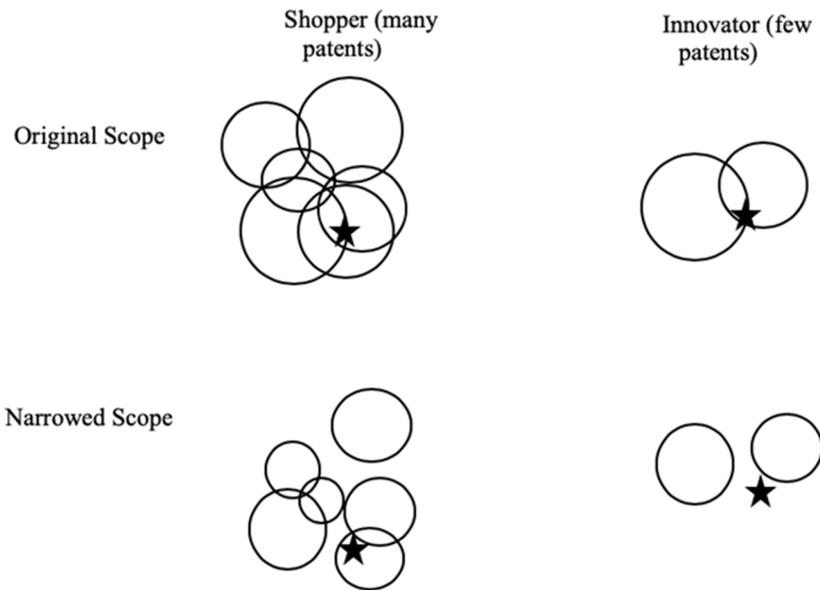
273. This assumes that the probability of invalidity is independent for each patent, which will not necessarily be a correct assumption when the patents cover similar technologies.

274. This is hypothetical, but frequently suggested. *See, e.g.*, Alison E. Cantor, *Using the Written Description and Enablement Requirements to Limit Biotechnology Patents*, 14 HARV. J.L. & TECH. 267, 290 (2000); Janice M. Mueller, *The Evolving Application of the Written Description Requirement to Biotechnological Inventions*, 13 BERKELEY TECH. L.J. 615 (1998); Sean B. Seymore, *Heightened Enablement in the Unpredictable Arts*, 56 UCLA L. REV. 127, 154 (2008); Emanuel Vacchiano, *It's a Wonderful Genome: The Written-Description Requirement Protects the Human Genome from Overly-Broad Patents*, 32 J. MARSHALL L. REV. 805, 808 (1999).

has more patents that cover the behavior and the behavior sits squarely inside the patent's scope, rather than towards its edge. In the second row, the breadth of all patents is narrowed. The patent shopper still has a patent covering the infringing behavior, though the behavior is now towards the edge of the patent's scope. By contrast, the infringement now falls outside of the innovator's patent.

This is a hypothetical, and reality does not work so neatly. Policies to weaken patents, such as narrowing patents, will have *some* effect on patent shoppers. Weaker patents will result in increased prices and competition to acquire the remaining good patents, higher information costs to seek these patents out, and a reduced number of patents that are useful in enforcement actions. These issues all impact patent shoppers.

Effect of Narrowing Patents on Patent Shopping Behavior



3. Crafting Policy for Patent Shoppers

Existing safeguards will be less effective against patent shoppers who can “shop around” the rule. Thus, to effectively alter the behavior of shoppers, policy must target either the shopping behavior itself or its predicates. An outright ban on shopping might be possible, perhaps by limiting alienability of claims or preventing the buyer of a patent from seeking a remedy for infringement that occurred or began prior to the patent owner's acquisition. However, an outright ban is probably not desirable because not all shoppers are bad actors, and many may have positive effects. Moreover, limiting alienability of claims or ability to sell patents would be hugely problematic for inventors who want to license the patent to others with

expertise in commercializing the invention or small companies who cannot easily finance litigation and must obtain financing from another source.

