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'Holding Up' and 'Holding Out'

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“Holding up” and “Holding Out”

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“Holding up” and “Holding Out”

Colleen Chien¹

Abstract

Patent “hold-up” and patent “hold-out” present important, alternative theories for what ails the patent system. Patent “hold-up” occurs when a patent owner sues a company when it’s most vulnerable – after it has implemented a technology – and is able to wrest a settlement because it’s too late for the company to change course. Patent “hold-out” is a term I use to describe the practice of companies routinely ignoring patents and resisting patent owner demands, because the odds of getting caught are small. Hold-up has arguably predicted the current patent crises – the smartphone wars, standards patents, or trolls all involve the ex-ante assertion of technology patents. Hold-up theory has been embraced by thought leaders and fueled the current drive by Congress and President Obama to reform the patent system. In this essay, I make the counterintuitive case that hold-up theory is wrong – or at least incomplete – and further, that what it is missing is full consideration of the other side – the side of hold-out. When large companies systematically “hold out” on patentees, they have no choice but to work with efficient patent enforcers or “trolls.” When small inventors can’t get their due in the marketplace due to unfair disadvantages, jurors just may give it to them in court. I argue that considering “hold-out” and “hold-up” together provide a more complete picture than focus on either story alone, and that doing so reveals surprising pathways to a better patent system – focused on the design, rather than the doctrine of patent law. Instead of trying to eliminate all technology patents, or to enforce all of them, we should try to price them appropriately and reduce the distortions they produce. Instead of trying to make patent law perfect, we should make it cheaper, more streamlined, and more equitable. To do so, lawmakers should prioritize: 1) getting patentees and targets on the same page as early as possible, through early dispositive and damages disclosures, 2) tightening the interfaces between the various patent agencies, and 3) making it cheaper to resolve low-value disputes, as capped for example by the defendant’s revenue exposure. Each of these steps would go a long way to curbing both hold-up and hold-out.

¹ Associate Professor, Santa Clara University School of Law. I thank Melissa Murray, Courtney Joslin, David Horton, Dennis Ventry, Darien Shankse, Michael Risch, Kyle Graham, David Schwartz, Brian Love, Eric Goldman, Carl Shapiro, Coryn Millsagle, Tej Singh, Teri Karabonik, and University of Chicago Law students Andrew Adair, Christopher Tosetti, Michael Kenstowicz for input and research assistance on earlier drafts, and Dirk Calcoen for his support.

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Introduction

Imagine you have a clever idea for a product and use it to start the business of your dreams. You open your doors, work day and night, and turn that idea into a hugely successful business with employees and customers. But then you get a letter from a patent “troll.”² The troll’s timing is deliberate – now that your product is fully developed and in the market, it’s too late for you to change it. You have no choice but to pay the troll or endure a lengthy lawsuit.

This story, adapted from a radio ad campaign profiled by NPR, explains the idea of patent hold-up – the practice of demanding patent royalties from a company when the company is most vulnerable – after it has implemented a technology. The resulting settlement is driven largely by the timing of the demand, rather than its merits.³ The patent holder “holds up” the seller, prompting a settlement.

Widely theorized and debated in academic and policy circles,⁴ the concept of patent hold-up has gained recent prominence by predicting the current patent “crisis,” including the smartphone wars between Apple, Samsung, and others,⁵ abuse of standards essential patents, and the rise of patent “trolls”⁶ – all through ex-post assertions of technology patents. Hold-up has drawn intense attention to the patent system, and not the good kind. Nobel-prize winner Gary Becker has blamed a “defective patent system [that] creates opportunities for hold ups and excessive litigation.”⁷ Federal Reserve economists Boldrin and Levine have called for the elimination of the patent system on the basis of “a gigantic hold-up problem.”⁸ President Obama has lamented what he sees as not just patent “hold-up,” but “hold-em-up”: when patent holders “hijack somebody else’s idea and see if they can extort some money out of them.”⁹

² Laura Sydell, “Taking The Battle Against Patent Trolls To The Public” NPR All Things Considered, August 30, 2013.

³ See *infra* Part 2.

⁴ See *infra* Part 2.

⁵ For a description of these wars and an examination of the patents involved in them, see Stuart Graham & Saurabh Vishnubhakat, *Of Smart Phone Wars and Software Patents*, JOURNAL OF ECONOMIC PERSPECTIVES, vol. 27, no. 1, 67 (Winter 2013).

⁶ A term that refers to entities that do not make products and are focused on the assertion of patents as their primary business model. Also more politely described as “patent assertion entities.” See Colleen V. Chien, *From Arms Race to Marketplace: The New Complex Patent Environment and Its Implications*, 62 HASTINGS L.J. 297 (2010).

⁷ Gary Becker, *On Reforming the Patent System*, THE BECKER-POSNER BLOG (Jul. 21, 2013), <http://www.becker-posner-blog.com/2013/07/on-reforming-the-patent-system-becker.html> (last visited Sept. 1, 2013).

⁸ Michele Boldrin and David K. Levine, *The Case Against Patents*, Federal Reserve Bank of St. Louis (September 2012) available at <http://research.stlouisfed.org/wp/2012/2012-035.pdf> (last visited Aug. 1, 2013).

⁹ See EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION 2 (2013) (quoting statements made by President Obama on February 14, 2013), available at http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf.

But while embraced by policymakers, public thinkers, and academics¹⁰ patent hold-up theory, I argue in this essay, is wrong, or at least incomplete. Policymakers are moving to curb litigation abuses: the White House has issued five executive actions and seven legislative recommendations to curb “frivolous litigation;”¹¹ the Federal Trade Commission (FTC) and Department of Justice are investigating patent trolls,¹² and abuses involving hold up using standards essential patents; Congress is holding hearings and introducing bills specifically targeted at these developments.¹³ As they do, I argue, public understanding of the patent enforcement dynamic must be calibrated to include not only patent hold-up but what I call patent hold-out: the practice of companies routinely ignoring patents and resisting patent owner demands, because the odds of getting caught are small.

Patent hold-out is widespread, for both legal and practical reasons. While the hold-up story is sympathetic to defendants, the hold-out story tells the plaintiffs’ side. Reconsider the story from before, but now put yourself in the patentee’s shoes, and imagine that the company selling the product is a large, not small, company. As an inventor you had the idea first and wanted to start a business on it. You tried, without luck, to get the product commercialized successfully, though you did get a patent. You find the technology being deployed by a large company and approach it to sign a license. The company ignores you and refuses to engage or license the patent, no matter how strong it is or reasonable your offer.¹⁴ The large company is “holding-out” on your patent demand.

Considering patent hold-up and patent hold-out narratives together, rather than either narrative alone, I argue in this essay, provides a more robust account of the patent enforcement dynamic. It also explains some of the shortcomings of patent hold-up theory.

For example, to reduce patent hold-up, advocates have recommended reforming patent remedies and reducing the number of problematic patents. Over the past years

¹⁰ Including myself, as described *infra* at Part ____.

¹¹ WHITE HOUSE, FACT SHEET: WHITE HOUSE TASK FORCE ON HIGH-TECH PATENT ISSUES (2013), *available at* <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues>.

¹² They use the more polite term “patent assertion entity.” See *Public Workshops: Patent Assertion Entity Activities*, THE U.S. DEPT. OF JUSTICE, <http://www.justice.gov/atr/public/workshops/pae/> (last visited Aug. 1, 2013), Edward Wyatt, *F.T.C. Head Seeks End to Misuse of Patents*, N.Y. TIMES (June 20, 2013), <http://www.nytimes.com/2013/06/21/business/ftc-head-seeks-end-to-misuse-of-patents.html> (last visited Aug. 1, 2013).

¹³ See, e.g., Matt Levy, *Patent Progress’s Guide to Patent Reform Legislation*, PATENT PROGRESS (Jul. 22, 2013) <http://www.patentprogress.org/2013/07/22/patent-progresss-guide-to-patent-reform-legislation/> (last visited Aug. 1, 2013) (summary of 6 anti-troll bills introduced in the 113th Congress).

¹⁴ *Chief Judge Rader: Improving Patent Litigation*, PATENTLY-O (Sept. 27, 2011) <http://www.patentlyo.com/patent/2011/09/rader-patent-litigation.html> (last visited Aug 3, 2013) (describing the related concept of the patent grasshopper that steals technology and “refuses to pay any license fee until his legs and claws are held to the proverbial litigation fire.”).

the Supreme Court, Federal Circuit,¹⁵ and Congress have made it harder to get injunctions and make unsubstantiated damages claims and easier to invalidate bad patents.

But instead of getting better, things have gotten worse. The smartphone wars have broken out,¹⁶ resulting, incredibly, in certain models being banned from the United States.¹⁷ Damage awards have gotten bigger, not smaller.¹⁸ Perhaps most worryingly, patent “trolls” have filed an increasing share of patent suits, half or more in 2012.¹⁹ Many of their campaigns are opportunistically brought against small companies²⁰ and end users who are ill-equipped to play the expensive “sport of kings” of patent litigation.²¹ The costs to companies have been estimated to be in the tens of billions,²² and companies small and large have reported significant operational impacts in surveys – delayed hiring or achievement of other milestones, shifting the business strategy, shutting down a business line or the entire business, and/or lost valuation.²³

¹⁵ The court of exclusive appellate jurisdiction over patent cases, though not patent counterclaims. See *Holmes Group, Inc. v. Vornado Air Circulation Systems, Inc.*, 535 U.S. 826 (2002).

