

PATENT SHOPPERS

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Forum shopping requires the plaintiff to make a strategic choice of forum in order to maximize the chance of a favorable outcome. This Article introduces the concept of “patent shopping,” where the plaintiff makes a strategic choice of *patent* in order to obtain the best *facts* and *substance* in a case in order to maximize the chance of a favorable outcome. Traditionally, 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. Most patent shoppers are “patent trolls” (formally known as patent assertion entities (“PAEs”)) who evaluate large numbers of patents that are available for sale and then select patents that can be most profitably enforced. Owners of large patent portfolios may also 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 all public PAEs to provide empirical evidence that these entities pursue patent shopping as a business strategy. Patent shopping is a novel way to view some of the most important players in the patent system, and adds a new analytic perspective to the broad literature on patent trolls. In particular, patent shopping predicts that many policy reforms targeted at reigning in patent trolls will be counterintuitively unsuccessful, because trolls will be able to “shop around” the reform. Rather, this Article argues that policy aimed at shopping behavior itself will be most effective. The concept of shopping for good claims is not unique to 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

“American Dream Meadowlands” is a plot of land in New Jersey that will soon to be the site of an enormous mall where shoppers can browse over 500 stores and find all manner of goods and services.¹ The American penchant for shopping does not stop at malls. The notion of shopping – seeking out precisely the right thing from an assortment of options – is also a legal technique. “Forum shopping” refers to a method “of choosing the most favorable jurisdiction or court in which a claim might be heard.”² 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. The patent shopping model provides a novel description of the behavior of the largest and most consequential players in the patent system today: patent trolls (more formally known as “patent assertion entities” (PAEs)) and companies with large patent portfolios. Though this Article focuses on patent law, the concept of claim shopping is applicable to many areas of law, and thus this Article has implications beyond patents.

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. 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

¹ <http://www.nytimes.com/2015/10/03/nyregion/dream-of-a-mall-starts-to-rise-out-of-a-meadowlands-nightmare.html>

² BLACK’S LAW DICTIONARY 666 (7th ed. 1999). 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 (2011).

³ *E.g.*, AMY LANDERS, UNDERSTANDING PATENT LAW § 1.01 (2012).

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

⁵ 35 U.S.C. § 271.

invention. The innovator awaits infringement and will file suit only if an instance of infringement covered by their patent arises. 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. 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 it is widespread or because the infringers are deep-pocketed. Shoppers can then obtain a patent that scores high in the relevant metrics, including likelihood of surviving a validity challenge or the breadth of behavior covered by the patent.

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. Further, shopping divorces patent enforcement from the inventive process, a link that is implicit in the traditional model. Moreover, the ability to select gives shoppers a substantial advantage over innovators in the context of pursuing infringers.⁶ This advantage has important consequences for policy reform. Many proposals for policy reform seek to attack litigants by weakening patents or reducing enforcement opportunities.⁷ Shopping theory explains that these proposals will not be effective because shoppers can “shop around” the policies by finding patents and enforcement opportunities that remain viable. In troubling contrast, parties that are unable to shop, such as small inventors, *will* be harmed by these policies. This Article demonstrates 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.⁸

This Article proposes the patent shopping model and also provides empirical substantiation for the model. As many shoppers are PAEs, this Article conducts a qualitative analysis of the financial statements of all public PAEs and finds substantial evidence that PAEs are engaged in patent shopping. 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,

⁶ Section V, *infra*.

⁷ Section VI, *infra*.

⁸ Section VIII, *infra*.

notorious PAE Erich Spangenberg⁹ 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 patent owner.¹⁰ Taking advantage of this information asymmetry, Spangenberg acquired the patent for approximately \$70,000 and immediately filed suit against twenty-one car companies.¹¹ Twenty companies settled the lawsuit for undisclosed sums, and the remaining defendant, Hyundai, lost the case and was found liable for \$34 million dollars in damages.¹² 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.”¹³ 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.¹⁴ Shoppers capitalize on this landscape by surveying a broad array of infringement and choosing the leading opportunity. 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.¹⁵ 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.”¹⁶

Part I lays out the traditional theory of patent use. Part II discusses patent shopping, beginning with a background section on the predicate conditions needed for patent shopping, followed by a discussion of PAEs, the most common type of patent shopper. Part III then lays out the theory of patent shopping. Part IV provides qualitative evidence from review of the SEC statements of all public

⁹ David Segal, *Has Patent, Will Sue: An Alert to Corporate America*, N.Y. Times (July 13, 2013) available at <http://www.nytimes.com/2013/07/14/business/has-patent-will-sue-an-alert-to-corporate-america.html> (“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.”).

¹⁰ Defendant Hyundai Motor America’s Motion for Remittitur, Dkt No. 590 at 7, Orion IP, LLC v. Hyundai Motor America, 6:05-cv-00322 (E.D. Tex. June 15, 2007).

¹¹ *Id.*

¹² Orion IP, LLC v. Hyundai Motor America, 605 F.3d 967, 972 (Fed. Cir. 2010).

¹³ <http://www.forbes.com/asap/2002/0624/044.html>

¹⁴ Section I.A-D, *infra*.

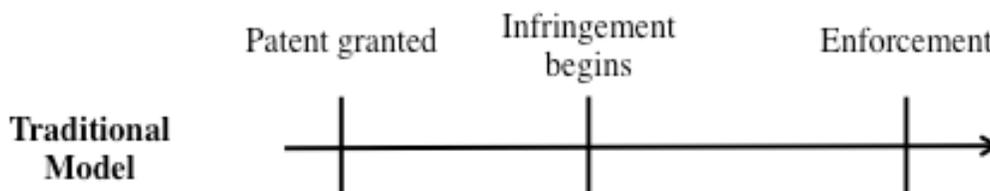
¹⁵ *Cite.*

¹⁶ See, Richard Abel, *The Real Tort Crisis – Too Few Claims*, 48 OHIO ST. L.J. 443, 447 (1987) (describing a “crisis of underclaiming.”).

PAEs to demonstrate that many PAEs pursue a patent shopping strategy. Part V 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 VI turns to analysis of 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. Part VI concludes with a discussion of policy. First, it explains why presently proposed policy will counterintuitively not affect patent shoppers. It then proposes methods of targeting patent shopping behavior, should that be desirable.

I. THE TRADITIONAL THEORY 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.¹⁷ 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.¹⁸ The model begins

¹⁷ 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 V-XV* (2008). See also JANICE MUELLER, *PATENT LAW ix* (2013) (beginning with chapters on issues of patent prosecution, followed by a chapter on patent infringement and a then a chapter on remedies for patent infringement).

¹⁸ Christopher A. Cotropia, *The Individual Inventor Motif in the Age of the Patent Troll*, 12 YALE J.L. & TECH. 52, 54-55 (2009).

with her toiling in her garage, developing a brilliant new invention.¹⁹ 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,²⁰ so the patent attorney works to draft a patent that will give the inventor the broadest scope of protection possible.²¹ Generally, patent drafting manuals recommend considering what paths competitors might take to work around the patent, or how later iterations of the technology might develop, in order to draft a patent that covers these spaces.²² 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,²³ she may sue the third party²⁴ and obtain, depending on the circumstances, an injunction or damages.²⁵ 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.²⁶ 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

¹⁹ *Id.* at 54.

²⁰ *See, e.g.*, *In re Hogan*, 559 F.2d 595, 606 (CCPA 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).

²¹ *See, e.g.*, CARL BATTLE, *THE POCKET LEGAL COMPANION TO PATENTS* (2013) (“The broadest claim should describe a generalized version of the invention...”); *US INTELLECTUAL PROPERTY LAW AND POLICY*, 161 (ed. Hugh C. Hansen, 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 PRACTICE GUIDE FOR SCIENTISTS AND ENGINEERS*, 133-34 (ed. Nadya Reingand, 2012). *See also* *Brenner v. Manson*, 383 U.S. 519, 533 (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...”).

²² *See, e.g.*, RONALD D. SLUSKY, *INVENTION ANALYSIS AND CLAIMING: A PATENT LAWYER'S GUIDE*, 30-31(2007); Ash Tankha, *PATENT YOUR IDEA* 50 (2012).

²³ 35 U.S.C. § 271(a).

²⁴ 35 U.S.C. § 281.

²⁵ 35 U.S.C. § 283-84.

²⁶ *E.g.*, Kuen-Hung Tsai & Jiann-Chyuan Wang, *External Technology Acquisition and Firm Performance: A Longitudinal Study*, 23 J. BUSINESS VENTURING 91, 94 (2008).

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.²⁷ Further, under the traditional model, the infringer is presumed to be a competitor of the patentee. Under these conditions, it is quite likely 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.²⁸ Additionally, the link between patent enforcement and innovation creates a reputational component to enforcement. Patentees who enforce more than is the norm in their industry might get a reputation as difficult and uncooperative.

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 plaintiff²⁹) during litigation. 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. 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. It is common in litigation for the defendant to challenge a patent's validity, and common for this argument to succeed. A plaintiff may be in 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.

It is a risk, however, that plaintiffs in the traditional model of patent use must take. Given that the patent is already written, as is any potential prior art, 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 limits on future enforcement created by the words of the patent as written are the quintessence of the traditional view of patent use.

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.” Prospect theory attempts to explain

²⁷ *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 (2011).

²⁸ Cotropia, *supra* note 18, at 61-62.

²⁹ 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.

the practice of granting patents with “a scope that reaches well beyond what the reward function would require.”³⁰ Prospect theory argues that broad patents are socially beneficial because they enable the patent holder to “coordinate the search for technological and market enhancement of the patent” which “increases the efficiency with which investment in innovation can be managed.”³¹ 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.

