“Troll” Check?
A Proposal for Administrative Review of Patent Litigation
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Abstract

The patent system is commonly justified on grounds of promoting social welfare and, most specifically, technological progress. For years, however, there has been concern that patent litigation is undermining, rather than furthering, these goals. Particularly in the United States, the time, cost, and complications of patent suits provide openings for opportunistic assertions of infringement. Whether originating with a so-called “patent troll” or another form of patent holder, such opportunistic assertions tax innovators and technology users in ways that represent more a distortion than a fulfillment of patents’ purpose.

This Article proposes a means to address information problems that facilitate opportunistic assertion. The means is an automatic process of administrative review at the threshold of new infringement lawsuits in U.S. district courts. The results of this review would be non-binding but admissible in later court proceedings. Whether conducted by an independent Patent Litigation Review Board or a division of the U.S. Patent and Trademark Office, such review would (1) help discourage—or bring to an earlier and less costly end—relatively weak patent-infringement lawsuits; (2) strengthen the hands of patentees with especially robust cases; (3) more generally flag weaknesses in litigation positions to the benefit of private parties and the courts; and (4) provide policymakers with more readily aggregated information that facilitates evaluation and adjustment of patent system performance. The Article uses multiple economic models to show the likely benefits of pre-litigation administrative review. Nonetheless, because of the fluid and complex nature of the patent litigation landscape, the Article proposes that the review process initially be adopted only on a pilot basis.

* Professor, Harvard Business School. For helpful comments, the authors thank Alex Albright, Jeremy Bock, Bob Bone, Julie Cohen, Chris Cotropia, Paul Courant, Mechele Dickerson, Rebecca Eisenberg, Roger Ford, Mark Gergen, Bill Lee, Mark Lemley, Michael Meurer, Martha Minow, Scott McCown, Jonathan Masur, Linda Mullenix, Justin Nelson, Randall Rader, Michael Risch, Karen Sandrik, Ted Sichelman, Neel Sukhatme, David Taylor, Abe Wickelgren, and participants in meetings, sessions, or workshops of the American Economics Association, American Law and Economics Association, European Policy for Intellectual Property Association, Society for Institutional and Organizational Economics, PatCon 6, Works in Progress Intellectual Property conference, Georgetown University Law Center, University of Michigan Law School, Tel Aviv University Buchmann Faculty of Law, Tilburg Law and Economics Center, and University of Texas School of Law.

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INTRODUCTION

Patent litigation reform is coming. Many signs point to this. As in the years leading up to the 2011 America Invents Act (AIA), the United States Congress has entertained a host of patent reform bills over a series of years, many focused on patent litigation. The House of Representatives passed one of these litigation reform bills by a 325-to-91 vote in 2013, and supermajorities of the House and Senate Judiciary Committees approved versions of such bills in 2015. Policymakers have promised a renewed push for reform in 2017. Meanwhile, outside pressure for reform has grown, not only from usual suspects among industry stakeholders but also in the popular press. In December 2013, the New York Times editorial board cheered congressional consideration of “sound proposals to restrict abusive patent litigation.” In August 2015, editors of the Economist made patent reform their cover story and came close to advocating patent abolition.

Reform proposals have tended toward the dramatic. Some proposals have threatened a revolution in patent litigation—for example, by proposing general adoption of regular attorney fee shifting along a European “loser pays” model as opposed to the typical U.S. practice of shifting fees only...
rarely, if at all. Other proposals have focused on disempowering so-called “patent trolls” — a disparaging moniker for patent-assertion entities (PAEs) that specialize in the ownership, licensing, and enforcement of patent rights. Although the reform bills endorsed by the House and Senate Judiciary Committees in 2015 were more modest than various predecessors, they were still draconian by the standards of U.S. litigation reform.

These reform efforts reflect concern that patent assertion activity is undermining patent law’s purpose to promote technological progress specifically and social welfare more generally. A high overall caseload, high litigation costs, and apparently rampant forum shopping feed concerns. Even after a drop in district court filings in 2016, patent-suit filings are proceeding at about double the rate of the year 2000. These suits are not cheap. High-stakes patent litigation tends to cost each side millions of dollars in attorney fees, and even litigation in which less than $1 million is at stake tends to cost each side several hundred thousand dollars. Further, the

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9 Id. at 218 (observing that a congressional bill would “essentially switc[h] the traditional assumption of American legal jurisprudence” that parties pay their own attorney fees); cf. 35 U.S.C. § 285 (providing that “[t]he court in exceptional [patent-infringement] cases may award reasonable attorney fees to the prevailing party”).