However, because patent shoppers do often behave in problematic ways and have certain advantages in litigation that may facilitate such behavior, a party's ability to shop should be a red flag that triggers a variety of procedural measures to minimize the shopper's ability to use their patent abusively. These measures are explored below. Each targets a particular problem common to patent shoppers (holdup, nuisance suits, or net loss of money for innovation) and proposes measures that will reduce the likelihood that a patent shopper will be able to cause those problems.

a. Reducing the Ability of Shoppers to Holdup Innovators

Patent shoppers have a particular ability to holdup innovators because they have an informational advantage. The shopper knows about an infringing behavior and specifically purchases the infringing behavior in order to create a holdup situation; meanwhile, the innovator is ignorant of these actions until the patent shopper chooses to ask for money. The most appropriate and effective policy response to this problem is to decrease the information asymmetry—for instance by requiring additional disclosure and creating a waiting period to allow the innovator to respond to the disclosure without immediate threat of suit. The waiting period gives the innovator an opportunity to redesign any infringing products so that, should the innovator in fact infringe, the innovator will face damages for past infringement but not the threat of future holdup. The waiting period additionally places any pre-litigation negotiation on a more even footing and allows potential defendants to challenge the patent's validity in an *inter partes* review proceeding if applicable. The mechanism to obtain additional disclosure and a waiting period are described below.

If a patent shopper with known aggressive enforcement tactics buys a patent, companies pay attention. Companies are in the practice of reviewing patents held by entities who may sue so that the companies may take various actions to avoid suit if possible and redesign products if not. However, companies are generally unable to figure out if a patent shopper has acquired a patent that may be relevant to them. This occurs for two reasons. First, patent shoppers are notoriously opaque about patent ownership, and there are no rules requiring disclosure of patent acquisition. Second, even if companies do find out about a relevant patent acquisition, there may not be time to respond if the patent shopper chooses to enforce immediately. Both of these issues can be resolved through policy changes.

There have recently been several efforts to require disclosure of patent assignees and, in some versions, disclosure of patent acquisition. The USPTO proposed a rule titled "Changes to Require Identification of Attributable Owner"²⁷⁵

275. Changes to Require Identification of Attributable Owner, 79 Fed. Reg. 4105 (Jan. 24, 2014) (to be codified at 37 C.F.R. pt. 1).

which would have required disclosure of “titleholders,” “enforcement entities,” “ultimate parent entities,” and “hidden beneficial owners.”²⁷⁶ Attributable owners would have to be identified at several periods, including filing, issue, and payment of maintenance fees.²⁷⁷ The PTO ultimately withdrew the rule in the face of concerns that the changes required overly broad and expensive disclosure at numerous time periods, but as the disclosure was not linked to enforcement, the identity of parties enforcing a patent would still not be clear.²⁷⁸ Other policy efforts have been made to encourage disclosure including the Innovation Act, which required parties filing suit to disclose certain ownership details,²⁷⁹ and the somewhat similar End Anonymous Patents Act,²⁸⁰ Patent Abuse Reduction Act,²⁸¹ Patent Transparency and Improvement Act,²⁸² and Patent Litigation and Innovation Act.²⁸³ None of these Acts passed, but they, along with the PTO proposed rule, reflect a broad consensus that disclosure is important and needed, but the devil is in the details.

This Article proposes a narrower form of disclosure tied specifically to enforcement. Specifically, attributable owners of patents should be disclosed at least one year prior to litigation, with exceptions for changes of ownership occurring within a year²⁸⁴ of enforcement made the normal course of business that are not related to acquisition of the patent (for example, if a company owning a patent merged with another company). The advantage of tying disclosure to enforcement is that it reduces the cost of disclosure because it will not be necessary for the vast majority of patents that are not enforced. It also focuses disclosure on time periods where it will be most useful.

Additionally, it creates a built-in waiting period between acquisition and enforcement. If a patent shopper purchases a patent, even if it discloses ownership immediately, it will have to wait a year before enforcing the patent. This gives potential defendants the opportunity to search for sales of patents that might be relevant to their products or processes and provides these companies the opportunity to obtain the information at least a year before any enforcement action can be brought. Companies, therefore, have a period of time to find and implement work-arounds if possible, negotiate without the threat of immediate holdup, or to ask the PTO to review the validity of the patent in an *inter partes* review action.

276. *Id.* at 4110.

277. *Id.* at 4106.

278. Nathan P. Anderson, *Striking a Balance: The Pursuit of Transparent Patent Ownership*, 30 BERKELEY TECH. L.J. 395, 420 (2015); *see also* Robin Feldman, *Transparency*, 19 VA. J.L. & TECH. 271, 276 (2014).