¹⁶ See *infra* Part 2.

¹⁷ Certain smartphone models have been banned as a result of ITC exclusion orders. See, e.g., Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet, Inv. No. 337-TA-794 (June 4, 2013), available at <http://essentialpatentblog.com/wp-content/uploads/2013/06/337-TA-794-Limited-Exclusion-Order.pdf> (ordering the exclusion of Apple tablets (iPads) and smartphones (iPhones) from entry into the United States); Diane Bartz, *U.S. ITC Delays Word on Whether Samsung Infringes Apple's Patents*, REUTERS (AUG. 1, 2013) <http://www.reuters.com/article/2013/08/01/us-apple-samsung-patent-idUSBRE9701C120130801> (last visited Aug. 3, 2013) (describing the models as the iPhone 4, iPhone 3GS, iPad 3G and iPad 2 3G).

¹⁸ See PWC, 2013 PATENT LITIGATION STUDY 3 (2013) (“Prior to 2012, only three patent infringement damages awards eclipsed the \$1 billion mark. But last year alone, three cases. . . resulted in awards of \$1 billion or greater.”).

¹⁹ See EXEC. OFFICE OF THE PRESIDENT, at 5 (“Last year, PAEs brought over 2,500 lawsuits—62% of all patent suits.”); See also PWC, 2013 PATENT LITIGATION STUDY 3 (2013) (“[A]s of 2012, [patent assertion entities] accounted for the majority of patent infringement litigation filed in the United States.”). See also Robin Feldman, Thomas Ewing, and Sara Jeruss, “The AIA 500 Expanded: Effects of Patent Monetization Entities,” UC Hastings Research Paper No. 45, 2013, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247195 (finding the number to be closer to 60%); Steve Moore, “Probing 10 Patent Troll Myths – A Fractured Fairytale Part 2,” *IPWatchdog*, July 30, 2013, accessed August 29, 2013 <http://www.ipwatchdog.com/2013/07/30/probing-10-patent-troll-myths-a-fractured-fairytale-part-2/id=43754/> (finding 45% of cases filed between Sept. 17, 2011 and July 30, 2013 to be by a non-practicing entity).

²⁰ Colleen V. Chien, *Startups and Patent Trolls* (Santa Clara Univ. Legal Studies Research Paper No. 09-12, 2012), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2146251.

²¹ See, e.g., Colleen V. Chien & Ed Reines, *Why Technology Customers Are Being Sued En Masse for Patent Infringement and What Can Be Done* available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2318666 (reporting that out of the top 10 PAE campaigns, all involved allegations against technology end-users or implementers, often to the exclusion of the manufacturer.)

²² James Bessen and Michael Meurer, *The Direct Costs from NPE Disputes*, __ *Cornell Law Rev.* (forthcoming), __ (estimating firms accrued \$29B in direct costs in 2011), But see Jay Kesan and David Schwartz, *Analyzing the Role of Non-Practicing Entities in the Patent System*, 99 *CORNELL LAW REVIEW* (forthcoming 2014).

²³ See Chien, *supra* note __ at 1 (reporting on small company surveys); Joe Mullin, *Survey Says: Patent Attacks Scare Off Customers, Kill Business*, *ARS TECHNICA* (MAY 4, 2013) available at

Hold-out theory explains why some of these developments have happened, despite the enactment of many of the cures that hold-up theory has advocated. That patentees have been “held-out” on explains why they are increasingly partnering with patent assertion entities (PAEs) or “trolls.”²⁴ Juror sympathy to patentholders whose claims are ignored can explain large damages award.

A combined view reveals that the answer is not to submit wholesale to either account but to recognize the problems with the patent system that give rise to both. The high costs of litigating patents leads to hold-up, as small companies can’t afford to defend their use, as well as hold-out, as small inventors can’t afford to bring their suits and turn instead to trolls.

Embracing hold-up and hold-out narratives together reveals surprising pathways to a better patent system – focused as much on the procedure, design, and institutional constraints, as on doctrinal levers to effect change. These include 1) early dispositive rulings, 2) coordination across courts and agencies, and 3) alternatives to expert-driven damages determination. Rather than trying to eliminate all component technology patents, or to enforce all of them, the patent system should focus on reducing the transactions costs that feed both hold-up and hold-out.

Part I reviews hold-up theory and how it has fared in practice. Part II develops hold-out theory and explains how it fills in the gaps that hold-up theory has left. Part III discusses critiques of each view and asks which is more compelling. Part IV discusses the implications and recommendations that follow from a combined view. Part V concludes.

PART I: HOLD-UP

What do patent trolls and the smartphone and standards wars have in common? All have captured national attention, and all have been blamed on patent “hold-up.” What is hold-up?²⁵ It is when a “gap between economic commitments and subsequent commercial negotiations enables one party to capture part of the fruits of another’s investment.”²⁶ In the patent context, when a patent is asserted after a product is made, the patentee has the upper hand, not due to the economic value of the technology, but the high cost of changing the product to avoid the implicated technology.

<http://arstechnica.com/tech-policy/2013/05/survey-says-patent-attacks-scare-off-customers-kill-business/> (citing Colleen v. Chien, Best Practices in Patent Litigation Survey, slide 11, *available at* http://www.slideshare.net/slideshow/embed_code/20486191 (reporting on large company surveys)).

²⁴ See *infra* Part 2.

²⁵ Patent holdup is one type of hold-up, explored seminally in Oliver Williamson, *The Economic Institutions Of Capitalism: Firms, Markets, Relational Contracting* 61-63 (1985) (describing how transacting firms can engage in holdup when investments are made).

²⁶ Joseph Farrell, John Hayes, Carl Shapiro & Theresa Sullivan, *Standard Setting, Patents, and Hold-up*, 74 *Antitrust L.J.* 603, 603-604 (2007).

The Contexts of Patent Hold-Up

Early Examples

Complaints about hold-up type abuse date back to the early days of the patent system. A case from 1835 involved a patent over using coal in a forge. The patent was issued without any examination, a byproduct of a registration-based patent system²⁷ blamed for generating many frivolous or useless patents.²⁸ As a patent “speculator,” the patentee did not practice the patent on his own but instead demanded payment from blacksmiths under the simple logic that: “it will be worthwhile for every blacksmith to give me a couple of dollars for a right rather than contest it with me.”²⁹ Around that time, a petition signed by Pennsylvanians protested the patent system as being “liable to great abuse, and in itself [being] unjust and oppressive.”³⁰ Their main concern was a too-readily granted injunction, the fear of which drove defendants to pay for patent rights rather than “suffer the injury of stopping their means of livelihood.”³¹

The common behavior complained about was the assertion of patents on a product after it had already been made, and leveraging the fear of an injunction or lawsuit, rather than the merits of the technology, to wrest a settlement. In other words, patent hold-up.

Standards Hold-Up

170 years or so later, thinking about hold-up has been advanced primarily in the context of standards by prominent law and economics scholars and the Federal Trade Commission (FTC).³² To promote consistency and interoperability across products, industry participants now agree to promulgate a standardized protocol of deploying a technology like connecting to the internet. In return, holders of patents needed to practice the standard protocol agree to make their patents available on free or “reasonable and non-discriminatory” (RAND) terms.³³

²⁷ In accordance with the first Patent Act of 1793, patents were granted upon registration, rather than examination, of the application.

²⁸ Edward C. Walterscheid, *To Promote The Progress Of Useful Arts: American Patent Law And Administration, 1787-1836*, 322-331 (Fred B. Rothman 1998).

²⁹ *Id.* at 323 (describing the facts of *Delano v. Scott*, 1 Robb P. C. 700, 7 F. Cas. 378 (E.D. Pa. 1835)).

³⁰ Steven Lubar, *The Transformation of Antebellum Patent Law*, 32 *Tech & Culture* 932, 940 (1991).

³¹ *Id.* at 941.

³² See, e.g. the references cited herein, and *infra* note _____. For criticisms of hold-up theory, see, e.g. cites to Brooks, Geradin, Kieff, Spulber, and others *infra* Part II.

³³ See, e.g. ANSI Essential Requirements § 3.1.1, described in *Guidelines for Implementation of the ANSI Patent Policy*, available at http://mcsac.fmcsa.dot.gov/Documents/Aug2011/DOCUMENT_5--EOBR_Subcommittee_ANSI_Patent_Policy_from_Kraft_MCSAC_FMCSA.pdf (February 2011); ETSI Intellectual Property Rights Policy section 6, described in *ETSI Rules of Procedure Annex 6*, available at <http://www.etsi.org/images/ETSI%20IPR%20Policy%20November%202011.pdf> (Nov. 30, 2011). See also Benjamin Chiao, Josh Lerner, and Jean Tirole, *The Rules of Standard-Setting Organizations: An Empirical Analysis*, 38 *RAND Journal of Economics* 905 (2007).

A kind of super hold-up occurs when a patent holder manages to get its patent into the standards protocol without making a licensing commitment, or, despite their commitment, seeks an injunction. If a patent is truly “essential,”³⁴ its use cannot be avoided without sacrificing compliance with the standard. A wireless device that suddenly can’t connect to the internet isn’t worth much. The particular practice of patentholders suddenly emerging with their demands, after the standard has been promulgated, has been called patent ambush.³⁵ The number of patents implicated by standards can easily number in the thousands,³⁶ multiplying the risk.