11 Cf. John M. Golden, “Patent Trolls” and Patent Remedies, 85 TEX. L. REV. 2111, 2112 (2007) (noting criticism of “the ‘patent troll’—apparently one of a class of patent owners who do not provide end products or services themselves, but who demand royalties as a price for authorizing the work of others”).


14 See, e.g., Agarwal, supra note 12, at 64 (“[P]atent trolls stifle, discourage, and threaten innovation.”); Smith, supra note 10, at 201 (noting that “the rise of certain patent-assertion entities … has renewed discussion … about the state and effectiveness of current patent law”).


16 AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION, 2015 REPORT OF THE ECONOMIC SURVEY 37 (2015) [hereinafter “AIPLA 2015 SURVEY”] (reporting median costs to pursue a patent suit to completion of $600,000 when less than $1 million is at stake, $2 million when
concentration of new suits in a single one of the nation’s 94 federal judicial districts, the Eastern District of Texas, has become astounding. According to a representative tally, 44% of the 5,821 new patent suits filed in 2015 were filed in the Eastern District of Texas. Perhaps even more remarkably, 1,686 of these new patent suits, 29% of the national total, landed on the docket of a single Eastern District judge.

In recent years, multiple tweaks to patent law have responded at least in part to concerns with patent assertion and litigation. Courts have taken a more restrictive approach to granting injunctions against adjudged infringers, thereby curtailing the ability of patent holders, particularly PAEs, to extract exorbitant licensing fees by threatening to shut down a factory or line of business. They have also tightened the standards for awarding reasonable royalty damages and made attorney fee shifting in light of meritless litigation positions more likely. Other court decisions have strengthened patentability requirements of subject-matter eligibility and nonobviousness, thereby making many suits more likely to fail in response to a motion for dismissal or summary judgment.

between $1 million and $10 million is at stake, and over $3 million when more than $10 million is at stake).


U.S. GOV’T ACCOUNTABILITY OFFICE, GAO-16-490, INTELLECTUAL PROPERTY: PATENT OFFICE SHOULD DEFINE QUALITY, REASSESS INCENTIVES, AND IMPROVE CLARITY 14-16 (2016) (observing that, in 2015, nearly 50 percent “of all patent infringement defendants were named in cases filed in the Eastern District of Texas”).


Id. (listing judges taken on the largest numbers of new patent suits).


Golden, supra note 190, at 605 (citing cases through which the Federal Circuit has tightened reasonable royalty standards).

See Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1754 (2014) (abrogating a Federal Circuit rule requiring both “subjective bad faith” and “objective baseless[ness]” for a court to award attorney fees for pursuing a weak litigation position (internal quotation marks omitted)).

Cf. id. (mentioning Supreme Court decisions that “tightened the requirement of patentable subject matter … and the requirement of nonobviousness”).
Additional reforms have been more purely procedural. Various district courts have adopted local rules specific to patent cases that, in principle, should speed and streamline litigation.\(^{25}\) Through the AIA, Congress expanded opportunities for post-issuance review of patent validity by the U.S. Patent and Trademark Office (USPTO)\(^{26}\) and restricted joinder in patent cases in a way intended to reduce the number of defendants sued by PAEs.\(^{27}\) In 2015, the Supreme Court approved amendments to the Federal Rules of Civil Procedure abrogating a model form for pleading that had enabled patent holders to file complaints that featured “little more … than the name and number of the patent and an allegation of infringement.”\(^{28}\)

Nonetheless, the flood of PAE activity and associated complaints about patent litigation continue.\(^{29}\) This should not be a surprise. The tweaks to the patent system have not altered three fundamentals. First, each year the USPTO continues to receive hundreds of thousands of patent applications and to issue hundreds of thousands of patents.\(^{30}\) At these rates, one cannot reasonably expect the USPTO to perform more than a relatively cursory examination of patents before they issue.\(^{31}\) Although the USPTO contributes its own partial corrective by processing about 2,000 petitions for post-

\(^{25}\) Note that expediting litigation does not necessarily harm PAEs of concern. Golden, \textit{supra} note 190, at 607 (“Like highway improvements that attract too many drivers and make traffic congestion worse, litigation reforms can aggravate, rather than alleviate, tendencies toward excessive litigation.”).


\(^{29}\) See \textit{infra} text accompanying notes 260-264.

\(^{30}\) U.S. Patent & Trademark Office, U.S. Patent Activity: Calendar Years 1790 to the Present (Mar. 17, 2016) (reporting that, in every year from 2006 through 2015, the USPTO received over 400,000 utility patent applications and issued over 150,000 utility patents and over 20,000 design patents) available at https://www.uspto.gov/web/offices/ac/ido/oeip/taf/h_counts.pdf.