II. A MARKET FOR PATENTS

The traditional, *ex ante*, theory of patent use does not fully describe the behavior of certain classes of plaintiffs. Rather, some classes of plaintiffs engage in patent shopping, an *ex post* type of patent use. However, patent shopping can only occur under several predicate conditions. This Section describes those conditions.

In order to have shopping you must, of course, have a market. 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. These characteristics create a pool of patents and infringement actions for sale: a market for patent shoppers. The discussion below explores a potpourri of unituitive 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 veritable cornucopia 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.³² Have

³⁰ 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. 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.” Oddi, *supra* note **Error! Bookmark not defined.**, at 274. There is also an “economic premise that the ‘just’ monopoly reward provided is (or should be) proportional to the benefit received by society.” *Id.*

³¹ Oddi, *supra* note **Error! Bookmark not defined.**, at 276.

³² U.S. Patent No. 6,360,693 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*:

you used a swing hanging from a tree? You were infringing a patent.³³ Have you used a scanner and then emailed the scanned document to yourself or someone else? You were infringing a patent.³⁴ Do you use Wi-Fi? You were infringing a patent.³⁵ Do you have a smartphone? You might be infringing hundreds of thousands of patents.³⁶

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 patents³⁷ on basic technologies. There are many causes of poor quality patents.³⁸ Much of the criticism focuses on the small amount of time allocated to examining each patent – an average of eighteen hours per patent³⁹ – and problematic incentives in the Patent Office.⁴⁰

Learning from the Animal Toy Patent, IP WATCHDOG (Oct. 6, 2010), <http://www.ipwatchdog.com/2010/10/06/animal-toy-patent/id=12711/>. In addition, this patent was certainly granted erroneously and was not valid, even when it was in force.

³³ U.S. Patent No. 6,368,227.

³⁴ The owners of these patents have sought to widely enforce their patents. Steven Salzgren, *Did You Scan and Email That Document? You Might Owe \$1000 to a Patent Troll*, FORBES (Aug. 5, 2013), <http://www.forbes.com/sites/stevensalzgren/2013/08/05/did-you-scan-and-email-that-document-you-might-owe-1000-to-a-patent-troll/#1e85625328a8>.

³⁵ 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).

³⁶ Colleen Chien, *Predicting Patent Litigation*, 960 TEX. L. REV. 283, 287 (2011) (“250,000 patents cover smartphone technology.”).

³⁷ The number of patents is growing rapidly. Applications rose from 104,329 in 1980 to 356,943 in 2014. JAMES BESSEN & MICHAEL MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 69 (2008).

³⁸ Julie E. Cohen, *Reverse Engineering and the Rise of Electronic Vigilantism: Intellectual Property Implications of “Lock-Out” Programs*, 68 S. CAL. L. REV. 1091, 1177-80 (1995); Robert P. Merges, *As Many as Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 591 (1999).

³⁹ Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U. L. REV. 1, 2 (2001). See also Susan Graf, *Improving Patent Quality Through Identification of Relevant Prior Art: Approaches to Increase Information Flow to the Patent Office*, 11 LEWIS & CLARK L. REV. 495, 502 (2007); John R. Thomas, *Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties*, 2001 U. ILL. L. REV. 305, 314 (2001).

⁴⁰ See, e.g., Michael Frakes & Melissa Wasserman, *Does Agency Funding Affect Decisionmaking?: An Empirical Assessment of the PTO’s Granting Patterns*, 66 VAND. L. REV. 66, 80 (2013); Michael Frakes & Melissa Wasserman, *The Failed Promise of User Fees: Empirical Evidence from the U.S. Patent and Trademark Office*, 11 J. EMPIRICAL LEGAL STUDIES 602, 603 (2014).

Widespread infringement also occurs because it is difficult to figure out what technologies or actions are 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. There are often hundreds of thousands of patents that are relevant to a particular technology. Patentees can choose their own words (even if these are non-standard) to describe their inventions,⁴¹ so keyword searches may not be effective to find patents.⁴² For example, a patentee might describe ‘scissors’ as a ‘cutting device’ or ‘a handle having two blades attached.’ A manufacturer seeking to make scissors without infringing on a patent might attempt to search for patents with the word ‘scissors’ but, unless he is a very creative searcher, he is unlikely to find patents that substitute the word ‘scissors’ for ‘intersecting metal edges each capped by a plastic circle’ or the equivalent. Thus, the manufacturer is very likely to inadvertently infringe on these patents.

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 is often to the patentee’s advantage to inject some ambiguity into the patent.⁴³ Ambiguity can be advantageous to patentees because it allows them to make a wider variety of possible arguments after the patent is granted. However, it is then challenging for third parties to ensure that they do not infringe on a patent. For example, words such as “approach each other,” “close to,” “substantially equal,” and “closely approximate” “are ubiquitous in patent claims”⁴⁴ as are words like “about” or “substantially.”⁴⁵ If a patent claims scissors that are “substantially metal” do scissors that have metal blades and a plastic grip infringe? It may be impossible to know without a court decision. Thus, a third party may inadvertently infringe on a patent by misinterpreting an ambiguous phrase.

Widespread infringement occurs not only because many patents cover many

⁴¹ *E.g.*, Vitronics Corp. v. Conceptor, Inc., 90 F.3d 1576 (Fed. Cir. 1996) (“a patentee may choose to be his own lexicographer and use terms in a manner other than their ordinary meaning, as long as the special definition of the term is clearly stated in the patent specification or file history.”).

⁴² 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* (July 3, 2015), available at <https://blogs.law.harvard.edu/nplblog/2015/07/02/are-there-too-many-patents-to-search-a-response-ted-sichelman/> (arguing that it is feasible to conduct patent clearance searches).

⁴³ *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.”).

⁴⁴ *Deere & Co. v. Bush Hog, LLC*, 703 F.3d 1349, 1359 (Fed. Cir. 2012).

⁴⁵ *Enzo Biochem, Inc. v. Applera Corp.*, 599 F.3d 1325, 1336 (Fed. Cir. 2010) (holding that the claim term “not substantially interfere” was not necessarily indefinite.”).

different technologies, but also because many patents overlap to cover particular intellectual areas.⁴⁶ It is a common for several different parties to file overlapping patents covering one technology from different angles (called a ‘patent thicket’).⁴⁷ It is also common for companies to seek multiple overlapping patents to protect a product from all angles. 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.⁴⁸ 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. Companies in the business of commercializing a product may not have the interest or expertise to pursue infringers who are not direct competitors.⁴⁹ These same companies may fear the reputational costs of enforcement,⁵⁰ or may fear countersuit if they too are infringing patents.⁵¹ 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)⁵² due to many factors such as long pendency, complexity, and the need to hire expensive expert witnesses.⁵³ Thus, while tort lawsuits are often financed on a contingency fee basis, patent infringement (also a tort) has historically not been a candidate for

⁴⁶ E.g., John Duffy, *Rethinking the Prospect Theory of Patents*, 71 U. CHI. L. REV. 439, 443 (2004) (calling “overlapping exclusive rights” a “basic feature of patent law.”). See also Michael Heller & Rebecca 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 Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL’Y 309, 323 (2002) (“numerous and overlapping patents make it costly for a possible infringer to negotiate a license...”).

⁴⁷ Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard Setting*, in INNOVATION POLICY AND THE ECONOMY 120 (Adam Jaffe, Josh Lerner, and 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.”).

⁴⁸ Katherine Gaudry, *Evergreening: A Common Practice to Protect New Drugs* 6 (2011), <http://nrs.harvard.edu/urn-3:HUL.InstRepos:8965556>. 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, 328 (2012).

⁴⁹ Cite.

⁵⁰ Cite

⁵¹ Cite

⁵² AM. INTELLECTUAL PROP. LAW. ASSOC., REPORT OF THE ECONOMIC SURVEY 2003, at 22 (2003).

⁵³ Schwartz, *supra* note 56, at 338.

contingent fee financing.⁵⁴ Widespread infringement and consistent underenforcement are so common that in practice, companies in some industries simply “ignore patents,” making no effort to evade infringement.⁵⁵

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 themselves and claims for past infringement of a patent are fully assignable.⁵⁶ To illustrate, Company A has been infringing on Company B’s patent for 3 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 3 years of infringing behavior, even though the third party did not own the patent when the infringement occurred.⁵⁷ Alienability of claims allows innovators to monetize their patents through sale⁵⁸ and provides a legal mechanism for third parties to purchase and enforce patents.⁵⁹

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

⁵⁴ Schwartz, *supra* note 56, at 334.

⁵⁵ Mark A. Lemley, *Ignoring Patent Infringement*, 2008 MICH. ST. L. REV. 19, 22 (2008) (“both 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.”).

⁵⁶ David Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335, 350 (2014) (“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 Alliance, Inc., 240 F.3d 1016, 1017 (Fed. Cir. 2001).

⁵⁷ 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. 63, 72 (2011).

⁵⁸ *See, e.g.*, Alex Kozinsky, *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.”).

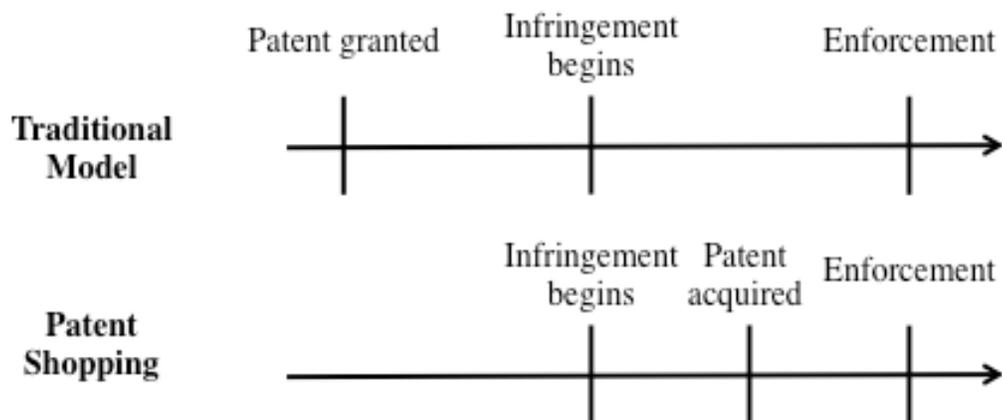
⁵⁹ *See* Lee Anne Fennell, 122 HARV. L. REV. 1403, 1413-14 (2009) (stating, in the context of non-practicing entities, that “the ability to use things that one owns to ‘extract money’ is of course the essence of alienability.”).