279. Innovation Act, H.R. 3309, 113th Cong. § 4 (2013).

280. End Anonymous Patents Act, H.R. 2024, 113th Cong. § 2(e)(5) (2013).

281. Patent Abuse Reduction Act of 2013, S. 1013, 113th Cong. (2013).

282. Patent Transparency and Improvements Act, S. 1720, 113th Cong. § 3(b)(1) (2013).

283. Patent Litigation and Innovation Act of 2013, H.R. 2639, 113th Cong. (2013).

284. The ideal waiting period is an empirical question.

This policy would disadvantage patent shoppers, in that it would take away the potential threat of holdup and any advantage of secrecy. However, even if the infringer is able to redesign products to avoid infringement going forward, the patent shopper will be able to obtain damages for past infringement. Therefore, the patent is still valuable. It is most equitable to give patent shoppers damages for past infringement but not allow them to extract rent for holdup if that holdup is avoidable through designing-around. Patentees should get the benefit of their invention and of the scope they have obtained in the patent but not the benefit of informational asymmetry that capitalizes on an infringer's sunk investment; that is outside of the reward intended to be provided by the patent system.

A variant on the disclosure policy would be to require public auctions of all patents. This system might ask patent owners to list their patents on a public exchange if they were willing to sell and would disclose the name of the eventual buyer and the price at which the patent is bought. Though this is significant deviation from the current world of patent sales, public disclosure of patent sale prices have been discussed in other contexts as a way to increase to “rationalize patent transactions” and it would make clear to “the world at large what the normal price is for patent rights,” as patent prices are currently very arbitrary.²⁸⁵ Public patent sales are also thought to increase the efficiency and transparency of the patent market.²⁸⁶

In the context of patent shoppers, public patent sales would essentially make everyone a patent shopper. It would significantly reduce the ability of traditional patent shoppers to capitalize on information asymmetries because there would be little remaining informational advantage available. It would additionally give companies that might be defendants in infringement suits the ability to buy the patent directly from the inventor instead of the less efficient system of having a patent shopper threatening suit as a middleman. Finally, it would allow small innovators to signal that they are serious about enforcement. Small innovators might not have sufficient financing to litigate an infringement action, and thus, their patents are sometimes ignored by infringers, causing the small innovator to turn to a patent shopper for help enforcing the patent. If small innovators could signal they were preparing to sell the patent to a shopper by placing the patent on the public exchange, infringing companies might be willing to settle directly with the small innovator without the need for the patent shopper middleman.

b. Preventing Nuisance Suits

Nuisance suits or demand letters—the practice of asking for settlement or payment for infringement that is not actually happening or of a patent that is almost certainly not actually valid—has little redeeming value. Patent shoppers may be

285. Mark A. Lemley & Nathan Myhrvold, *How to Make a Patent Market*, 36 HOFSTRA L. REV. 257, 258 (2007).

286. Michael Risch, *Patent Portfolios As Securities*, 63 DUKE L.J. 89, 93 (2013).

more prone to nuisance actions because they can acquire patents that are particularly suited to these actions because, for example, they are vague or they facially cover technology used by a wide range of entities (even if the patent is invalid). Further, patent shoppers can acquire many patents so they can file suit after suit, requiring continuous defense.

The measures proposed above increased disclosure and a waiting period, will help reduce nuisance suits. They will prevent situations such as one where a patent shopper created dozens of subsidiary companies and used the subsidiaries to send out demand letters. “Some of the small businesses received letter from more than one subsidiary across time . . . this type of approach can result in multiple payments to what is essentially the same entity.”²⁸⁷

Further policy measures can also help, particularly those tailored to preventing nuisance suits caused by patent shoppers’ access to large numbers of patents. Specifically, this Article proposes a system to manage multiple suits with different patents by the same attributable owners. If one attributable owner filed many suits against the same target, the filing burden should be heightened. These changes would kick in at a particular suit threshold, for example, the fifth suit by the same attributable entity against the same defendant within some period of time. After this threshold, there could be heightened filing requirements for the complaint, for example, requiring the plaintiff to file full infringement contentions at the same time as the complaint.²⁸⁸ This would accomplish two things. First, it would increase the expense of filing suit, a possible deterrent. Second, it would give the defendant more information earlier in the suit, helping the defendant make an informed decision about whether or not to settle. Lack of information early in a suit is a key component of nuisance-filer’s strategy. As described by Robin Feldman:

[A] patent holder can file suit alleging infringement of a particular patent without specifying much more. This can impose a series of costs on the target company, which must try to analyze all of the claims in the patent, and all of its own products and activities, to look for any plausible reason for the allegation. Moreover, the cost to challenge a single patent in court can range from \$600,000 to \$6 million As a result, a patent holder can launch an attack on a target for a minimal expenditure, offering to settle below what it would cost the target to challenge the demand, or in some cases below what it would cost to fully analyze the demand.²⁸⁹

Heightened pleading requirements would not entirely eliminate this problem, but by providing additional information on the particular claims allegedly infringed and the product allegedly infringing, it would reduce the cost for the defendant to analyze the complaint. Additionally, if the patent shopper has already filed multiple

287. Feldman, *supra* note 279, at 293.

288. In 2015, the Federal Rules of Civil Procedure were amended to heighten pleading standards in patent cases, however, the precise contours of this standard are still being determined by the courts. *See, e.g.,* Disc Disease Solutions, Inc., v. VGH Sols., Inc., 888 F.3d 1256, 1258–59 (2018).

289. Feldman, *supra* note 279, at 287–88.

suits, the potential that the current suit is a nuisance suit or otherwise abusive is higher. Therefore, it is more acceptable to place additional burdens on the patentee.

c. Improve Return to Innovators

If patent shoppers buy a patent for a small amount of money and then sue an innovative company and obtain a significant damage award, the shopper takes money from an innovator with no commensurate returns to another innovator. There is, therefore, a net loss of money to the innovation system. This section proposes policy measures to improve returns to the initial innovator (patentee) so that more money stays in the innovation system and less is siphoned out to the middleman.

As discussed above, disclosure will help. As the practice of patent acquisition has become more prominent, an increasing number of inventors are familiar with the strategy. Therefore, if a patent holder is approached by a well-known patent shopper, she is more likely to ask for a higher price since she may assume the shopper is seeking the patent in anticipation of litigation. Thus, it would be helpful to require patent shoppers to disclose their attributable owners to the patent seller prior to purchase.

Further, policy could require that patent acquirers (seeking to purchase patents in anticipation of litigation) disclose any potential litigation targets to patent sellers in order to avoid information asymmetry in subsequent bargaining and to potentially obtain a more equitable reward for the seller. However, reducing the bargaining power of shoppers in this manner might prove to be an excessive discouragement to patent acquisition, hampering the market for buying and selling patents, which might, in turn, reduce incentives for innovation.

Another method to improve returns to innovators in a world of patent shoppers is to treat patent acquisition like contingent fee litigation. Tort law has grappled with the problem of personal injury lawyers seeking cases and then taking a problematically high percentage of any damage award.²⁹⁰ Resultantly, many states have responded by placing caps on the percent of any damages that may go to the lawyer.²⁹¹ Translated to the patent context, this sort of policy might dictate that some set percentage of enforcement revenue goes to the original inventor and that the inventor has some control over the enforcement strategy. This would ensure that an equitable amount of revenue returns to the original inventor and might also, by allowing the inventor some say in enforcement decisions, mitigate some of the most egregious types of enforcement.²⁹²

290. This has been discussed extensively in the context of contingency fee tort litigation. Some of this discussion is summarized in Lester Brickman, *Contingency Fee Abuses, Ethical Mandates, and the Disciplinary System: The Case Against Case-by-Case Enforcement*, 53 WASH. & LEE L. REV. 1339, 1340 (1996).

291. Albert Yoon, *Damage Caps and Civil Litigation: An Empirical Study of Malpractice Litigation in the South*, 3 AM. L. & ECON. REV. 199, 200 (2001).

292. Balganes, *supra* note 231, at 725.

However, this strategy also has disadvantages. Inventors might prefer the outright sale of a patent to avoid risk and obtain money up front. It would be challenging to determine the optimal fee cap, as reasonable minds will no doubt differ on the notion of what is equitable. Further, the optimal fee cap might be different in different industries and under different conditions, posing additional challenges to its implementation. In addition, fee caps on enforcement of acquired patents would have odd effects on corporate mergers and acquisitions. When Company *A* acquires Company *B*, it is common for *A* to acquire *B*'s patents as well. If *A* later enforced a patent from *B*, would *A* have to give proceeds back to the original inventors, likely employees of *B* (and perhaps now employees of *A*)?