\(^{31}\) See \textit{infra} text accompanying notes 65–69.
issuance review each year, these post-issuance efforts still leave much cleanup work to private parties and the courts. Second, even in post-issuance proceedings, the USPTO does not address questions of patent infringement, and, in both pre-issuance and post-issuance proceedings, the USPTO uses a different standard for claim construction than the district courts. These facts add to the USPTO’s inability to resolve many questions of patent validity while also meaning that USPTO review necessarily leaves many open questions about patent infringement and scope. Third, the several-hundred-thousand to several-million dollar price of patent litigation creates real concerns about nuisance suits and access to justice. The cost barrier of patent litigation can be especially problematic for small businesses, which, like other business entities, are generally unable to appear pro se.

Substantially effective patent reform needs to address one or more of these fundamentals. This Article addresses the fundamentals by proposing a new administrative filter for patent suits that, in its complete form, would apply automatically to all patent suits filed in district court. Unlike the USPTO, the proposed Patent Litigation Review Board (PLRB) would review questions of infringement as well as validity and would use a claim-construction standard identical to that of the courts. Further, the PLRB would focus not on providing final decisions on a complete record, but on providing non-binding but on-the-record assessments of whether, even at a preliminary, pre-discovery stage, there is clear evidence that a party to the case should prevail on one or more issues. The general imposition of PLRB review of

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34 See supra note 16 and accompanying text.  
35 FEDERAL TRADE COMMISSION, PATENT ASSERTION ENTITY ACTIVITY: AN FTC STUDY 4 (2016) (observing that the typical license royalties earned by a class of PAEs that “typically sued potential licensees and settled shortly afterward” were “less than $300,000,” an amount “approximat[ing] the lower bound of early-stage litigation costs”).  
36 John M. Golden, Litigation in the Middle: The Context of Patent-Infringement Injunctions, 92 TEX. L. REV. 2075, 2093 (2014) (“U.S. courts have ruled that business entities generally cannot be represented pro se ….”).  
37 A previous proposal for mandatory reexamination of patents asserted in litigation contemplated USPTO reexamination of a limited subset of validity issues, rather than non-binding, preliminary review for any potential question of patent validity, enforceability, or
patent lawsuits would provide a systematic backup to USPTO review and a substantially more accessible and informative front-end for district court litigation. Institution of PLRB review would constitute the most significant institutional change to the patent system since centralization of patent appeals under a new United States Court of Appeals for the Federal Circuit in 1982.\footnote{Cf. John M. Golden, The Federal Circuit and the D.C. Circuit: Comparative Trials of Two Semi-Specialized Courts, 78 GEO. WASH. L. REV. 553, 555 (2010) (describing creation of the Federal Circuit as “an even more recent and radical experiment in semi-specialization” than the preceding creation of the D.C. Circuit).}

Although PLRB judgments would not be substantively binding on courts, they and the opinions behind them would be admissible in court, and parties and the courts would likely give them substantial weight.\footnote{Cf. Irina D. Manta, Bearing Down on Trademark Bullies, 22 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 853, 867 (2012) (proposing USPTO review of trademark cease-and-desist letters).} As a result, this Article contends that PLRB review would accomplish the following: (1) help discourage—or bring to an earlier and less costly end—relatively weak patent-infringement lawsuits; (2) strengthen the hands of patentees with especially robust cases; (3) more generally flag weaknesses in litigation positions to the benefit of both private parties and the courts; and (4) provide policymakers with more readily aggregated information that facilitates evaluation and adjustment of patent system performance.

The Article proceeds as follows. Part I provides a primer on patents and existing processes of administrative review at the USPTO. Part II describes aspects of the current landscape of patent litigation in the United States. Part III presents multiple economic models and eight tables illustrating the expected positive effects and practicability of PLRB review. Part III also describes details of a suggested framework for administrative review, including a proposal that such review initially be adopted on only a pilot basis. Finally, Part III discusses how the proposed framework operates as an alternative or complement to other potential or already implemented adjustments of the patent system.

I. PRIMER ON PATENTS AND USPTO REVIEW

To motivate this Article’s proposal for a new process of administrative litigation review, this Part provides a brief discussion of the basic nature of patent rights, current processes for USPTO review, and realities of U.S. patent litigation.