III. PATENT SHOPPING

As explored above,⁶⁰ 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 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.

This has significant consequences. First, plaintiffs for whom the shopping route is available are at an advantage in enforcing their patents as compared to plaintiffs for whom the shopping route is not available (primarily small companies). Second, the availability of shopping will skew the effect of certain types of policy targeted at reforming patent litigation, allowing shoppers to avoid much of the intended effect of the policy reform while small innovators operating according to the traditional model will bear the brunt of the effect.



⁶⁰ Section I.A, *supra*.

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,⁶¹ a particularly bitter competitor,⁶² or a widespread activity that infringes on a heavily patented area.⁶³ 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 works equally well 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

⁶¹ Lauren Cohen, Umit G. Gurun, & Scott Duke Kominers, *Patent Trolls: Evidence from Targeted Firms*, Harvard Business School Working Paper 15-002, 2 (August 7, 2014) (“We show that NPEs on average target firms that are flush with cash (or have just had large positive cash shocks).”).

⁶² For example, Apple and Samsung have been involved in a bitter patent fight for years. See Don Reisinger, *Samsung Wins Appeal in \$120M Fight with Apple* (Feb. 26, 2016), <http://fortune.com/2016/02/26/apple-samsung-patent-appeal/>.

⁶³ This happens. For example, smart phones are said to infringe on hundreds of thousands of patents. Chien, *supra* note 36, at 287 (“250,000 patents cover smartphone technology.”). See also Brian J. Love, *The Misuse of Reasonable Royalty Damages*, 74 MO. L. REV. 909, 932 (2009).

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.⁶⁴ 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 is expensive,⁶⁵ 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.⁶⁶ 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.”⁶⁷

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

⁶⁴ Cite

⁶⁵ Cite a number for court and for PTAB

⁶⁶ Cite.

⁶⁷ See, Richard Abel, *The Real Tort Crisis – Too Few Claims*, 48 OHIO ST. L.J. 443, 447 (1987) (describing a “crisis of underclaiming.”).

experience and expertise in evaluating patents and patent monetization opportunities.

IV. QUALITATIVE STUDY 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 shopping⁶⁸ and because qualitative research is often better suited to 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. These entities are called “patent assertion entities” (PAEs) and are a subset of the group colloquially known as “patent trolls.” In order to obtain evidence of patent shopping, data was gathered from a review of all 2015 SEC filings for public patent assertion entities.⁶⁹ 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.

A. Patent Assertion Entities

The term PAE refers generally to entities that do not develop or commercialize technology themselves, but instead make money by asserting patents in various, possibly socially detrimental, ways.⁷⁰ The PAE world is complex. PAE is a broad (overly broad) category that covers many different types of entities.⁷¹ PAEs are often divided according to the nature of their

⁶⁸ 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 Dataset: Descriptions and Analysis*, USPTO Working Paper No. 2015-2, 2 (2015) (explaining that recorded patent assignments are “executed (optionally) by an interested party...”).

⁶⁹ A list of public PAEs is available at: <https://www.rpxcorp.com/wp-content/uploads/sites/2/2015/12/RPX-Public-PAE-Report-Q3-2015-Final.pdf>

⁷⁰ Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP., MEDIA AND ENT. L.J. 611, 613 (2008).

⁷¹ For more information on the full taxonomy of PAEs, see Gwendolyn Ball & Jay Kesan, *Transaction Costs and Trolls: Individual Inventors, Small Firms and Entrepreneurs in Patent Litigation* 18 (Univ. Ill. Law & Econ., Working Paper No. LE09-004, 2009); Colleen Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1572 (2009); Christopher Cotropia, Jay Kesan & David Schwartz, *Patent Assertion Entities Under a Microscope*, 99 MINN. L. REV. 649, 658 (2014); Sara Jeruss, Robin Feldman, & Joshua Walker, *The America Invents Act 500: Effects of Patent Monetization Entities on US Litigation*, 11 DUKE L. & TECH. REV. 358, 364 (2014); Kristen Osenga, *Formerly Manufacturing Entities: Piercing the ‘Patent Troll’ Rhetoric*, 47 CONN. L. REV. 435, 437 (2014); Mark A. Lemley, *Are Universities Patent Trolls?*, 18 FORDHAM INTELL. PROP. MEDIA & ENT. L.J.

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.⁷² This Article is focused on the subset of PAEs who acquire and enforce patents: the patent shoppers.

These PAEs acquire patents from a variety of sources. PAEs may purchase directly from the inventor, or from a practicing entity that is not using a patent, or through bankruptcy proceedings. Scholars have suggested that PAEs strategically acquire patents, but have had limited direct evidence of this.⁷³ These PAEs are omnipresent in modern patent litigation, as studies have found that approximately two-thirds of PAE patents litigated in 2011-2012 were acquired.⁷⁴

PAEs acquire patents in a strategic way. Timo Fischer and Joachim Henkel⁷⁵ analyzed 392 patents acquired by 28 different PAEs to test the hypothesis that, “[b]y the very design of the PAE business model, PAEs are interested in patents on inventions that are or will be used by practicing firms.”⁷⁶ They found that PAEs acquired patents that lie in denser technology fields and had more forward citations and claims.⁷⁷ They also found that these patents had, on average, a broader scope as compared to the control group.⁷⁸ Fischer and Henkel explain this finding by reasoning that “[t]he broader the scope of the patent, the larger the number of products and process that, *ceteris paribus*, will infringe upon it.”⁷⁹ Thus, broader scope “entails a larger potential for licensing revenues.”⁸⁰ They also find that PAE-acquired patents are more likely have higher “technological quality, and thus...legal sustainability.”⁸¹

Similarly, Michael Risch studied patents owned by the most litigious PAEs to

611 (2008).

⁷² Described in John R. Allison, Mark A. Lemley, & Joshua Walker, *Patent Quality and Settlement Among Repeat Patent Litigants*, 99 GEO. L.J. 670, 684 (2010).

⁷³ See, e.g., Fiona M. Morton & Carl Shapiro, *Strategic Patent Acquisition*, 79 ANTITRUST L. J. 463, 467 (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”?* (2014) available at <http://ssrn.com/abstract=2520125>.

⁷⁴ PatentFreedom, <http://www.patentfreedom.com/about-PAEs/background>.

⁷⁵ Timo Fischer & Joachim Henkel, *Patent Trolls on Markets for Technology – An Empirical Analysis of NPEs’ Patent Acquisitions*, 41 RES. POL’Y 1519, 1519 (2012).

⁷⁶ *Id.* at 1522.

⁷⁷ *Id.* at 1526.

⁷⁸ *Id.* at 1527.

⁷⁹ *Id.*

⁸⁰ *Id.*

⁸¹ *Id.* at 1528.

respond to the “myth” that PAEs acquire patents that are “of low quality and not infringed” in order to extract nuisance settlements.⁸² He finds that “traditional patent quality measures imply at the very best that PAE patents look a lot like other litigated patents” and perhaps even that “PAE patents would appear to be of equal or higher quality.”⁸³ Another study of litigated patents, by Jonathan Ashtor, Michael Mazzeo, and Samantha Zyontz, looked at 1,751 cases decided between 1995 and 2011 that reached a decision on validity and infringement.⁸⁴ They compared the quality of patents asserted by PAEs and other plaintiffs and found that PAE patents had more forward citations and more claims (both rough proxies for patent quality), indicating “somewhat greater complexity” and potentially “more robust and meritorious claims of infringement.”⁸⁵

Scholars have studied not only PAE patent acquisition, but also PAE patent enforcement. In the game of patent litigation, PAEs behave differently from practicing entities. First, PAEs are not susceptible to traditional deterrents to patent litigation. When a practicing entity considers suing a competitor for patent infringement, it must consider whether the competitor has a patent portfolio that it could deploy against the practicing entity’s own products.⁸⁶ Firms in patent-dense technology areas often amass patent portfolios for just this purpose.⁸⁷ Thus, practicing entities fear that suing a competitor for infringement of one patent will lead the competitor to countersue for infringement of another patent.⁸⁸ PAEs, because they produce no products of their own, do not fear this type of countersuit.⁸⁹

Second, PAEs can obscure ownership of patents by creating shell companies.⁹⁰ It is difficult to find patents through keyword searches;⁹¹ thus, companies planning to commercialize a technology might attempt to avoid patent risks in part by reviewing the patent portfolios of known competitors.⁹² The PAE

⁸² Michael Risch, *Patent Troll Myths*, 42 Seton Hall L. Rev. 457, 462 (2012).

⁸³ *Id.* at 481.

⁸⁴ Jonathan H. Ashtor, Michael J. Mazzeo, & Samantha Zyontz, *Patents at Issue: The Data Behind the Patent Troll Debate*, 21 Geo. Mason L. Rev. 957, 969 (2014).

⁸⁵ *Id.* at 971.

⁸⁶ Deborah Platt Majoras, *A Government Perspective on IP and Antitrust Law*, 38 RUTGERS L.J. 493, 498 (2006).