What’s Wrong with the Patent System, According to Patent Hold-Up Theory

Across these contexts, then, three key ingredients of patent hold-up have consistently been identified: opportunistic “ex post” assertion, marginal patents, and remedies that disproportionately award the patentee. Each has been a target of patent reform efforts.

1. Ex Post Assertions

Whether in the form of patent “ambush,” or patent trolling, the problem with patent hold-up is the timing of assertions. In most cases it’s much more expensive to change an existing product than to change a product concept still in the design phase. The incentive to settle is driven by the desire to avoid these additional costs, rather just than the inherent value of the technology. Accordingly, patent-holders have rich incentives to bring their claims after a product has been developed and successfully marketed.

2. Bad Patents

According to its detractors, hold-up is also made possible by marginal patents.³⁷ If a product or standard incorporates thousands of patents, there’s a greater chance the single asserted patent is old or obvious. Complaints that software patents are “junk” are rife. Calls for reforming marginal patents range from the polite to the adamant: 1) make them better,³⁸ 2) invalidate them,³⁹ 3) abolish them,⁴⁰ and 4) abolish the patent system.⁴¹

³⁴ Many are not, [CC to add note]

³⁵ Thomas A. Hemphill, *Technology Standards Development, Patent Ambush, And U.S. Antitrust Policy*, 27 *Tech. in Society* 55, 57 (2005) (quoting R.A. Skitol, *What Should We Call The New Antitrust?*, San Francisco Economic Roundtable, available at <http://www.antitrustinstitute.org/node/10545> (May 2002)).

³⁶ See Mark A. Lemley and Carl Shapiro, *Patent Holdup And Royalty Stacking*, 85 *Tex. L. Rev.* 1991, 1992 (2007) (“As a striking example, literally thousands of patents have been identified as essential to the proposed new standards for 3G cellular telephone systems.”)

³⁷ Mark A. Lemley, *Ten Things To Do About Patent Holdup Of Standards (And One Not To)*, 47 *B.C. L. Rev.* 149, 150 (2007).

³⁸ Most often, by increasing examination resources. See, e.g. Colleen V. Chien, *Reforming Software Patents*, 50 *Hous. L. Rev.* 325, 353 (describing the extra scrutiny that have been applied to business method patent applications through the second pair of eyes review).

³⁹ E.g. once they have issued, through various post-grant review options, described infra at note ____

3. Disproportionate Remedies

Another source of hold-up are remedies that are out of proportion with the “crime” of component infringement.⁴² Patents confer the right to exclude, but if a patent covers only a small part of a big product, should the entire product be enjoined? No, in that case,⁴³ or when redesign would be really expensive, say advocates.⁴⁴ Outsized damages – that award a large percentage of revenue based on a small patent – are also to blame. When multiple royalties are sought, the result can be a total royalty rate that exceeds the entire revenue associated with the product, a phenomenon known as royalty stacking.⁴⁵

The Uptake of Patent Hold-Up Cautions and Cures

Concerns about patent hold-up have been hugely influential among policy audiences, including the judiciary. When the Supreme Court decided its landmark *eBay v. MercExchange* decision, Justice Kennedy specifically cited in his concurrence “injunction[s]...employed as a bargaining tool to charge exorbitant fees,” by firms that use patents “not as a basis for producing and selling goods but, instead, primarily for obtaining licensing fees.”⁴⁶ The decision made it harder to get injunctions, reducing the odds of getting one from about 95% to about 75%, and much less, when requested by a troll.⁴⁷ The Federal Circuit has further limited injunctive relief in component patent cases⁴⁸ through a strand of cases. And the district courts have been reluctant to enjoin products or award inflated royalties based on the assertion of standards essential patents.⁴⁹

The Federal Circuit, under the leadership of Chief Judge Randall Rader, has also changed damages laws. It is no longer appropriate for a court to assign a single patent, which may represent just one of thousands of patents, a quarter of the value of the product without some scientifically justified basis for doing so.⁵⁰ When royalty rates are

⁴⁰ “Them” meaning software patents; see, e.g., Vivek Wadhwa, *Why We Need To Abolish Software Patents*, Tech Crunch (August 7, 2010), online at <http://techcrunch.com/2010/08/07/why-we-need-to-abolish-software-patents/>

⁴¹ See, e.g., Michele Boldrin and David K. Levine, *The Case Against Patents*, Federal Reserve Bank of St. Louis Research Division, online at

⁴² Lemley, *supra* note __, at 165-166.

⁴³ See, e.g. Lemley and Shapiro, *supra* note 12, at 2036

⁴⁴ *Id.* at 2037-2039.

⁴⁵ *Id.* at 2013-2014.

⁴⁶ *eBay, Inc. v. MercExchange, LLC*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring).

⁴⁷ Colleen V. Chien and Mark A. Lemley, *Patent Holdup, The ITC, And The Public Interest*, online at <http://blogs.law.stanford.edu/pis2012/files/2012/05/Chien-Lemley-Patent-Holdup-the-ITC-and-the-Public-Interest.pdf>, 11-13, fig. 1 (2012).

⁴⁸ See, e.g. *Apple Inc. v. Samsung Electronics Co.*, No. 12-1507 (Fed. Cir. Oct. 11, 2012) (specifying that in component cases, patentees must prove that the particular caused the alleged harm, or a so-called “causal nexus.”).

⁴⁹ Described, e.g. *infra* Part II.

⁵⁰ See *Uniloc USA, Inc. v. Microsoft Corp.*, 632 F.3d 1292, 1315 (Fed. Cir. 2011) (rejecting the 25% rule).

calculated based on looking at the royalty rates in like circumstances, they really must be like circumstances.⁵¹ Awards must be based on reality.⁵²

Finally, policymakers have taken on the “bad patents” that fuel hold-up, according to its proponents. The Patent and Trademark Office (PTO) has put greater scrutiny on patent applications over certain types of inventions at the examination stage.⁵³ Congress has made it easier to challenge a patent’s validity once it has issued from the Patent Office. The America Invents Act, created “inter partes review”, which “allows patents to be challenged on several grounds of validity, without the deference to the patent that applies in courts.”⁵⁴ Business method patents are subject to more searching review.⁵⁵

What’s Happened – Patent Hold-Up Has Apparently Gotten Worse

With all of these developments, patent hold-up should be on the wane. But hold-up is arguably worse, not better. Seven years after eBay, an industry has developed around the types of companies about which Justice Kennedy expressed concern. Patent “trolls,” according to public perception, wait until the technology has been developed and commercialized in order to get the greatest royalties based on their assertions.⁵⁶ There are more than 15 publicly traded companies whose business model is primarily the assertion of patents.⁵⁷ As the Office of the President’s 2013 white paper reported, PAEs have brought an increasing number and share of patent suits, 62% of all suits in 2012, others have pegged the share of patent monetizer suits at closer to 58%⁵⁸ or 45%,⁵⁹

⁵¹ *Lucent Technologies, Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1332 (Fed. Cir. 2009), cert. denied, 30 S. Ct. 3324 (2010) (holding that the plaintiff cannot justify a jury’s lump sum award by providing evidence of other licenses that do not give lump sums).

⁵² See *Whitserve, LLC v. Computer Packages, Inc.*, 694 F.3d 10, 33 (Fed. Cir. 2012) (finding the district court’s royalty rate “out of line with economic reality”).

⁵³ Through the second pair of eyes review process, described, e.g. in Michael J. Meurer, *Patent Examination Priorities*, 51 Wm. & Mary L. Rev. 675, 676 (2009).

⁵⁴ Their history and rationale are summarized in Joe Matal, *Legislative History Of The America Invents Act: Part II of II*, 21 Fed. Cir. Bar J. 539, 598-605 (2012).

⁵⁵ Namely financial services data processing patents used in the practice, administration, or management of a financial product, (see Section 18,

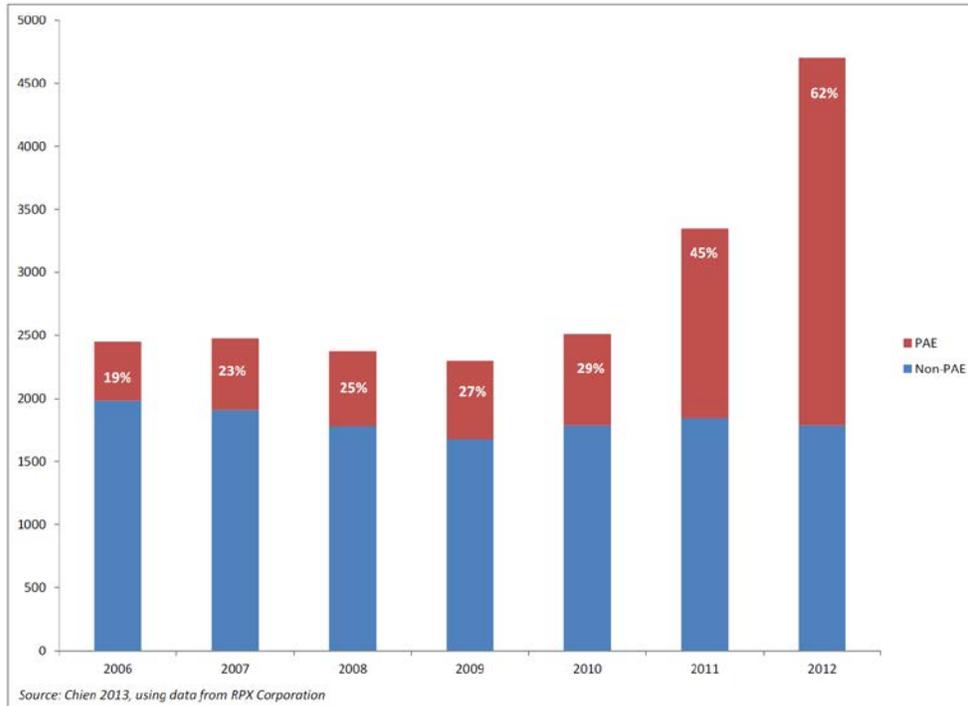
⁵⁶ Brian J. Love, “An Empirical Study of Patent Litigation Timing: Could a Patent Term Reduction Decimate Trolls Without Harming Innovators?,” *University of Pennsylvania Law Review*, vol. 161 (2013): 1309.