Finally, if incentives, disclosure, and caps are not sufficient to improve returns to innovators, a direct approach would be to tax damage awards if the plaintiff is a company that does not innovate. The money derived from the tax could then be reinvested in various measures to promote innovation, such as grants to small companies or NIH funding. The logistics, of course, would be difficult. For example, it would be difficult to differentiate between damage awards to plaintiffs who do not innovate and damage awards to companies that do innovate but that funnel profit, such as damage awards to shareholders instead of R&D. Further, taxes are rarely a politically palatable option. However, with proper design, a tax scheme would effectively return money to innovators.

CONCLUSION

Patent law and policy are heavily influenced by archetypes of the players in the system. The literature has built up rhetoric and mythos around characters, such as the inventor,²⁹³ the audience,²⁹⁴ and the infringer.²⁹⁵ The narrative of the traditional

293. Mark A. Lemley, *The Myth of the Sole Inventor*, 110 MICH. L. REV. 709, 709 (2012) (explaining that the “theory of patent law is based on the idea that a lone genius can solve problems that stump the experts” but ultimately rejecting this narrative.); see also Cotropia, *supra* note 29, at 54–55 (“We enjoy stories of independent inventors, working against all odds to provide society with amazing technological breakthroughs The patent system has traditionally taken the individual inventor motif to heart and seen patents as a vehicle to both fuel individual inventors and protect them from large corporations.”).

294. Jeanne C. Fromer & Mark A. Lemley, *The Audience in Intellectual Property Infringement*, 112 MICH. L. REV. 1251, 1264 (2014) (“the PHOSITA—the expert—is still the audience through whose eyes the intrinsic evidence is examined. But just who is the PHOSITA?”); Mark D. Janis & Timothy R. Holbrook, *Patent Law’s Audience*, 97 MINN. L. REV. 72, 74 (2012) (“[I]t was not unusual for popular newspapers or magazines to report at length on patent decisions, ostensibly for an idealized readership of ingenious Yankee mechanics or yeoman farmers The fact is that patent law is probably much more remote from its putative end users than patent law rhetoric conventionally admits.”).

295. For example, the narrative of the patent infringer, particularly whether the infringement was innocent, and whether the resultant product or service was socially beneficial, has been discussed at length, as these distinctions are important components of the moral case for various patent defenses and remedies. See, e.g., Peter Lee, *The Accession Insight and Patent Infringement Remedies*, 110 MICH. L. REV. 175, 202–07 (2011); William F. Lee & Lawrence P. Cogswell, III, *Understanding and Addressing the Unfair Dilemma Created by the Doctrine of Willful Patent Infringement*, 41 HOUS. L. REV. 393, 395–96 (2004); Janice M. Mueller, *No “Dilettante Affair”*: Rethinking the

ex ante model of patent use is perhaps among the most powerful preconceptions that guide patent law.²⁹⁶ And yet, the traditional model is not an accurate description of how many plaintiffs use the patent system. Rather, as described herein, the shopping *ex post* model better fits the behavior of key classes of plaintiffs, such as patent assertion entities and large companies.

As compared to the traditional model, the shopping model shifts the story of patent use. The traditional model begins with acquisition of a patent, followed by infringement, and requires the patent drafter to predict where and how infringement will occur. By contrast, the shopping model begins with infringement, followed by acquisition of a patent to fit the infringement, and allows the plaintiff to choose a patent that responds to infringement. In the traditional model, patents are used in a forward-looking manner. In the shopping model, patents are wielded looking backwards. The traditional model is passive; the patent holder must wait for infringement. The shopping model is active; the patent holder may seek out infringement. The traditional model holds tightly to the link between invention, infringement, and enforcement, while the shopping model disaggregates these actions.

In this manner, understanding shopping improves our comprehension of the patent system as a whole. It paints a new picture of patent enforcement, which may help explain several previously puzzling empirical observations. For example, prior work has found that patent litigation involving multiple patents increases the chance that the patentee will prevail with respect to each *individual* patent.²⁹⁷ Patent litigation involving multiple patents may be more likely to have been brought by shoppers (who have access to multiple patents). Therefore, they may have been able to curate the asserted patents to increase the likelihood that each individual patent will win.

By adding the shopping narrative to the current array of stories about inventors, audience, and infringers, I hope to more accurately describe how patents are used today, help craft better policy, and reorient the extensive literature about the normative effects of patent assertion entities and patent portfolios.

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Experimental Use Exception to Patent Infringement for Biomedical Research Tools, 76 WASH. L. REV. 1, 3–5 (2001).

296. See Cotropia, *supra* note 29, at 55.

297. John R. Allison, Mark A. Lemley & David I. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1769, 1796 (2014).