⁸⁷ *Id.*

⁸⁸ *Id.*

⁸⁹ Although they are vulnerable to countersuits claiming that the asserted patent is invalid.

⁹⁰ 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*, 4 NYU J. INTELL. PROP. & ENT. L. 358, 372 (2014).

⁹¹ Janet Freilich, *Are There Too Many Patents To Search*, NEW PRIVATE LAW BLOG (July 2, 2015), available at <http://blogs.law.harvard.edu/nplblog/2015/07/02/are-there-too-many-patents-to-search-a-response-janet-freilich/>.

⁹² *Id.*

practice of creating new companies to hold patents makes this harder, increasing the likelihood that a company will invest substantial amounts of money commercializing a technology only to face a patent lawsuit brought by a PAE.⁹³

Third, PAEs have different motivations for patent litigation. PAEs litigate to monetize, that is, they bring patent infringement lawsuits in order to make money. 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),⁹⁴ 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.⁹⁵

PAEs can be divided into (at least) two categories according to their acquisition and litigation strategies. First, there are “big game hunter” PAEs,⁹⁶ those who seek to “strike it big in court. These entities think 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.”⁹⁷ 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.⁹⁸ Both types of PAEs can engage in patent shopping behavior.

PAEs have attracted a significant amount of policy attention, much of it negative. Policy makers are concerned about PAEs because they engage in hold-up behavior by waiting until a product has been developed and put on the market and then suing the product’s maker for patent infringement.⁹⁹ In the words of President Obama, PAEs “don’t actually produce anything themselves. . . . They are essentially trying to leverage and hijack somebody else’s idea and see if they can extort some money out of them.”¹⁰⁰

⁹³ *Id.* Note that some practicing entities also assign patents to holding companies for purposes of licensing and/or litigation.

⁹⁴ Colleen 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).

⁹⁵ 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*, NBER Working Paper Series 16431, 5 (2014) available at <http://www.nber.org/papers/w16431>.

⁹⁶ Bessen & Meurer, *Direct Cost of NPE Disputes*.

⁹⁷ Mark A. Lemley & Douglas Melamed, *Missing the Forest for the Trolls*, 113 COLUM. L. REV. 2117, 2126 (2013)

⁹⁸ *Id.*

⁹⁹ J.P. Mello, *Technology Licensing and Patent Trolls*, 12 B.U. J. SCI. & TECH. L. 388, 391 (2006).

¹⁰⁰ Gene Sperling, *Taking on Patent Trolls to Protect American Innovation*, THE WHITE

While much of the rhetoric around PAEs is negative, it should not be assumed that PAEs are necessarily harmful. 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.¹⁰¹ 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 an PAE.¹⁰² Under this model of PAE behavior, PAEs incentivize innovation by enabling some types of innovators to enforce and profit from their innovation.

B. 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. A list of all public PAEs was obtained from RPX Corporation, a patent aggregator that issues reports on PAE practices. RPX’s report lists 23 public PAEs in 2015.¹⁰³ Of these, 15 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 8 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 8 companies, as assessed from their financial statements, are explored below. All 8 companies very explicitly describe a strategy of patent shopping.

HOUSE BLOG (June 4, 2013), *available at* <http://www.whitehouse.gov/blog/2013/06/04/taking-patent-trolls-protect-american-innovation>.

¹⁰¹ See, e.g., Christopher A. Cotropia, Jay Kesan, & David Schwartz, *Unpacking Patent Assertion Entities (PAEs)*, 99 MINN. L. REV. 649, 653 (2014); Michael Risch, *Patent Troll Myths*, 42 SETON HALL L. REV. 457, 459 (2012); Tim Pohlmann & Marieke Opitz, *The Patent Troll Business: An Efficient Model to Enforce IPR?*, 43 R&D MANAGEMENT 103 (2013); Sannu K. Shrestha, *Trolls or Market-Makers? An Empirical Analysis of Nonpracticing Entities*, 10 COLUM. L. REV. 114, 115-16 (2010).

¹⁰² David L. Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 336, 339 (2012).

¹⁰³ InterDigital (IDCC), Tessera (TSRA), Rambus (RMBS), Rovi (ROVI), Acacia (ACTG), WiLAN (WILN), Pendrell (PCO), VirnetX (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).

C. Results

Acacia, one of the oldest and largest PAEs,¹⁰⁴ 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.”¹⁰⁵ 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.¹⁰⁶ In Acacia’s words,

[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 uncover important patent assets and bring needed proficiency to patent licensing and enforcement.¹⁰⁷

The first step in Acacia’s business model is “Patent Discovery.”¹⁰⁸ 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.”¹⁰⁹ 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.”¹¹⁰ 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 their own “staff of in-house business development executives, patent attorneys, patent licensing executives, and technology engineers” or contracting

¹⁰⁴ Michael A. Carrier, *Patent Assertion Entities: Six Actions the Antitrust Agencies Can Take*, 2013 CPI Antitrust Chronicle 1, 3 (2013).

¹⁰⁵ Acacia Research Corporation, *Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015*, 3 (Dec. 21, 2015), available

at <https://www.sec.gov/Archives/edgar/data/934549/000093454916000100/actg2015123110-k.htm>

[hereinafter “Acacia 10-K”].

¹⁰⁶ *Id.* at 3-10.

¹⁰⁷ *Id.* at 5.

¹⁰⁸ *Id.* at 6.

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

with “external specialists and technology consultants.”¹¹¹ Acacia specifically focuses on evaluating infringement, validity, and enforceability.¹¹² For infringement, Acacia explains that they must “identify third-parties that are practicing the invention(s) covered by the patent without obtaining permission from the patent owner to do so.”¹¹³ 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.”¹¹⁴ 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 and services.”¹¹⁵ 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.” Crucially, this due diligence is all done “before the decision is made to allocate resources to a patent portfolio investment.”¹¹⁶ 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.”¹¹⁷

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.”¹¹⁸ Acacia does not divulge the percentage of patents that make it through its due diligence process however, Intellectual Ventures, a similar (but privately owned) PAE, notes on its website that they evaluate approximately 35,000 patents per year and “we only buy about 10% of the assets we evaluate.”¹¹⁹

¹¹¹ *Id.* at 7.

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

¹¹⁵ *Id.*

¹¹⁶ *Id.*

¹¹⁷ *Id.*

¹¹⁸ *Id.* at 4.

¹¹⁹ <http://www.intellectualventures.com/sell/how-it-works>

Once Acacia has acquired a patent, they seek to monetize the asset through licensing or litigation.¹²⁰ Acacia boasts “a proven track record of licensing success with more than 1,490 license agreements.”¹²¹ 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.¹²²

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, which “buys high-quality patents from patent owners of all types,”¹²³ is “technology agnostic” and “special[izes in] patents and patent monetization,”¹²⁴ has a “[s]trong patent acquisition pipeline with a proprietary process to value patent assets.”¹²⁵

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 we seek to acquire have large identifiable targets who are or have been using technology that we believe infringes our patents and patent rights.”¹²⁶ Their business model has two primary elements: “the identification, analysis and acquisition of patents and patent rights” followed by the “generation of revenue from the acquired patents or patent rights.”¹²⁷ Marathon has been successful in acquiring over 300 patents and “intend[s] to add more patents...to our portfolio for the purpose of generating additional revenues from assertion of claims against infringers.”¹²⁸

Part of Marathon’s strategy relies on obtaining early and exclusive access to

¹²⁰ Acacia 10-K, *supra* note 105, at 3.

¹²¹ *Id.* at 4.

¹²² *Id.*

¹²³ <http://www.marathonpg.com/for-patent-owners>

¹²⁴ <http://www.marathonpg.com/for-patent-owners/would-marathon-be-interested-in-my-patent>.

¹²⁵ Marathon Investor Presentation, 3 (March 2016), <http://content.equisolve.net/marathonpg/media/6fc6857977e58dba1d113850d73c7c4d.pdf>.

¹²⁶ Marathon Patent Group, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015, 1 (2015), available at https://www.sec.gov/Archives/edgar/data/1507605/000110465916108696/a16-6075_110k.htm.

¹²⁷ *Id.*

¹²⁸ *Id.*

patent markets. Marathon has “worked to establish a supply of patent acquisition opportunities with patent brokers and dealers.”¹²⁹ 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...”¹³⁰ The platform “is comprised of approximately 120 factors, and it has been continuously updated using actual observations.”¹³¹ Marathon conducts this due diligence “before the decision is made to allocate resources to an acquisition.”¹³² Of particular interest during due diligence is to “identify potential infringers; [and] industries within which the potential infringers exist...”¹³³ After acquisition, Marathon monetizes patents by “entering into licensing discussions, and if that is unsuccessful, initiating enforcement activities.”¹³⁴ 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.

Similarly to Marathon, Inventergy is a company “focused on developing relationships...with leading companies...who lack expertise in IP monetization.”¹³⁵ These companies may have “significant patent asset portfolios in areas that are no longer of strategic value to the client,”¹³⁶ and thus potentially available for sale to Inventergy. Inventergy seeks patent portfolios in “strong-margin, high-growth segments of particular industry sectors.”¹³⁷ 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.”¹³⁸

Inventergy is particularly concerned about identifying infringing behavior before acquiring the patent. They hunt for patents that “have clearly been adopted and built upon by other market participants”¹³⁹ and have a legal and technical team that “help[] analyze the products and services of prospective licensees [i.e.,

¹²⁹ *Id.* at 2.

¹³⁰ *Id.*

¹³¹ *Id.* at 3.

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.* at 2.

¹³⁵ Inventergy Global, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015, 2 (2015), https://www.sec.gov/Archives/edgar/data/1084752/000114420416092554/v434820_10k.htm.