⁵⁷ Colleen V. Chien, *Patent Trolls By The Numbers*, Patently-O (March 14, 2013), online at <http://www.patentlyo.com/patent/2013/03/chien-patent-trolls.html>.

⁵⁸ Robin Feldman, Thomas Ewing, and Sara Jeruss, “The AIA 500 Expanded: Effects of Patent Monetization Entities,” *UC Hastings Research Paper No. 45*, 2013, http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2247195_

⁵⁹ Based on an analysis of 425 cases chosen at random filed between Sept. 17, 2011 and July 30, 2013; Steve Moore, “Probing 10 Patent Troll Myths – A Fractured Fairytale Part 2,” *IPWatchdog*, July 30, 2013, last accessed August 29, 2013,

Figure 1: Total number of Patent Cases Commenced, 2006-2012



(Source: Executive Office of the President, http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf)

Likewise, despite evolution of the damages caselaw, it is not clear that damages awards are going down and indeed, juries continue to make record awards.⁶⁰ Some of this is due to the time it will take for district courts to operationalize the higher standards of damages proof recently imposed by the Federal Circuit. But it may also be that, as described in the next section, policy discussions of “hold-up” and apportionment are falling on deaf (jury) ears.

Finally, the smartphone wars – between companies like Apple, Samsung, HTC and many others – have further bloodied the waters. The number of smartphone suits has quadrupled, to 103 since *eBay* was decided.⁶¹ Products have been banned as a result.⁶²

⁶⁰ Price Waterhouse Cooper, *Patent Litigation Study*, available at http://www.pwc.com/en_US/us/forensic-services/publications/assets/2013-patent-litigation-study.pdf, 3 (2013) (reporting on the award of three \$1B+ jury verdicts in 2012, as many as had ever been awarded previously; all were subsequently reduced).

⁶¹ See, e.g., Chris O'Brien, *Apple, Samsung To Return To Court In High-Stakes Patent Case*, Los Angeles Times (December 5, 2012), online at <http://articles.latimes.com/2012/dec/05/business/la-fi-smartphone-patent-war-20121206> (describing the quadrupling of smartphone related patents suits from 2006, when *eBay* was decided to 2011). See also David J. Kappos, *Investing In America's Future Through Innovation: How The Debate Over The Smart Phone Patent Wars (Re)Raises Issues At The Foundation Of Long-Term Incentive Systems*, 16 Stanford Tech. L. Rev. 485 (2013) (comparing the

Thus, at bottom, hold-up theory has described and perhaps even predicted an important set of problems. But it has faltered in providing solutions to them. What is hold-up theory missing? The paradoxical answer, I believe, is, the other side of the story – patent hold-out.

PART II: HOLD-OUT

While policymakers and academics have embraced the concept of patent hold-up, the patent system is administered by judges and juries. Their litigants tell a different story:

“I could not commercialize my invention alone, but the financial institutions I needed to partner with largely ignored me when I approached them with my invention. They were able to adopt my invention without me, and ignore my protests, because they knew I lacked the resources to take them to court and stop them.”⁶³

This familiar story⁶⁴ describes what I call patent “hold-out”⁶⁵ – the practice of companies ignoring patents and patent demands because the high costs of enforcing patents makes prosecution unlikely – or, in other words, because they can get away with it.

Each of these phenomena – the practice of companies ignoring high-tech patents, the high costs of detection and enforcement, in some cases, relative to the value of the invention, and the underenforcement of patents – has been observed and documented, but in isolation. Together, they create a cohesive theory of patent hold-out that provides an alternative explanation for the dysfunctions of the patent system.

The Contexts of Patent Hold-Out

smartphone wars to other historic patent battles). The number of infographics displaying the complex web of suits has itself multiplied accordingly, see, e.g. [cc to fill in]

⁶² See, e.g. 337-TA-710 (banning from the US HTC smartphones) and 337-TA-794 (banning from the US iPhones); the later ban was subsequently vetoed by the President (<http://online.wsj.com/public/resources/documents/AppleLetter.PDF>)

⁶³ Letter from Paul Ryan, Chairman and CEO of Acacia Research Corporation to Federal Trade Commission Regarding “Evolving IP Marketplace - Comment, Project No. P093900” (May 13, 2009), available at <http://ftc.gov/os/comments/iphearings/540872-00048.pdf>.

⁶⁴ Change financial institution to automobile industry, for example, and you have the plotline for “Flash of Genius,” the only full-length movie centered around the patent system of which the author is aware. See, e.g., Christopher Anthony Cotropia,, *The Individual Inventor Motif in the Age of Patent Trolls* (July 1, 2009) (unpublished manuscript), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1434921.

⁶⁵ This term has also been used to refer, in the standards context, to patentees who do not submit their patents to standards body; see Douglas Lichtman, *Patent Holdouts and the Standard-Setting Process* (U. Chi. Law & Econ., Olin Working Paper No. 292, 2006), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=902646,

1. Early Examples

While undertheorized, patent hold-out and the challenges associated with enforcing patents have generated policy concern for decades. When introducing his agenda for patent reform in the 1960s, President Lyndon B. Johnson cited the fact that, “the inventor is often faced with time consuming, costly and unnecessary legal action to enforce his rights”⁶⁶ as a key motivation. In 1990, the ABA passed a resolution favoring the creation of low-cost, small claims patent and copyright enforcement proceedings:⁶⁷ This move was motivated by the perception that increases in the cost of litigation “effectively shut out [claimants] from the federal courts.”⁶⁸

2. Reverse Patent Hold-Up

Within the patent standards context, patentholders have also worried about receiving less than they deserve. While hold-up worries about patentholders wielding undue leverage, hold-out is concerned with the opposite – that *implementers* (most often manufacturers) wield undue leverage, allowing them to use standards-essential patents and not pay for them. For example the manufacturer may argue that they don’t need a license because the patent is invalid or non-infringed because it is not truly essential.⁶⁹ Or they may use the technology without paying “under the guise that the patent owner’s offers to license were not fair or reasonable. The patent owner is therefore forced to defend its rights through expensive litigation.”⁷⁰ Manufacturers who behave this way are accused of engaging in “reverse hold-up,” a species of patent hold-out.⁷¹

3. Juror Sympathy and Patent Hold-Out

Juries are also perceived to be sympathetic towards patentees, and the road they must take to enforce their patents. Juries are more likely than judges to find for the

⁶⁶ Letter to Hubert H. Humphrey, President of the Senate and John W. McCormack, Speaker of the House, from President Lyndon B. Johnson Transmitting a Proposal To Modernize the Patent System (Feb. 21, 1967) (listing patent quality, the time and expense of getting and enforcing patents, and the speed of disclosure as priorities), *available at* <http://www.presidency.ucsb.edu/ws/?pid=28655>.

⁶⁷ ABA Res. 401-4, 1990 ABA SEC. PAT TRADEMARK & COPYRIGHT L. COMM. REP. 194.

⁶⁸ *Id.* at 194-95.

⁶⁹ See Damien Geradin, *Reverse Hold-Ups: The (Often Ignored) Risks Faced By Innovators In Standardized Areas* (Nov. 10, 2010) (unpublished manuscript), *available at* <http://ssrn.com/abstract=1711744> at 2-3.

⁷⁰ Electronic Devices, Including Wireless Communication Devices, Portable Music and Data Processing Devices, and Tablet Computers, Inv. No. 337-TA-794, ___ [clean cite]

⁷¹ *Id.*

patentee,⁷² less likely to overturn the patent office's decision to grant a patent,⁷³ and more likely to award greater damages.⁷⁴ Among patentee groups, the fewer the inventors, the more likely a patentee is to win.⁷⁵

This apparent pro-plaintiff bias extends to concerns about patent hold-out. In mock experiments, jurors have been known to “fret that the patentee has had to wait years to recover its damages, and they often ratchet the damages award upward to compensate.”⁷⁶ Mark Lemley has noted that courts do this too, in effect adding prohibited multipliers or “kickers” to damages awards because of a sense of “perceived unfairness” in the law's approach to calculating damages.⁷⁷

Despite instructions that tell jurors that they should award damages in order to compensate, not punish, jurors at times instinctively punish hold-out behavior. In the words of one mock juror: “[the defendant] had the option to license the patent and didn't, so now we are in punitive damages... and they have to feel the wrath.”⁷⁸ Because the manufacturer “held-out” during the negotiation phase, the patentee was forced to assert the patent later, and it's the manufacturer's bad luck that it made the wrong choice and implemented the invention anyway.

What's Wrong with the Patent System According to Patent Hold-Out Theory

The common complaints among these diverse accounts include the high costs of enforcement, risks that patentees have to endure to enforce their patents, and shirking

⁷² Kimberly Moore, *Populism and Patents*, 82 N.Y.U. L. REV. 69, 107-08 (2007) (finding jury v. bench trial patentee success rates of ~65% vs. ~52%, based on an analysis of all federal district court patent trials between 1990 and 2003); see also PWC, 2010 PATENT LITIGATION STUDY: THE CONTINUED EVOLUTION OF PATENT DAMAGES LAW 15 (2010), ___, available at <http://www.pwc.com/us/en/forensic-services/publications/assets/2010-patent-litigation-study.pdf> (finding jury v. bench trial patentee success rates of ~80% vs. ~53%).

⁷³ John R. Allison & Mark A. Lemley, *Empirical Evidence on the Validity of Litigated Patents*, 26 AIPLA Q.J. 185, 212-13 (1998) (finding a jury v. bench patent validity rate of 67.1% vs. 57.3%).

⁷⁴ While a direct comparison is difficult, due to selection bias and the impact of outlier jury demands, several reports have documented differences in award amounts. Compare Moore, “[j]udges make damage awards in excess of \$5 million in 17% of the cases, and juries award them in 21%,” and Michael J. Mazzeo, Jonathan Hillel & Samantha Zyontz, *Explaining the ‘Unpredictable: An Empirical Analysis of U.S. Patent Infringement Awards*, 35 INT'L REV. L & ECON. 58, 68 (2013) (finding the amount expected to be awarded by a jury trial to be 2.8 to 29.9 times that of an award by a judge, with an estimated effect of 9.2 times).

⁷⁵ Moore, *supra* note ___ at 107 (based on a regression analysis of ~2000 patent trials litigated between 1990 and 2003).

⁷⁶ William C. Rooklidge, *The Real Problem With Patent Infringement Damages*, 91 J. PAT & TRADEMARK OFF. SOC'Y 484, 487, 2009.

⁷⁷ Mark A. Lemley, *Distinguishing Lost Profits and Reasonable Royalties*, 51 WM. & MARY L. REV. 666, 662 (2009).

⁷⁸ Rooklidge, *supra* note ___ at ___.

by infringers. Each of these provides an alternative explanation to patent hold-up concerning what is wrong with the patent system.

1. Ex Ante Shirking (Not Ex Post Assertions)

The problem with hold-up assertions, according to patent hold-up theory, is that they take place *ex post*, after the product has already been commercialized and irreversible investments made. Indeed, that is the typical “troll” story, of a patentholder lying in wait, and launching surprise attack when a company tries to implement a patent. But patent hold-out theory explains the timing of these demands – that patent holders need to resort to *ex post* assertions because manufacturers ignore *ex ante* demands, and, in many cases don’t take steps to clear products prior to their release even though they are arguably in the best position to determine whether any patents read on their plans, since they know what they are or aren’t doing.⁷⁹ The “troll” isn’t lying in wait, but rather languishing, having asked repeatedly for help, and repeatedly been rebuffed.

The phenomenon of companies ignoring high- tech patents is well-documented.⁸⁰ From a potential defendant’s perspective, the concerns are practical – reading the patents of others can increase the risk of an enhanced damage award.⁸¹ Companies also often counseled not to engage or accept unsolicited offers to license or buy patents,⁸² knowing that engaging with the patent holder can often result in legal or settlement costs.⁸³ Since only 1-2% of patents is actually litigated,⁸⁴ it’s better to take your chances.

From the patentee’s perspective, though, when companies resist patent demands, they shirk their responsibilities. In accordance with one inventor’s account: “I did not have the means to approach and negotiate with these large companies who were more sophisticated, had more money, and would simply look to delay everything

⁷⁹ I am thankful to Michael Risch for making this point to me.

⁸⁰ See, e.g., FTC, EVOLVING MARKETPLACE (documenting through scores of testimony, that patent problems in the information technology (IT) sector have often “[led] firms to abandon patent ‘clearance’ efforts.” See also Colleen V. Chien, *Predicting Patent Litigation*, 90 TEXAS L. REV. 283 (2011); and Mark Lemley, *Ignoring Patents*, in THE FUTURE OF THE PATENT SYSTEM (2012).

⁸¹ Chien, *Predicting supra* note ____ at ____.

⁸² *Technology Development Companies and Individual Inventors*, IPNAV <http://www.ipnav.com/client-categories/inventors/> (last visited Aug. 4, 2013).

⁸³ Colleen V. Chien & Stefani E. Shanberg, *10 Ways Startups Can Deal with Patent Troll Demands*, TECHCRUNCH (Oct. 7, 2012) <http://techcrunch.com/2012/10/07/10-ways-startups-can-deal-with-patent-troll-demands/> (last visited Aug. 4, 2013).

⁸⁴ Chien, *Predicting supra* note ____ at ____.

through drawn out litigations.”⁸⁵ From this perspective, the relative size of the infringer as compared to the patentee, not the merits of the claim, dictate the outcome – that companies, especially big companies, hold-out.

2. Risky (Not Bad) Patents

Hold-out theory also finds fault, not with patents themselves, but with the risks that are required to enforce them. When a patent is asserted, there’s a risk it will be challenged and ultimately invalidated. A court can knock out a patent on a variety of bases– that the invention doesn’t cover protectable subject matter, the patent doesn’t enable, doesn’t adequately describe, etc.⁸⁶ Even if the patent is valid, the patent may not be infringed – if the terms aren’t interpreted “just so,” the contested behavior won’t be covered.⁸⁷

The patentee can survive the battle and still lose the war. A patentee may spend millions of dollars enforcing patent only to have it invalidated by the PTO.⁸⁸ Large jury verdicts are often reduced,⁸⁹ and what the claim terms mean overturned against plaintiffs about a third of the time, and even more often with high-technology patents.⁹⁰ Even after a license agreement is secured, patents can be challenged over and over again.⁹¹

It is for all of these reason, some argue, that patentees need big wins, to make up for the failures.⁹² Indeed, patents are perceived as risky assets,⁹³ heavily discounted in debt transactions.⁹⁴

⁸⁵ *Testimonials*, ACACIA RESEARCH GROUP LLC <http://acaciatechnologies.com/testimonials.htm> (last visited Aug. 4, 2013).

⁸⁶ See, e.g., Mark A. Lemley, *The Fractioning of Patent Law*, in INTELLECTUAL PROPERTY AND THE COMMON LAW (Shyamkrishna Balganesh, ed., Cambridge: Cambridge University Press, forthcoming 2012), available at <http://www.law.stanford.edu/publications/the-fractioning-of-patent-law-0>.

⁸⁷ Through a process called claim construction; see *id.*

⁸⁸ *Financing Patent Monetization*, IPNAV (Nov. 2012) <http://www.ipnav.com/resource-center/ideas-and-insights/financing-patent-monetization/> (last visited Aug. 4, 2013).

⁸⁹ See, e.g., PWC, 2013 PATENT LITIGATION STUDY 3 (2013) (reporting on the reduction of several high-dollar jury awards in 2012).

⁹⁰ Christopher Anthony Cotropia, *Is Patent Claim Interpretation Review Deference or Correction Driven?*, at Table 2 and 3 (May 16, 2013) (unpublished manuscript) (reporting that these findings, for the patentee, are overturned more often than findings for the defendant), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2265962.

⁹¹ Risch, patent challenges and royalty inflation

⁹² I am thankful to Michael Risch for making this point to me.

⁹³ See, e.g., Mark Lemley & Carl Shapiro, *Probabilistic Patents*, JOURNAL OF ECONOMIC PERSPECTIVES, vol. 19, 67 (2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=567883.

3. Disproportionate Litigation Costs (Not Disproportionate Remedies)

According to patent hold-up theory, what fuels patent abuses are outsized remedies. But patent hold-out finds fault in the high costs of litigation, relative to the value of the case – that is, it costs more to bring a suit than the suit is worth. The problem is, in other words, disproportionate litigation costs, not disproportionate remedies.

Disproportionate costs are particularly problematic for low-value disputes. According to the 2011 AIPLA Annual Economic Survey, when less than \$1 million is at risk, it costs \$916,000, on average, to litigate it through trial.⁹⁵ Litigation becomes even more unaffordable when both sides' costs are factored in. This is less likely to be the case when more than \$25 million are at risk, where the average cost of \$6 million per party is a fraction of the reward.⁹⁶

⁹⁴ Joseph W. Jennings, *IP Debt – The New Monetisation Option*, INTELLECTUAL ASSET MANAGEMENT (May/June 2014), 41, available at <http://www.ipnav.com/linkservid/C341533B-5056-9000-0331C4401FA78344/showMeta/0/>.