¹³⁶ *Id.*

¹³⁷ *Id.*

¹³⁸ *Id.*

¹³⁹ *Id.*

infringers].”¹⁴⁰ These teams also “analyze[] patent claims and determine[] how these claims relate to products, services and industry standards.”¹⁴¹ Inventergy concludes that a key element of its business strategy is “[l]everaging our management’s expertise to select...patent assets.”¹⁴²

Another example of patent shopping comes from Endeavor IP. Endeavor is “in the business of patent monetization” and is “highly selective in choosing our patent portfolios.”¹⁴³ Endeavor’s “activities generally include the acquisition and development of patents, and the monetization of those patents.”¹⁴⁴ They “will seek to acquire existing rights to intellectual property through the acquisition of already issued patents and pending patent applications.”¹⁴⁵

Endeavor particularly looks for patents that are presently being infringed by a large number of companies, or are likely to become infringed soon. “We 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.” As part of this process, and during their “patent evaluation process,” they give “significant consideration...to the identification of potential infringers” and “industries within which the potential infringers exist.”¹⁴⁶ 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.”¹⁴⁷

When the evaluation process is complete, Endeavor “may elect to purchase the patented technology.”¹⁴⁸ After acquisition, Endeavor enforces the patents by “present[ing] the claims of our patents and demonstrat[ing] how they apply to companies we believe are using our technologies in their products or services.”¹⁴⁹ 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.”

¹⁴⁰ *Id.*

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ <http://www.enip.com/about/>

¹⁴⁴ Endeavor IP, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended October 31, 2015, 2 (2015), https://www.sec.gov/Archives/edgar/data/1511261/000141588916004560/enip10k_oct312015.htm.

¹⁴⁵ *Id.*

¹⁴⁶ *Id.* at 3.

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*

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."¹⁵⁰ They conduct 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."¹⁵¹ They acknowledge that the success of the 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."¹⁵²

Another example is Network-1, which "acquires and licenses intellectual property," is a relatively small company, with a current portfolio of only six patents,¹⁵³ but that has generated revenue in excess of \$82 million.¹⁵⁴ Network-1's strategy "is to focus on acquiring high quality patents which management believes have the potential to generate significant licensing opportunities."¹⁵⁵ The company "continually review[s] opportunities to acquire or license additional intellectual property."¹⁵⁶ 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.¹⁵⁷

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

¹⁵⁰ Tessera Technologies, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended October 31, 2015, 2 (2015), <https://www.sec.gov/Archives/edgar/data/1261694/000162828016011480/tsra-20151231x10xk.htm>

¹⁵¹ *Id.*

¹⁵² *Id.* at 8.

¹⁵³ <http://www.network-1.com/>

¹⁵⁴ Network-1 Technologies, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended October 31, 2015, 2 (2015), https://www.sec.gov/Archives/edgar/data/1065078/000107261316000745/form10k_17924.htm.

¹⁵⁵ *Id.*

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* at 3.

connection with the manufacture or sale of products and services, and to which we can bring enforcement actions.¹⁵⁸

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.”¹⁵⁹ Spherix specifically wishes to acquire patents from companies who had not been able to “effectively address the unauthorized use of their patented technologies.”¹⁶⁰

V. 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.

A. Defensive Aggregators

Defensive aggregation is a relatively new business model with few players, though the field is growing.¹⁶¹ Defensive aggregators characterize themselves as “fighting patent trolls”¹⁶² 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.¹⁶³ Clients are generally large practicing entities that are frequent targets of PAEs.¹⁶⁴

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

¹⁵⁸ Finjan Holdings, Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015, 2 (2015), <https://www.sec.gov/Archives/edgar/data/1366340/000136634016000031/fnfn-20151231x10k.htm>.

¹⁵⁹ Spherix Inc., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015, 2 (2015), https://www.sec.gov/Archives/edgar/data/12239/000161577416004672/s102876_10k.htm

¹⁶⁰ *Id.*

¹⁶¹ Anne Kelley, *Practicing in the Patent Marketplace*, 78 U. Chi. L. Rev. 116, 119 (2011).

¹⁶² Mark A. Lemley & A. Douglas Melamed, *Missing the Forest for the Trolls*, 113 Colum. L. Rev. 1002, 1003 (2013).

¹⁶³ Schwartz, *supra* note 56, at 434-35.

¹⁶⁴ Kelley, *supra* note 161, at 120.

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.¹⁶⁵ 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.”¹⁶⁶ RPX reports that the substantial majority of its acquisitions “involved patent assets that we believed were relevant to multiple clients and/or prospective clients.”¹⁶⁷

RPX “closely track[s] patent assets that become available on the market” and has “reviewed more than 7,700 patent portfolios” since its inception.¹⁶⁸ This “familiarity provides us early notice of patent portfolios that are entering the market.”¹⁶⁹ Once RPX becomes aware of these portfolios, it applies a “rigorous and disciplined approach to evaluating acquisition opportunities.”¹⁷⁰ 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.”¹⁷¹ 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 and their likely validity.”¹⁷² They continue to “refine[] our 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.¹⁷³

B. 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

¹⁶⁵ Andrei Hagiu & David B. Yoffie, *The New Patent Intermediaries: Platforms, Defensive Aggregators, and Super-Aggregators*, J. ECON. PERSP. Winter 2013, 45.

¹⁶⁶ RPX Corp., Annual Report Pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the Fiscal Year Ended December 31, 2015, 1 (2015), <https://www.sec.gov/Archives/edgar/data/1509432/000150943216000146/rpx-12312015x10k.htm>.

¹⁶⁷ *Id.* at 2.

¹⁶⁸ *Id.* at 3.

¹⁶⁹ *Id.*

¹⁷⁰ *Id.*

¹⁷¹ *Id.* at 2.

¹⁷² *Id.*

¹⁷³ *Id.* at 3.

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.

1. 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.¹⁷⁴ 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.¹⁷⁵ They propose that portfolios operate as a “super-patent,” providing the ability to exclude over a broad range. Portfolios are both “sizeable,” meaning that any patents within a patent portfolio cover closely related areas,¹⁷⁶ and they are “diverse,” meaning that they include patents covering a number of different subject areas.¹⁷⁷ Portfolio scale-effects create more value than would be suggested by merely adding together the value of individual patents.¹⁷⁸

Ideally, “the breadth of the right to exclude conferred by a patent portfolio is essentially the sum of the individual patent rights”¹⁷⁹ and each patent seamlessly abuts or slightly overlaps with its neighbor to create a broad area of protection¹⁸⁰ (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.¹⁸¹ Holders of large patent

¹⁷⁴ *Id.* at 12.

¹⁷⁵ See, Gideon Parchomovsky & R. Polk Wagner, *Patent Portfolios*, 154 U. PENN. L. REV. 1 (2005).

¹⁷⁶ Parchomovsky & Wagner, *supra* note 175, at 41 (“effective 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’)...”).

¹⁷⁷ *Id.* (“effective 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.”).

¹⁷⁸ *Id.* at 7.

¹⁷⁹ *Id.* at 33.

¹⁸⁰ *Id.* at 41.

¹⁸¹ *Id.* at 34.

portfolios may, therefore, “have an inherent advantage over competitors that hold a small number of individual patents.”¹⁸² 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.¹⁸³ Outside acquisition may occur when firms purchase individual patents or small groups of patents, or when firms acquire large portfolios owned by another company.¹⁸⁴ For example, in 2011, Google bought Motorola Mobility’s patent portfolio of over 17,000 patents.¹⁸⁵ Patent portfolios have grown very large: Microsoft has over 50,000 patents,¹⁸⁶ IBM obtained over 25,000 patents between 1994 and 2004, while Canon obtained 15,000 over the same period.¹⁸⁷ 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.¹⁸⁸ Some PAEs also own large patent portfolios, for example, Intellectual Ventures has acquired over 70,000 patents.¹⁸⁹

2. 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 portfolios have two characteristics, they are “sizeable,” meaning that any patents within a patent portfolio cover closely related areas,¹⁹⁰ and they are “diverse,” meaning that they include patents covering a number of different subject areas.¹⁹¹ As a result, a large portfolio will cover both many different instances of

¹⁸² *Id.* at 65.

¹⁸³ Michael Risch, *Patent Portfolios as Securities*, 63 DUKE L.J. 89, 99 (2013).

¹⁸⁴ *Id.* at 100-101.

¹⁸⁵ <http://dealbook.nytimes.com/2011/08/15/google-to-buy-motorola-mobility/>.

¹⁸⁶ Mark R. Patterson, *Leveraging Information About Patents: Settlements, Portfolios, and Holdups*, 50 HOUSTON L. REV. 484, 504 (2012).

¹⁸⁷ Parchomovsky & Wagner, *supra* note 175, at 46-47.

¹⁸⁸ Eskil Ullberg, *The Language of Trust and Reciprocity in Patent Markets: A Sociological Analysis of Property Rights on Messages Resolving Uncertainty in Exchange in Ideas*, Hoover Institution Working Paper Series No. 15016, 24 (2015), <http://hooverip2.org/wp-content/uploads/ip2-wp15016-paper.pdf>.

¹⁸⁹ <http://www.intellectualventures.com/inventions-patents/patent-portfolio/>

¹⁹⁰ Parchomovsky & Wagner, *supra* note 175, at 41 (“effective 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’)...”).

¹⁹¹ *Id.* (“effective 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.”).

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.¹⁹² Philips has a large portfolio of at least 25,000 U.S. Patents.¹⁹³ 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), smart phone and tablet technologies such as touch screens and other user features, and home technologies such as televisions, remote controls, and voice control applications.¹⁹⁴ Thus, most people use many different technologies patented by Philips on a daily basis.