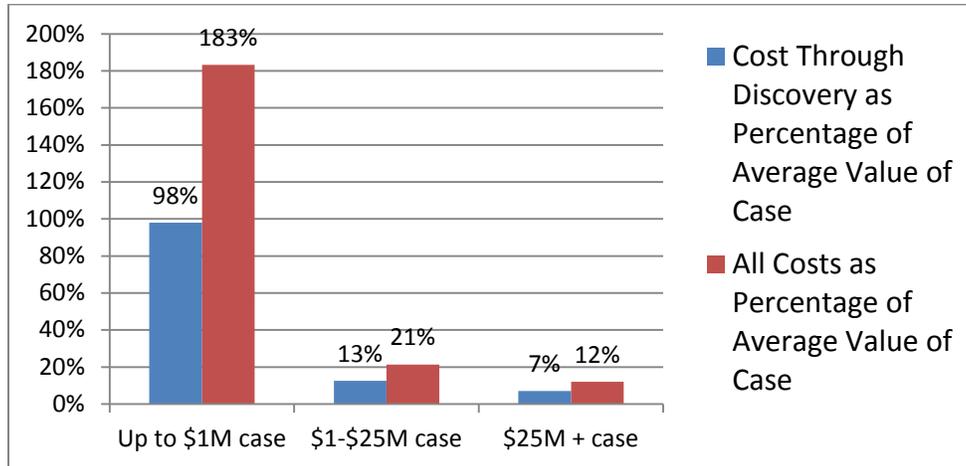
⁹⁵ AM. INTELLECTUAL PROP. LAW ASS'N LAW PRACTICE MGMT. COMM., REPORT OF THE ECONOMIC SURVEY I-153-I-154 (2011) [hereinafter "AIPLA REPORT"]. The 2011 AIPLA Report of the Economic Survey shows that the average cost of a patent infringement suit where less than \$1 million are at risk is \$490,000 through the end of discovery and \$916,000 inclusive of all costs. Where \$1-\$25 million are at risk, the average patent infringement suit costs \$1.633 million through the end of discovery and \$2.769 million inclusive of all costs. Where more than \$25 million are at risk, a patent infringement suit costs \$3.553 million through the end of discovery and \$6.018 million inclusive of all costs.

⁹⁶ *Id.* at I-154.

Per Party Cost in Patent Litigation, as a Share of Value of Case

Based on AIPLA 2011 Annual Economic Survey Figures

Source: Chien & Guo, 2013⁹⁷



⁹⁷ Colleen V. Chien & Michael J. Guo, *Does the US Patent System Need a Patent Small Claims Proceeding?* (Santa Clara Univ. Legal Studies Research Paper No. 10-13, 2013), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2249896. Calculations are based on mean costs and average case values, e.g. \$500,000 for the up to \$1 million range, \$12.5 million for the \$1-\$25 million range, and \$50 million for the greater than \$25 million range. These cost estimates are for one party in a one-patent lawsuit assuming non-contingent representation.

PART III: WHO IS RIGHT?

As with most things, the truth between these diametrically opposing views lies somewhere in between. In this Part, I explore the counterarguments and available evidence behind each theory to determine which narrative is right. I find that the rapidly emerging state of patent hold-up – as expressed through the smartphone and standards wars and the growth of patent trolls – and the impacts on innovation in the form of disrupted innovation present the most urgent concern. But I find that hold-up theory also has deficiencies that patent hold-out can address, explaining why hold-up cures haven't worked and the dynamics that reforms that need to take into account in order to be successful.

1. Critiquing Patent Hold-Out

a. Patent Non-Enforcement Is Good for Consumers and Competition

Although the hold-out story is compelling on a personal level, the social calculus must also include transaction and information costs. According to some, the underenforcement of patents is actually good thing to a point, because it “shelters” follow-on innovation from the costs of licensing and risks of liability.⁹⁸ Although this view may seem shortsighted, sustained innovation in information technology, despite the norm of patent acquisition and non-enforcement,⁹⁹ belies such a characterization. Making the converse point, patent enforcement has been accused of undercutting the “permissionless innovation,”¹⁰⁰ credited with fueling internet-based economic growth.¹⁰¹

In addition, the hold-out story assumes that inventors should get the full benefit of their inventions – a reasonable conclusion to draw from the statutory right to exclude¹⁰² that the statute promises. But such a result could be disastrous socially. Consumers and other producers should, and also do share in the benefits – according to one estimate, innovators capture, on average, only 2.2% of the total value of their

⁹⁸ Rebecca S. Eisenberg, *Patent Costs and Unlicensed Use of Patented Inventions*, 78 U. CHI. L. REV. 53, 59 (2011) (“The costs of the patent system provide shelter for infringing behavior that might otherwise lead to either licensing or liability, perhaps mitigating excesses in the patent system while retaining strong rights that motivated owners may enforce.”).

⁹⁹ Due in part to patent détente, see Colleen V. Chien, *From Arms Race to Marketplace: The New Complex Patent Environment and Its Implications*, 62 HASTINGS L.J. 297 (2010).

¹⁰⁰ Brad Burnham, *Software Patents are the Problem Not the Answer*, UNION SQUARE VENTURES (Feb. 19, 2010) <http://www.usv.com/2010/02/software-patents-are-the-problem-not-the-answer.php> (last visited Aug. 4, 2013).

¹⁰¹ Vinton Cerf, *Keep the Internet Open*, N.Y. TIMES (May 24, 2012) <http://www.nytimes.com/2012/05/25/opinion/keep-the-internet-open.html> (discussing “permissionless innovation”) (last visited Aug. 4, 2013).

¹⁰² 35 U.S.C. § 271 (2013).

innovations, other producers and consumers enjoy the rest.¹⁰³ The focus shouldn't be on trying to increase the returns to patentees to 100%, but on optimizing the total social return.

Still, it's hard to know where the right balance should be. The hold-out story is consistent with the theories of thinkers like David Teece that a lack of complimentary assets makes it harder for innovators to appropriate the value of their technologies,¹⁰⁴ and the Schumpeterian view that perfect competition provides inadequate incentives to innovate.¹⁰⁵ However, given how incremental advances are in high-tech, it is also suspected that many patented innovations would have happened anyway, regardless of the patent.

b. If Patent Hold-Out is the Problem, Patent Assertion Entities Aren't a Good Solution

In light of current policy debates, then, the more important question may be, not should we be worried about hold-out, but, does the current model of patent assertion do a good job of rewarding and incenting innovation? On this score the available empirical evidence is not encouraging: the transactions costs associated with PAE assertions appear, in some cases, to dwarf the return to the inventors.¹⁰⁶ Many PAE assertions focus on the “wrong” target – small companies¹⁰⁷ and end users¹⁰⁸ that appear to have been named in order to generate nuisance-fee settlements. In the case of user suits, the party that can most efficiently resolve the dispute, the supplier, has often been left off.¹⁰⁹ The returns generated from such campaigns, then, don't reflect the economic value of the patent, but the avoidance of legal costs – which comprise pure rent-seeking.

¹⁰³ William Nordhaus, *Schumpeterian Profits in the American Economy: Theory and Measurement* (National Bureau of Economic Research Working Paper Series, Working Paper 10433, 2004), available at <http://www.nber.org/papers/w10433>.

¹⁰⁴ David J. Teece, *Profiting From Technological Innovation: Implications For Integration, Collaboration, Licensing and Public Policy*, 15 RES. POL. 285, 288-90 (1986).

¹⁰⁵ JOSEPH A. SCHUMPETER, *CAPITALISM, SOCIALISM AND DEMOCRACY* (3d ed. 1950).

¹⁰⁶ See, e.g., James E. Bessen, Michael J. Meurer & Jennifer Laurissa Ford, *The Private and Social Costs of Patent Trolls* (Boston Univ. School of Law, Law and Economics Research Paper No. 11-45, 2011), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1930272 (estimating that only 26% of licensing revenues, on average, go to inventors); and Colleen V. Chien, *Patent Assertion Entities*, Presentation to the Dec 10, 2012 DOJ/FTC Hearing on PAEs, 56 (citing an RPX survey covering 900 litigation, in the majority of them legal costs exceeded settlement costs). But see Colleen V. Chien, *Startups and Patent Assertion*, New America Foundation 2013 (forthcoming). Documenting a wide variety of deal points among innovators and the PAEs that monetize their patents (lump sum or “ranging from 10% to 67%, sometimes in combination with an upfront payment.)

¹⁰⁷ A high percentage of unique defendants to PAE cases make \$10M or less. See, e.g., Chien, *Startups* *supra* note ____, accord Bessen & Meurer, *supra* note ____ at ____.

¹⁰⁸ Chien & Reines, *supra* note ____ at ____.

¹⁰⁹ Chien & Reines, *supra* note ____ at ____.

In addition, the economics of patent assertion create their own distortions. The economies of scale that make patent assertion worthwhile require patent assertion entities to be very selective, choosing carefully a few patents to assert over and over.¹¹⁰ This approach, while practical, necessarily shuts out many patents and patentees. That might be a good thing, filtering out many low-value patents, but it doesn't provide a complete solution to hold-out— as PAEs can't vindicate the rights of every deserving patentholder. In addition, the patents that are the most valuable from an assertion perspective – old, broadly worded, detectably infringed, and understandable by a jury - aren't necessarily the ones that have contributed the most to the field.

For patent assertion to better address the problem of patent hold-out, then, it should cost less, return more to inventors, focus on the right targets, and reward true *technical* contribution – for example where there is actual theft, high patent quality, or industry recognition – rather than *patent* contribution.

2. Critiquing Patent Hold-Up

a. Not All Hold-Up is Created Equal

Nor does hold-up theory get everything right. By casting the mere legal act of patent enforcement in pejorative terms, “hold-up” causes suppliers to dig in, refuse to pay, and spend money resisting meritorious assertions. To the extent that hold up theory encourages a misimpression that all patents are bad it feeds the inefficiencies that flow from company refusals to pay.

In addition, critics have said that hold-up doesn't really exist because the reputational costs and repeat player nature of interactions between patentees and infringers encourage patentees to “play nice.”¹¹¹ They prefer private ordering arrangements, for example standards rules and patent pools,¹¹² to government solutions.

¹¹⁰ Colleen V. Chien, *Turn the Table on Patent Trolls*, FORBES (Aug. 9, 2011) (describing the PAE business model as one that is based on economies of scale and relies on using the same patents, in the same venues, using the same contingent fee lawyers) (last accessed Aug. 4, 2013); accord Risch, *supra* note ____ Patent Troll Myths.

¹¹¹ Richard A. Epstein, F. Scott Kieff & Daniel F. Spulber, *The FTC, IP, and SSOs: Government Hold-Up Replacing Private Coordination*, J. COMP. L. & ECON., 8(1), 10.

¹¹² *Id.*; see also Robert Merges, *Institutions for Intellectual Property Exchange: The Case of Patent Pools*, in INTELLECTUAL PRODUCTS: NOVEL CLAIMS TO PROTECTION AND THEIR BOUNDARIES (Oxford Univ. Press, 2001) (Rochelle Dreyfuss, ed.).

These criticisms have their greatest force when applied to conflicts between repeat players who have symmetric stakes and participate in private ordering activities, for example standards-setting.¹¹³ Indeed, those who have looked for evidence that hold-up has actually occurred in this context have found a lack of empirical evidence.¹¹⁴

But these reassurances are much less persuasive when applied to certain types of patent “trolls.” An entity formed solely to assert a single patent portfolio¹¹⁵ is by definition not a repeat player,¹¹⁶ and does not have a market reputation to defend. It can’t sign licensing commitments in exchange for being part of a standard when it only acquires the patents long after the standard has been formed. The measurable harm to innovation – in the form of delayed hiring, business pivots, and the killing of products and product lines – has also been documented.¹¹⁷

History also belies the assertion that private ordering can provide a complete solution to patent trolling – during the two historical eras of trolling most similar to the present, Congressional, PTO, and court leadership were key to restoring patent equilibrium.¹¹⁸

In addition, the enforcement “norm” typically associated with “trolls” is increasingly being engaged in by operating companies. There has been a proliferation of litigation involving standards-essential patents,¹¹⁹ and filing of SEP cases at the ITC,¹²⁰ an act seen as largely inconsistent with the commitments to license. This development has proven so troubling that the DOJ, FTC, and President have weighed in to stop it.¹²¹ Based on a survey I did among over 100 companies, 44% said that they had monetized or were thinking about monetizing their patents.¹²²

¹¹³ Roger G. Brooks, *Patent ‘Hold-Up,’ Standards-Setting Organizations And The FTC’s Campaign Against Innovators*, 39 AIPLA Q. J. 435, ___ (2011).

¹¹⁴ *Id.* (citing comments from standards setting bodies, companies, and one professor to support its position).

¹¹⁵ Tom Ewing & Robin Feldman, *The Giants Among Us*, 2012 STAN. TECH. L. REV. 1 (2012), *available at* <http://stlr.stanford.edu/pdf/feldman-giants-among-us.pdf> (describing the practice of PAE Intellectual Ventures setting up a shell company for each patent acquisition).

¹¹⁶ Though if owned by a larger well-known patent assertion entity it may be.

¹¹⁷ See Chien, *supra* note ___ (describing small and large company surveys by Chien).

¹¹⁸ Chien, *Reforming supra* note ___; see also EXEC. OFFICE OF THE PRESIDENT, PATENT ASSERTION AND U.S. INNOVATION, *available at* http://www.whitehouse.gov/sites/default/files/docs/patent_report.pdf.

¹¹⁹ See, e.g., Litigations Involving SEPs, THE ESSENTIAL PATENT BLOG <http://essentialpatentblog.com/list-of-litigations-involving-seps/> (last visited Aug. 4, 2013). (listing the large numbers of ITC cases involving SEPS)

¹²⁰ *Id.*

¹²¹ ¹²¹ Letter to Irving A. Williamson, Chairman of the International Trade Commission, from Michael B. G. Froman, U.S. Trade Representative, Regarding Disapproval of the U.S. ITC’s Determination in the Matter of Certain Electronic Devices, Including Wireless Communication Devices, Portable Music and Data

b. The Hold-Up Cure of Fixing Remedies Has Not Yet Solved The Problem; Hold-Out Explains Why

Finally, hold-out theory exposes the weaknesses of hold-up “cures,” and why despite apparent progress, fights involving patent hold-ups have become more, not less frequent. Hold-up theory has largely been concerned with large defendants and the use of high switching costs to gain leverage. The focus on remedies follows from this concern. However, hold-up theory has, in doing so, ignored small defendants, and the reality that for them, it is the cost of defense,¹²³ not the ultimate remedy, that creates undue leverage. If it costs close to a million dollars to defend a case,¹²⁴ even if there is no threat of injunction or damages about a certain amount, it will always be cheaper to settle.

The appeal of hold-out to judges and jurors also explains why courts may resist the changes to damages methodologies motivated by hold-up concerns. Jurors' “willingness to disregard the boundaries of law and evidence”¹²⁵ to arrive at the outcome they believe to be fair, suggest that changing the law alone will not be the answer to reducing hold-up. The answer is, in part, to better educate jurors on the role of the patent system within the broader social context and about the impacts of litigation and remedies on defendants, in particular small defendants, as well as to better police the evidence jurors are allowed to see. Injunctions liability for component inventions should be clarified and communicated, so that courts have appropriate guidance when given the “nuclear option” of an injunction.

PART IV: WHAT SHOULD BE DONE?

Combining “hold-out” and “hold-up” perspectives reveals surprising pathways to a better patent system – focused on the design, rather than the doctrine of patent law. Rather than trying to eliminate all technology patents, or to enforce all of them, we should enable challenges to their validity to happen early and inexpensively and price them appropriately and more importantly, in a way that laypeople can determine, in proportion to their value. Instead of trying to get patent law perfect, we should make it cheaper, more streamlined, and more equitable.

Processing Devices and Tablet Computers, Investigation No. 337-TA-794, *available at* <http://online.wsj.com/public/resources/documents/AppleLetter.PDF>.

¹²² Colleen V. Chien, *Best Practices in Patent Litigation* (forthcoming).

¹²³ Chien, DOJ/FTC Hearing, *supra* note ____ at 12-19.

¹²⁴ AIPLA, *supra* note ____.

¹²⁵ Rooklidge, *supra* note ____, at ____.

This part considers four of the more promising ways of doing so: 1) reducing duplication by improving coordination between the venues; getting the patentee and accused on the same page as early as possible through 2) early adjudication of dispositive issues, including patent validity and 3) early damages disclosure and non-expert damages methodologies, 4) promoting proportionality between the economic value of a patent and the cost of fighting about it, including by penalizing hold-up and hold-out, through fee-shifting.

Reduce Duplication, Improve Coordination¹²⁶

After a patent has issued, its validity can be contested in three different venues – the PTO, the district court, and the International Trade Commission, also known as the “unholy trifecta” of patent law.¹²⁷ The ITC and district court apply different standards for making this determination than does the PTO (which has, within the PTO, four different ways to do so),¹²⁸ and all three venues offer different procedures.

A patent can be enforced in both the district court and the ITC, but the remedies and procedures available to the parties are different. While district court decisions bind the ITC, the inverse is not true, even though the ITC decides cases much more quickly than the district court.¹²⁹ Within the district court, multiple cases on the same patent can be filed within different district courts, and often are, for forum shopping and jurisdictional reasons.

These complexities create incentives for litigants to litigate the same issues in multiple venues. For example, over 90% of ITC patent cases in 2012 had a district court counterpart.¹³⁰ PAE cases are routinely filed in multiple districts.¹³¹ The different standards each use invite waste by defendants and plaintiffs, and make it much more likely that cases will be settled for the cost of defense, rather than based on the merits of the case.

¹²⁶ See overview in “Reducing Litigation Abuse by Reducing the Government’s Role in the Patent System”

Testimony of Colleen V. Chien before the Subcommittee on Courts, Intellectual Property and the Internet, April 16, 2013 (“2013 Chien Testimony”).

¹²⁷ Id.

¹²⁸ As of September 2012: (1) Post-Grant Review (PGR); (2) modified Inter Partes Review (IPR); (3) transitional Post-Grant Review for business method patents; (4) Ex parte reexam. Summarized in [http://www.kirkland.com/siteFiles/Publications/Article%20PDF%20-%20PRINTING%20ALLOWED%20-%20Intellectual%20Property%20Magazine%20\(Post-Issuance%20Patent%20Review\)%20Steadman%20byline%20\(Nov%202011\).pdf](http://www.kirkland.com/siteFiles/Publications/Article%20PDF%20-%20PRINTING%20ALLOWED%20-%20Intellectual%20Property%20Magazine%20(Post-Issuance%20Patent%20Review)%20Steadman%20byline%20(Nov%202011).pdf)

¹²⁹ Chien, Patently Protectionist supra note ____, (Abstract)

¹³⁰ 2013 Chien Testimony, supra note ____, at ____.