Philips’ portfolio not only covers many different technologies, 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, using recordable and rewritable compact disks infringes at least five Philips patents.¹⁹⁵ 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.¹⁹⁶ 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.¹⁹⁷ It is perhaps not surprising that Philips was able to win easily, because Philips owns 4% of the *total* number of US granted patents in this subject area.¹⁹⁸

¹⁹² <http://www.usa.philips.com/a-w/about-philips/company-profile.html>.

¹⁹³ 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.

¹⁹⁴ <http://www.ip.philips.com/licensing/licensing.html>

¹⁹⁵ *In re Princo*, 478 F.3d 1345, 1348 (Fed. Cir. 2007).

¹⁹⁶ *U.S. Philips Corp. v. Princo Corp.*, 361 F. Supp. 2d 168, 186 (S.D.N.Y. 2005).

¹⁹⁷ *Id.*

¹⁹⁸ 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 IPC classifications in question, for an average of 4.2%. Note that this raises antitrust concerns. *Id.* at 183.

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.¹⁹⁹ 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:²⁰⁰ 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.²⁰¹ IBM asserted seven patents, to which Sun responded that these patents were not infringed and were invalid.²⁰² 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.”²⁰³

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 & 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. . .²⁰⁴

¹⁹⁹ 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).

²⁰⁰ 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.

²⁰¹ Cite

²⁰² Cite

²⁰³ Michael A. Carrier, *A Response to Chief Justice Roberts: Why Antitrust Must Play a Role in the Analysis of Drug Patent Settlements*, 15 MINN. J.L. SCI. & TECH. 31, 33 (2014).

²⁰⁴ Order No. 32: Initial Determination Granting Microsoft’s Motion for Summary

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.

C. 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 application,²⁰⁵ but can have different claims.²⁰⁶ 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.²⁰⁷ 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.²⁰⁸

Despite 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.²⁰⁹ 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...”²¹⁰

Determination of Respondent’s First Affirmative Defense of Patent Misuse at 5, *Certain Handheld Electronic Computing Devices, Related Software, and Components Thereof* 11, Inv. No. 337-TA-769 (Jan. 31, 2012), 2012 WL 504367 at *5.

²⁰⁵ For a continuation. A continuation in part can contain different text in the specification. MPEP 1895.

²⁰⁶ The claims of a patent are legal formulas that define the boundaries of the patent. 35 USC 112 (claims “particularly point[] out and distinctly claim[] the subject matter which the applicant regards as his invention or discovery.”).

²⁰⁷ 35 USC 120; 37 CFR 1.53(d).

²⁰⁸ *In re Lukach*, 442 F.2d 967 (CCPA 1971); MPEP 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.”).

²⁰⁹ Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. Rev. 63, 76 (2004).

²¹⁰ *Kingsdown Medical Consultants v. Hollister*, 863 F.2d 867, 874 (Fed. Cir. 1988).

Despite the Federal Circuit’s reassuring words, allowance of continuations in this manner strikes scholars as troublesome.²¹¹ There have been several unsuccessful attempts to limit use of continuations, both in Congress²¹² and at the PTO.²¹³

Continuations are analogous to selection 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.”²¹⁴

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

²¹¹ See, e.g., Mark A. Lemley, *Ten Things to do About Patent Holdup Standards (And One Not To)*, 48 B.C.L. Rev. 149, 163 (2007); Lemley & Moore, *supra* note 209, at 78.

²¹² H.R. 2795, 109th Cong. (2005) (granting the USPTO the explicit ability to limit continuations).

²¹³ Changes to Practice for Continuing Applications, Requests for Continued Examination Price, and Applications Containing Patentably Indistinct Claims, 71 Fed. Reg. 48-01 (Jan. 3, 2006).

²¹⁴ Lemley & Moore, *supra* note 209, at 78.

ANALYSIS

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

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 into the patent, the patent may be of dubious validity, in which case it will be considerably more risky and 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 common and infringement is either difficult to prove or the patent simply does not end up covering important technology, most patents “turn out to have little or no commercial significance.”²¹⁵ 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.”²¹⁶ 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.”²¹⁷ This uncertainty means that patent filing and enforcement behavior will reflect the “probabilistic” nature of patents.²¹⁸ 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 20 or more patents. Similarly, if, on average, a patent has a 50% chance of being found to be invalid, a shopper with access to 5 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

²¹⁵ Lemley & Shapiro, *supra* note 17, at 75. Empirical evidence shows that only 0.1% of patents are litigated to trial. Jean O. Janjouw & Mark Schankermann, *Characteristics of Patent Litigation: A Window on Competition*, 32 RAND J. ECON. 129, 130 (2001).

²¹⁶ Lemley & Shapiro, *supra* note 17, 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).

²¹⁷ Lemley & Shapiro, *supra* note 17, at 81. See also, F.M. Scherer, *The Innovation Lottery*, in EXPANDING THE BOUNDARIES OF INTELLECTUAL PROPERTY, 3 (Rochelle Dreyfuss et al., eds. 2001).

²¹⁸ Lemley & Shapiro, *supra* note 17, at 76.

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.

B. Relationship to the Patent System

Patent shoppers and innovators interact with the patent system from significantly different perspectives. This has strategic consequences for litigants, and is also critical for patent theorists, as the rise of patent shoppers has shifted the importance of certain features of patent law.

1. 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 litigation.”²¹⁹ 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.”²²⁰ 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.”²²¹ In other words, the goal is 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.”²²²

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 IP gives “significant consideration...to the identification of potential infringers” before acquiring a patent,²²³ Marathon seeks patents that “have large identifiable targets who have been using technology that we believe infringes our patents”²²⁴ Acacia identifies third-parties “that are practicing the invention(s) covered by the patent without

²¹⁹ ALAN R. THIELE, JUDITH R. BLAKEWAY, CHARLES M. HOSCH, *THE PATENT INFRINGEMENT LITIGATION HANDBOOK: AVOIDANCE AND MANAGEMENT*, xviii (2012).

²²⁰ *Id.* at 13.

²²¹ *Id.* at 14.

²²² *Id.* at xix.

²²³ Endeavor 10-K.

²²⁴ Marathon 10-K.

obtaining permission from the patent owner to do so.”²²⁵ 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 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 one hundred different infringement targets – creating an enormous range of potential scenarios, winning any one of which would benefit the shopper.

2. 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 to 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. 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.

²²⁵ Acacia 10-K.

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,²²⁶ and whether the infringer has a reputation for fighting back, giving in, or for taking a license. For example, Marathon Patent Group explains, “the patent and patent rights that we seek to acquire have large identifiable targets who are or have been using the technology that we believe infringes our patents.”²²⁷ In this manner, Marathon, who will be the plaintiff in any eventual enforcement action, is choosing the defendant by acquiring an infringed patent.

3. 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.”²²⁸ In litigation, the text of the patent becomes even more crucial. In the famous words of Giles Rich, “the name of the game is the claims.”²²⁹

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.²³⁰ 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.²³¹ Even under the malleability model, the portions of the patent that are fixed before patent grant are not insignificant.

²²⁶ For example, end user suits (though these are rare). 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, 969 (2014).

²²⁷ Cite

²²⁸ Handbook at 10.

²²⁹ Cite.

²³⁰ Jason Rantanen, *The Malleability of Patent Rights* (2015) <http://ssrn.com/abstract=2540356>, at abstract.

²³¹ *Id.*

The patentee drafts the specification²³² 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.²³³ 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.²³⁴

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

C. Effects on the Patent System

The behavior of patent shoppers has had several important effects on the shape of the patent system. In particular, patent shoppers raise levels of patent enforcement and increase the marketability of patents.

1. Patent Enforcement Levels

As discussed above,²³⁵ there is widespread underenforcement of patent infringement. Shoppers, by identifying instances of infringement and then acquiring and enforcing patents that might have otherwise gone unenforced, may reduce underenforcement.²³⁶

In doing so, shoppers are 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

²³² A narrative portion of the patent describing the invention. 37 C.F.R. 1.15(b)(1).

²³³ See, e.g., Christopher A. Cotropia, *Patent Claim Interpretation Methodologies and Their Claim Scope Paradigms*, 47 WM. & MARY L. REV. 49, 65 (2005).

²³⁴ 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 Meurer & Nard at 1949 (“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.”).

²³⁵ Section X, *supra*.

²³⁶ See Balganesch for discussion of how “copyright trolls” enforce actions that would otherwise have gone unenforced.

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.²³⁷ The 2008 movie *Flash of Genius* tells the true story of Robert Kearns, who invented and patented the intermittent windshield wiper. He offered to sell his invention to several large car companies, but these companies ignored him.²³⁸ Kearns was able to represent himself in court, although it took 12 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.²³⁹ Unlike Kearns, most inventors cannot represent themselves in court and cannot pay for a lawyer.²⁴⁰ Thus, many inventors have anecdotes of instances where they approached large companies and, almost without fail, were ignored. In interviews with several individual inventors, all told stories of approaching large companies for a license, being rebuffed, and finally selling their patent to a shopper, knowing that there was no other recourse to provide a credible threat of litigation to the infringing company.

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 IP explains that “[o]ften, individual inventors and small companies...are unable to effectively address 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.”²⁴¹ 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 grind a halt.²⁴² The rise in enforcement caused by patent shoppers has been criticized for hampering innovative companies who inadvertently infringe on patents. 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?²⁴³

²³⁷ See Section X, *supra* on the challenges of obtaining financing for patent litigation.

²³⁸ <http://www.nytimes.com/2005/02/26/obituaries/robert-kearns-77-inventor-of-intermittent-wipers-dies.html>.

²³⁹ *Kearns v. Chrysler Corp.*, 32 F.3d 1541, 1543 (Fed. Cir. 1994).

²⁴⁰ See Section X, *supra* on the challenges of obtaining financing for patent litigation.

²⁴¹ Cite

²⁴² Because patent infringement is exceedingly common. See note X, *supra*.

²⁴³ 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); Samson Vermont, *Independent Invention as a Defense to Patent Infringement*, 105 Mich. L. Rev. 475 (2006); Roger Milgrim, *An Independent*

In tort law, economists have argued that liability is a vehicle for deterring undesirable conduct.²⁴⁴ Thus, underenforcement is an impediment to deterrence (though full enforcement would also not be optimal).²⁴⁵ 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. 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.²⁴⁶ Where tort and patent law diverge is that infringement – the behavior that must be deterred to promote innovation – is often itself 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 length in the patent literature.²⁴⁷ 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

Invention Defense to Patent Infringement: The Academy Talking to Itself, Should Anyone Listen?, 90 J. Pat. & Trademark Off. Soc'y 295 (2008).

²⁴⁴ 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).

²⁴⁵ 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); Jennifer Wriggins, *Domestic Violence Torts*, 75 S. Cal. L. Rev. 122, 163 (2001); Kenneth S. Abraham & John C. Jeffries, *Punitive Damages and the Rule of Law: The Role of Defendants' Wealth*, 18 J. Legal Stud. 416, 419 (1989); David Shieh, *Unintended Side Effects: Arbitration and the Deterrence of Medical Error*, 89 N.Y.U. L. Rev. 1806, 1831 (2014).

²⁴⁶ Cite lots of articles on downstream innovation, including anticommons articles.

²⁴⁷ Cite.

incentivized to innovate. Studies have attempted to put a number returns to innovators,²⁴⁸ but the results are controversial.²⁴⁹ 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.

2. Marketability of Patents

The purpose of patents is to incentivize innovation.²⁵⁰ 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.²⁵¹ 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, for example, 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 to innovation.²⁵² Under this

²⁴⁸ Bessen & Meurer, *supra* note 96, 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...”).

²⁴⁹ David L. Schwartz & Jay P. Kesan, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 Cornell L. Rev. 425, 434-441 (2014). See also David S. Olson, *On NPEs, Holdups, and Underlying Faults in the Patent System*, 99 Cornell L. Rev. 140 (2014) (responding to both the Schwartz & Kesan and Bessen & Meurer studies)

²⁵⁰ Cite

²⁵¹ See, e.g., John Golden, *Patent Trolls and Patent Remedies*, 85 Tex. L. Rev. 2111, 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.”); Colleen Chien, *From Arms Race to Marketplace: The New Complex Patent Ecosystem and Its Implications for the Patent System*, 62 Hastings L.J. 297, 300 (2010) (explaining how non-practicing entities buy patents, creating a secondary market in patents); Michael Risch, *Patent Troll Myths*, 42 Seton Hall L. Rev. 547, 459 (2012) (summarizing literature on PAEs and patent markets); Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 Notre Dame L. Rev. 1809, 1810 (2007) (addressing arguments that PAEs form facilitate patent marketplaces.”); Timo Fischer & Joachim Henkel, *Patent Trolls on Markets for Technology-An Empirical Analysis of Trolls’ Patent Acquisitions* 1 (2011) available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1523102 (examining what type of patents are acquired by PAEs); Robert P. Merges, *The Trouble with Trolls: Innovation, Rent-Seeking, and Patent Law Reform*, 24 Berkeley Tech. L.J. 1583, 1598-99 (2010) (arguing that markets are not a good justification for PAEs).

²⁵² Cite economics literature

narrative, shoppers may be promoting innovation.

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 “the most significant reform of the Patent Act since 1952.”²⁵³ In the past three years, more than 20 further patent reform bills have been introduced before Congress, most targeted towards the types of entities who are likely to be patent shoppers.²⁵⁴ The White House has issued statements advocating certain goals for patent policy.²⁵⁵ Scholars are producing copious amounts of literature recommending patent reform.²⁵⁶ In sum, patent law is presently an area of active policy change, and the goal is often changing the behavior of shoppers.

Though the patent shopping model is novel, the players, specifically PAEs are well known. 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 A, below.

The patent system has several mechanisms to protect against problematic behavior and more have been proposed and implemented in recent years in response to the rise of PAEs. Unfortunately, these mechanisms do not work 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 B, 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 C discusses the advantage and disadvantages of different approaches and proposes specific mechanisms to hamper shoppers’ bad behavior.

²⁵³ <https://www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim>

²⁵⁴

²⁵⁵ <https://www.whitehouse.gov/the-press-office/2014/02/20/fact-sheet-executive-actions-answering-president-s-call-strengthen-our-p>

²⁵⁶ String cite.

A. *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.²⁵⁷ 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.²⁵⁸ Further, any monetary gain these companies might make from patent enforcement could be ploughed 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:

Hold-up: “The prospect of an injunction-induced blackout of handheld e-mail” has “haunted current policy discussions regarding U.S. patent law.”²⁵⁹ Injunctions were the traditional remedy for patent infringement.²⁶⁰ 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 re-design 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 re-design, 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 hand-held device, chose to negotiate a license and pay the patentee \$612 million.²⁶¹

Injunctions are now harder to get, particularly for PAEs,²⁶² however the

²⁵⁷ Balganesch, Copyright Trolls (discussing the equilibrium in the context of copyright).

²⁵⁸ Cite

²⁵⁹ John Golden, *Principles for Patent Remedies*, 88 Tex. L. Rev. 505, 506 (2010).

²⁶⁰ Though this has changed somewhat in the aftermath of *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 391 (2006).

²⁶¹ Rob Kelly, *BlackBerry maker, NTP ink \$612 million settlement* CNN (March 3, 2006) (“Research in Motion averts shutdown of wireless e-mail service...”).

²⁶² Bernard H. Chao, *After eBay, Inc. v. MercExchange: The Changing Landscape for Patent*

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 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.”²⁶³ Because it is practically impossible for product companies to avoid all patent infringement, they cannot avoid exposing themselves to the possibility of hold-up.²⁶⁴

Nuisance suits: Patent litigation is expensive.²⁶⁵ 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.”²⁶⁶ PAEs will sometimes send demand letters or file suit with vague infringement allegations that the defendant has strong arguments to counter, but in situations where the defendant may find it easier and cheaper to pay a settlement rather than litigate.²⁶⁷

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.²⁶⁸ 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).²⁶⁹ 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.

Remedies, 9 Minn. J.L. Sci. & Tech. 543, 545 (2008).

²⁶³ Robert Merges, *The Trouble with Trolls*, 24 Berkeley Tech. L.J. 1583, 1591 (2010).

²⁶⁴ *Id.*

²⁶⁵ Colleen Chien, *Startups and Patent Trolls* 11 (2012), available at <http://digitalcommons.law.scu.edu/facpubs/553>.

²⁶⁶ *Id.* at 6.

²⁶⁷ E.g., Ranganath Sudarshan, *Nuisance-Value Patent Suits: An Economic Model and Proposal*, 35 SANTA CLARA COMP. & HIGH TECH. L.J. 159, 159 (2008).

²⁶⁸ Cite Constitutional provision.

²⁶⁹ Bessen & Meurer

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 policy makers want to prevent these occurrences.²⁷⁰ The sections below first explain how patent shoppers evade some types of policy and then recommend several policies that will impact patent shoppers.

B. 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.²⁷¹ 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.²⁷² 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

²⁷⁰ See, e.g., Innovation Act (H.R. 3309); Patent Quality and Improvements Act (S. 1720), Patent Quality Improvement Act (S. 866); Patent Abuse Reduction Act (S. 1013); Patent Litigation Integrity Act (S. 1612); Transparency in Assertion of Patents Act (S. 2049); Patent Fee Integrity Act (S. 2146); Trade Protection Not Troll Protection Act (H.R. 4763); Demand Letter Transparency Act (H.R. 3540); Innovation Protection Act (H.R. 3309); Patent Litigation and Innovation Act (H.R. 2639); SHIELD Act (H.R. 845); Stopping the Offensive Use of Patents Act (H.R. 2766); End Anonymous Patents Act (H.R. 2024); PATENT Act (S. 1137); Innovation Act (H.R. 9); STRONG Patents Act of 2015 (S. 632); Targeting Rogue and Opaque Letters Act of 2015 (H.R. 2045); Demand Letters Transparency Act of 2015 (H.R. 1896); Innovation Protection Act (H.R. 3349).

²⁷¹ E.g., David Rosenberg & Steve Shavell, *A Model in Which Suits Are Brought For Their Nuisance Value*, 5 Int'l Rev. L. & Econ. 3, 3 (1985).

²⁷² *Id.* at 12.

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 in fact invalid.²⁷³ A study of invalidity rates found that courts held 46% of litigated patents to be invalid,²⁷⁴ and older studies suggest this number is even higher.²⁷⁵ If a patent is thought to be improperly granted and in fact invalid, it can be challenged in court.²⁷⁶ A powerful defense for a company worried, for example, about holdup, 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

²⁷³ See, e.g., Christopher R. Leslie, *The Anticompetitive Effects of Unenforced Invalid Patents*, 91 MINN. L. REV. 101, 105-06 (2006). 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." Mark A. Lemley, *Rational Ignorance at the Patent Office*, 95 NW. U.L. REV. 1495, 1497 (2001). See also Mark A. Lemley & Carl Shapiro, *Probabilistic Patents*, 19 J. ECON. PERSP. 75, 75 (2005).

²⁷⁴ John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 205 (1998).

²⁷⁵ *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.").