¹³¹ Chien, Startups and Patent Litigation (forthcoming)

One way to decrease the incentives to file in multiple venues is by tightening the interfaces – by staging the various proceedings so that only one at a time is being heard and they bind each other – and reducing the differences between them. In exchange for patent validity challenges at the PTO being brought within a certain period of time after a case is filed, the district court should stay the case, and the PTO should be able to hear the same grounds of validity that are available in the district court. Since this could introduce delays to the plaintiff receiving relief, accelerated review, for a fee paid by the defendant requesting review, could be required. When the ITC hears a case, it should apply the same standard as does the district court to the decision of whether or not to grant an injunction. Expanding the bases for post-grant review and ensuring that PTO challenges result in a stay, and making these efforts have preclusive effect in the district court, but still be appealable, and harmonizing injunctions law between the ITC and district court,¹³² would further these aims.

Another source of duplication arises when hundreds of adopters of a technology, rather than the single supplier of the technology, are pursued for patent infringement. Though sometimes there are practical reasons for these suits, they are also happening with increasing frequency because customers are generally unsophisticated and can't count on manufacturers to step in and assume the defense.¹³³ Absent compelling reasons, the pathways to manufacturers standing behind their products should be removed.¹³⁴

Get the Patentee and Accused On the Same Page As Quickly as Possible About the Merits of a Case

Holding up and holding out happen because the parties disagree about whether the target needs a license. Among the various assessments that need to be made in order for a court to rule on, some are dispositive and do not require intensive fact discovery. For defendants, these include the availability of defenses like exhaustion and certain grounds of patent invalidity (like patentable subject matter). For plaintiffs, these may include the meaning of a particular claim term, or whether the target knew about the patent. Early determination of these dispositive issues would reduce the risks for both plaintiffs and defendants.

¹³² Each of these concepts is alluded to in President Obama's legislative recommendations issued on June 4, 2013 <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues> (at 3, 5)

¹³³ See, e.g. Chien and Reines, supra note ____.

¹³⁴ See, e.g. Chien and Reines, supra note ____ (advocating bolstering of DJ jurisdiction and intervention rights for suppliers, prioritization of dispositive issues, stay of customer discovery, and interventions that would make end users less attractive litigation targets.)

Given how diametrically opposed the patent hold-up and hold-out perspectives are, what they commonly endorse deserves careful attention. In the spring and fall of 2013, I surveyed 500 in-house, plaintiffs, and general attorneys about their perspectives on various patent reforms. The intervention about which there was the strongest finding and consensus among the three communities was the value of judges deciding early summary judgments motions – over 90% of plaintiff’s lawyers, outside counsel, and defendants and defendant/plaintiff lawyers thought that practice would be very or somewhat effective at increasing efficiency in patent adjudication, with 76% of inside counsel in companies, 72% of outside counsel generally, and close to 50% of plaintiff’s counsel believing the intervention to be “very effective.”¹³⁵ In a follow-up discussion of these results, judges said that they would be more inclined to do so if the parties agreed to have all of their SJ motions heard at once, rather than bringing them serially.¹³⁶

The ITC has taken the lead in early disposition by implementing a pilot program that provides for an early determination within the first 100 days of a case.¹³⁷ The program has been praised for reducing costs and narrowing the scope of the hearing, and includes features like staying discovery on all issues other than case-dispositive issues.¹³⁸ The district court should follow suit, through legislative or judicial prioritization of cases.

Get the Patentee and Accused On the Same Page As Quickly as Possible About the Value of a Case Through Alternatives to Expert-Driven Damages

Hold up and hold-out also occur because the parties disagree on the value of a patent and have very different reference frames for calculating this value – parties are often loath to provide sensitive financial information about sales, profits or past licenses, for example, until they have to. This disagreement is fueled by non-specialist juries and a flexible legal standard for calculating damages that enables damages experts to come to diametrically opposing opinions about the value of a patent, driving even further apart parties’ expectations. Steps should be taken to reduce the gap in expectations between the parties and facilitate earlier dispute resolution.

Patentholders and their targets should know ahead of time what the range of a patent’s worth, instead of relying on courts to make the determination. One way to do so

¹³⁵ Chien, Best Practices, supra note ____.

¹³⁶ Id.

¹³⁷ First implemented in Inv. No. 337-TA-874, Certain Products Having Laminated Packaging, Laminated Packaging, and Components Thereof, followed by *Pilot Program Will Test Early Disposition Of Certain Section 337 Investigations*, United States International Trade Commission, online at http://www.usitc.gov/press_room/documents/featured_news/337pilot_article.htm. (posted July 2013)

¹³⁸ Robert Rogers, *Benefits Of ITC’s New Early Disposition Pilot Program*, Law360 (July 16, 2013), online at <http://www.law360.com/articles/457675/benefits-of-its-s-new-early-disposition-pilot-program>

would be to allow parties to give up damages precision in favor of speed: as one prominent alternative solutions provider relayed to me lawmakers should “[f]ocus on speed—business and commerce need certainty and speed—not Georgia Pacific factors after 36 months.” Mechanisms that arguably rate low on precision but high on speed and certainty include rate tables¹³⁹ mediation,¹⁴⁰ or employing a simplistic formula (for example based on lines of code or total patents on the feature based on a keyword search) for reducing the information and transactions costs associated with patent valuation should be explored. To the extent that other “rules of thumb” are used in real life to determine the value of ex ante licenses, those should be favored. If a patent is only one of a thousand that a product reads on, and is worth less than a cent per unit at best, as has been determined in the case of Microsoft Windows’ products practicing Motorola’s H.264 patents,¹⁴¹ and the parties both know that ahead of time, perhaps paying that rate will be a better option than arguing about its enforceability.

Promote Proportionality

Finally, the patent system should provide incentives and ways for cases to be resolved at a cost that is proportional to their value. First, driving up the costs of the other side – via holding up or holding-out – would be penalized, for example, by making two-way fee-shifting the norm and requiring parties to pay beyond core discovery,

To proportionally rightsize patent proceedings, options like excluding attorneys,¹⁴² tele-conference based trials, eliminating unnecessary discovery and witnesses, eliminating juries,¹⁴³ and capping damages, based on, for example, revenue or cost of component parts,¹⁴⁴ have been suggested by those on both side of the

¹³⁹ See, e.g. (proposing “royalty rates for various classes of inventions and industries be [established by a ‘royalty rate commissioner]” Intellectual Property Creators Association, “Comments to Docket PTO-P-2012-0050; Patent Small Claims Proceedings,” *Comment on a Patent Small Claims Proceeding in the United States*, RFC Docket No. PTO-2012-0050, Apr. 29, 2013, http://www.uspto.gov/ip/global/patents/comments/patent_small_claims_court_rev_3.pdf.

¹⁴⁰ Mark A. Lemley, Mark A. and Carl A. Shapiro, *A Simple Approach to Setting Reasonable Royalties for Standard-Essential Patents* (March 30, 2013). Stanford Public Law Working Paper No. 2243026. Available at SSRN: <http://ssrn.com/abstract=2243026>

¹⁴¹ Apple v. Motorola Decision ____ (set a royalty of 0.55 to 16.39 cents per unit for Windows and Xbox products for access to Motorola’s H.264 SEP patent portfolio)

¹⁴² Intellectual Property Creators Association (IPCA), “Comments to Docket PTO-P-2012-0050; Patent Small Claims Proceedings,” *Comment on a Patent Small Claims Proceeding in the United States*, RFC Docket No. PTO-2012-0050, Apr. 29, 2013, http://www.uspto.gov/ip/global/patents/comments/patent_small_claims_court_rev_3.pdf

¹⁴³ Matthew Tanielian and Alex V. Chachkes, “Comments of the Coalition for Patent Fairness Regarding the Creation of a Patent Small Claims Court in the United States,” *Comment on a Patent Small Claims Proceeding in the United States*, RFC Docket No. PTO-2012-0050 , Apr. 30, 2013, http://www.uspto.gov/ip/global/patents/comments/753609930-1_cpf_-_letter_to_uspto.pdf.

¹⁴⁴ Michael Risch, “Request for Comments on Patent Small Claims,” *Comment on a Patent Small Claims Proceeding in the United States*, RFC Docket No. PTO-2012-0050, Mar. 9, 2013, http://www.uspto.gov/ip/global/patents/comments/comments_to_us_pto_re_patent_small_claims.pdf

issue¹⁴⁵ and could be offered to litigants as options for pursuing low-cost and efficient relief. The value of the case should be determined based on using defendant's product revenue as a cap. Many litigants would likely give up due process for certainty, and low transaction costs.

PART V: CONCLUSION

There are two sides to every story, and patent enforcement is no exception. But focusing on the problems that fuel both the over enforcement of patents, or patent hold-up, and the under enforcement of patents, or patent hold-out – namely the high costs, uncertainty, and duplication that reside in the patent system – both problems can be reduced. Scholars and others have focused for decades on getting patent law right – by having doctrinal debates and engaging in substantive policy-making. But in the meantime, they have created a patent law that no longer works for businesses and others in the innovation ecosystem. The design, as much as the doctrine of patent law, matters; this essay is meant to stimulate further thinking and dialog about it how to improve it.

¹⁴⁵ Cf. *Id* and *IPCA* supra note ____ (supporting creation of a small claims court) and *Tanielian and Chachkes* (opposing creation of a small claims court).