²⁷⁶ 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.*, 127 S. Ct. 764, 771 (2007). The availability of declaratory judgment for patent validity is controversial. See, e.g., Greg Halsey, *There is a Pink Elephant at Our Patent Negotiation, and His Name is Declaratory Judgment*, 46 SAN DIEGO L. REV. 247 (2009); Katherine A. Helm & Gene W. Lee, *Call It a Comeback: A Sweeping Change in the Law on Declaratory Judgment Actions Against Patent Owners*, 64 N.Y.U. ANN. SURV. AM. L. 231 (2009); Paul J. LaVanway, Jr., *Patent Licensing and Discretion: Reevaluating the Discretionary Prong of Declaratory Judgment Jurisdiction After MedImmune*, 92 MINN. L. REV. 1966 (2008); Lorelei Ritchie de Larena, *Re-evaluating Declaratory Judgment Jurisdiction in Intellectual Property Disputes*, 83 IND. L.J. 957 (2008).

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.²⁷⁷ 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.

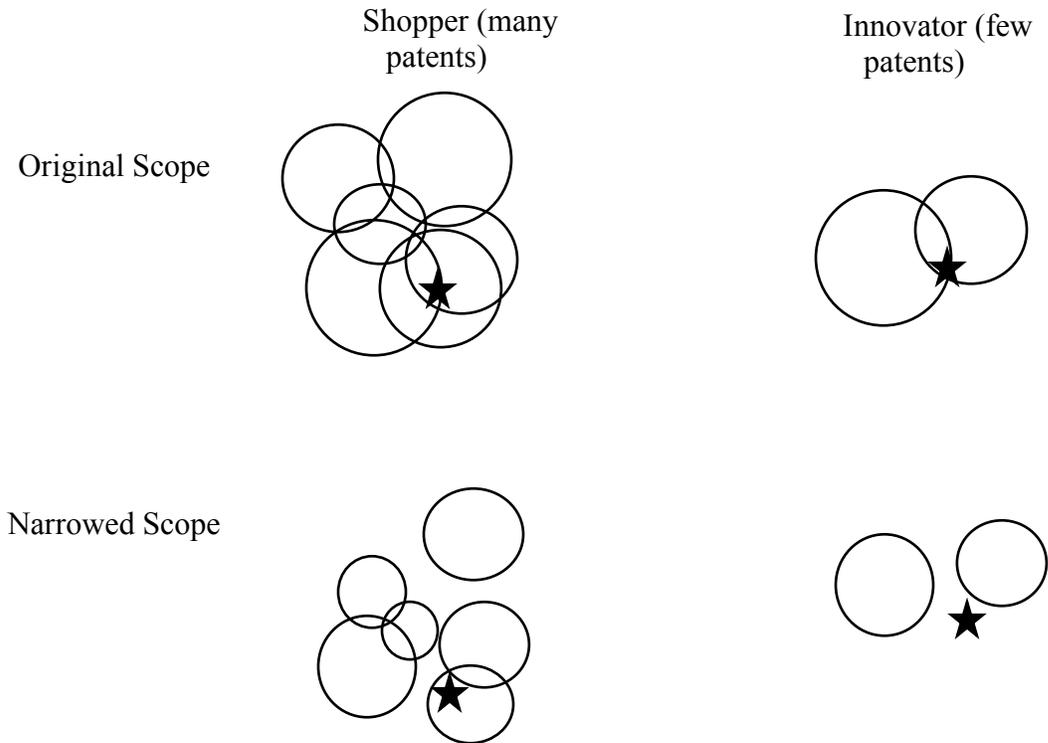
Policy Changes Altering Substantive Law: If substantive patent law is changed in ways that weaken patents, as is sometimes suggested as a way to combat PAEs, it will have an attenuated effect on patent shoppers (the target of the law) and a far stronger effect on non-shoppers such as small innovators. Consider the following example relating to a hypothetical change in patent law that narrowed patents.²⁷⁸ 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 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

²⁷⁷ 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.

²⁷⁸ 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. 268, 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 JOHN MARSHALL L. REV. 805, 808 (1999).

out, and a reduced number of patents that are useful in enforcement actions. These issues all impact patent shoppers.



C. *Crafting Policy for Patent Shoppers*

Existing safeguards will not be effective because patent shoppers 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 (hold-up, 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.

1. *Reducing the Ability of Shoppers to Hold-up Innovators*

Patent shoppers have a particular ability to hold-up 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 hold-up 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 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 re-design 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 company take various actions to avoid suit if possible and re-design 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’²⁷⁹ which would have required disclosure of “titleholders,” “enforcement entities,” “ultimate parent entities,” and “hidden beneficial owners.”²⁸⁰ Attributable owners would have to be identified at several periods including filing, issue, and payment of maintenance fees.²⁸¹ 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.²⁸² Other policy efforts have been made to encourage disclosure including the Innovation Act, which required parties filing suit to disclose certain ownership details²⁸³ and the somewhat similar End Anonymous Patents Act,²⁸⁴ Patent Abuse Reduction Act,²⁸⁵ Patent Transparency and Improvement Act,²⁸⁶ and Patent Litigation and Innovation Act.²⁸⁷ 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 year 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

²⁷⁹ 79 Fed. Reg. 4105 (Jan. 24, 2014).

²⁸⁰ *Id.* at 4110.

²⁸¹ *Id.* at 4106.

²⁸² 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 Virginia J.L. & Tech. 272, 276.

²⁸³ Innovation Act, H.R. 3309, 113th Cong. § 4 (2013).

²⁸⁴ End Anonymous Patents Act, H.R. 2024, §2(e)(5) (2013).

²⁸⁵ H.R. 2639.

²⁸⁶ S.1720, § 3(b)(1) (2013).

²⁸⁷ S. 1013.

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. Note that a year is somewhat arbitrary and it is an empirical question precisely what the best waiting period would be.

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 re-design 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.²⁸⁸ Public patent sales are also thought to increase the efficiency and transparency of the patent market.²⁸⁹

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

²⁸⁸ Mark A. Lemley & Nathan Myhrvold, *How to Make a Patent Market 2* (2008).

²⁸⁹ Michael Risch, *Patent Portfolios as Securities*, 63 Duke L. Rev. 89, 93 (2013).

the public exchange, infringing companies might be willing to settle directly with the small innovator without the need for the patent shopper middleman.

2. 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 more prone to nuisance actions because they can acquire patents that are particularly suited to these actions for example because they are vague or because 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.”²⁹⁰

Further policy measures can also help, in particular 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.²⁹¹ 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

²⁹⁰ Feldman, *supra* note 282, at 293.

²⁹¹ Cite Goodlatte bills.

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.²⁹²

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. Including infringement contentions at the pleading stage has been suggested in several Congressional bills, however, these bills would require heightened pleading for all patent cases. This is overinclusive because in many infringement actions the patentee may not know precisely which claims are at play because the infringing behavior is internal process or trade secret of the defendant. It is therefore not advisable to require filing infringement contentions for all pleadings. However, patent shoppers who conduct an infringement analysis before acquiring the patent will have better information about infringement than the average patentee. Additionally, if the patent shopper has already filed multiple 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.

3. 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 patent 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 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.

²⁹² Feldman, *supra* note 282, at 287-88.

Further, policy could require that patent acquirers seeking to purchase patents in anticipation of litigation disclose any potential litigation targets to the patent seller in order to avoid information asymmetry in subsequent bargaining and 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 innovation.²⁹³

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.²⁹⁴ Resultantly, many states have responded by placing caps on the percent of any damages that may go to the lawyer.²⁹⁵ 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 would also, by allowing the inventor some say in enforcement decisions, might mitigate some of the most egregious types of enforcement.²⁹⁶

However, this strategy also has disadvantages. Inventors might prefer outright sale of a patent to avoid risk and obtain money up front.²⁹⁷ 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 implementability challenges. 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 Company 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

²⁹³ Section X, *supra*.

²⁹⁴ 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, 1349 (1996).

²⁹⁵ Cite.

²⁹⁶ Balganes, *supra*.

²⁹⁷ Alienability of Claims, *supra*.

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, differentiating 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 never 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 myths around characters such as the inventor,²⁹⁸ the audience,²⁹⁹ and the infringer.³⁰⁰ The narrative of the traditional, *ex ante*, model of patent use is perhaps among the most powerful preconceptions that guide patent law.³⁰¹ 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 trolls and large companies.

As compared to the traditional model, the shopping model shifts the story of

²⁹⁸ 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 18, at 54 (“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.”).

²⁹⁹ 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) (“it 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.”).

³⁰⁰ 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, 202-08 (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 Experimental Use Exception to Patent Infringement for Biomedical Research*, 76 WASH. L. REV. 1, 3-5 (2001).

³⁰¹ *See* Cotropia, *supra* note 18, at 54.

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.³⁰² 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. Prior work has also shown that patent trolls, many of whom are shoppers, win damage awards that are a staggering 4.5 times higher than non-patent trolls.³⁰³ This may be because patent trolls are shopping for patents and infringement actions that are likely to bring the highest rewards. In addition, prior work has found that shoppers, both PAEs and companies with large patent portfolios, are more likely to win litigation using core, inner portions of their patents, rather than the periphery of the patent.³⁰⁴ Litigation in the core portions of the patent is advantageous for the plaintiff because it means that they are more likely to win on both validity and infringement.³⁰⁵ The preferential use of core portions of the patent by shoppers may occur because shoppers are able to select a patent where the infringement falls into the core portion of the patent.³⁰⁶

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

³⁰² John R. Allison, Mark A. Lemley, & David L. Schwartz, *Understanding the Realities of Modern Patent Litigation*, 92 TEX. L. REV. 1770, 1796 (2014).

³⁰³ PricewaterhouseCoopers, *2015 Patent Litigation Study* 4 (2015), <https://www.pwc.com/us/en/forensic-services/publications/assets/2015-pwc-patent-litigation-study.pdf>.

³⁰⁴ Cite Hoover paper

³⁰⁵ *Id.*

³⁰⁶ *Id.*

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literature about the normative effects of patent trolls and patent portfolios.

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