\footnote{See Benjamin A. Bradford & Sandra J. Durkin, A Proposal for Mandatory Patent Reexaminations, 52 IDEA 135, 164–65 (2012).}
A. PATENT RIGHTS AND THEIR ENFORCEMENT

Patents provide their owners with territorially limited rights to exclude others from the making, use, sale or offer for sale, or importation of covered subject matter.40 Under the current standard patent term, these rights last from the time a patent issues until twenty years from the first relevant filing of an application with the USPTO or a qualifying foreign patent office.41 For a party to be liable for patent infringement, that party need not know of the infringed patent.42 Nor need the party have derived the covered subject matter in any way from the patent’s inventors or owners.43 Although knowledge of a relevant patent is generally required for liability for indirect infringement that is in the nature of aiding and abetting infringement,44 direct infringement by engaging in such acts as manufacture, use, sale, or importation occurs regardless of whether any of the parties have knowledge of the pertinent patent and regardless of the fact that the manufacturer independently developed all the relevant technology.45 Hence, if a consumer uses in the United States a smartphone purchased in the United States from a retail store and imported by a manufacturer who independently developed all the technology associated with the smartphone, the consumer, retail store, and manufacturer could all be liable for direct infringement of a U.S. patent covering technology in the smartphone.

When a patent owner suspects that its patent is being infringed, the owner can sue in a U.S. district court46 for relief such as lost-profit or

40 See 35 U.S.C. § 154(a)(1) (describing the patent owner’s “right to exclude”); id. § 271(a) (listing acts that constitute patent infringement).
42 Commil USA, LLC v. Cisco Sys., Inc., 135 S. Ct. 1920, 1926 (2015) (observing that “[d]irect infringement is a strict-liability offense” for which “a defendant’s mental state is irrelevant”).
43 See John M. Golden, Principles for Patent Remedies, 88 Tex. L. Rev. 505, 515 (2010) (“[U]nlike copyright infringement, patent infringement does not ‘require’ copying and, as a general rule, does not excuse independent creation.”).
45 Commil USA, LLC v. Cisco Sys., Inc., 135 S. Ct. 1920, 1926 (2015) (observing that “[d]irect infringement is a strict-liability offense” for which “a defendant’s mental state is irrelevant”).
46 See 28 U.S.C. § 1338(a) (setting forth the district courts’ original jurisdiction over patent cases); 35 U.S.C. § 281 (“A patentee shall have remedy by civil action for infringement of his patent.”).
reasonable-royalty damages,\textsuperscript{47} enhanced damages,\textsuperscript{48} or an injunction.\textsuperscript{49} The patent owner who brings such a suit need not be the inventor of the patented technology. Nor need the patentee be the owner of the relevant rights at the time the patent issued. By statute, patent rights may be assigned to others.\textsuperscript{50} This assignability permits the sale of patent rights to entities that specialize in the acquisition and assertion of patent rights without any direct involvement in the development, sale, or use of the covered subject matter itself, entities variously called “patent aggregators,” “patent assertion entities,” “non-practicing entities,” or “patent trolls.”\textsuperscript{51}

B. THE PATENT DOCUMENT AND USPTO REVIEW

The scope of an individual set of patent rights is indicated and supported by the patent document. This document consists of drawings, a written description of the alleged invention, and patent claims that are drafted by the patent applicant or its agents, submitted to the USPTO, and commonly amended during the process of USPTO examination.\textsuperscript{52} The written description is required to disclose the alleged invention and “the manner and process of making and using it” in a manner sufficient (1) to show that the inventor was “in possession” of the invention at the time of filing a patent application\textsuperscript{53} and (2) “to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same.”\textsuperscript{54} Patent claims are numbered clauses at the end of the patent

\textsuperscript{47} See 35 U.S.C. § 284 (providing for compensatory damages for patent infringement); JANICE MUELLER, PATENT LAW 321 (4th ed. 2013) (describing “lost profits and reasonable royalty” as the “two primary analytical methods of computing” compensatory damages for patent infringement).

\textsuperscript{48} 35 U.S.C. § 284 (“[T]he court may increase the damages up to three times the amount found or assessed.”).

\textsuperscript{49} Id. § 283 (granting courts the power to “grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent”).

\textsuperscript{50} 35 U.S.C. § 261 (providing that “patents, or any interest therein, shall be assignable in law by an instrument in writing”).


\textsuperscript{53} Ariad Pharms., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1351 (Fed. Cir. 2010) (en banc).

\textsuperscript{54} 35 U.S.C. § 112(a).
document\textsuperscript{55} that are required to “particularly poin[t] out and distinctly clai[m] the subject matter which the inventor or a joint inventor regards as the invention.”\textsuperscript{56} The claims are the primary reference points for the courts, USPTO, and interested public in determining the scope of what a patent covers.\textsuperscript{57} Under the “doctrine of equivalents,” however, there is often room for a patent to cover matter substantially equivalent to what is claimed even though not within the claims’ literal scope.\textsuperscript{58}

The USPTO subjects each application for a patent to substantive review by one or more examiners.\textsuperscript{59} An examiner checks whether a patent application’s claims satisfy statutory requirements for patentability—namely, whether they recite an invention that has at least minimal functionality,\textsuperscript{60} is novel and nonobvious to one of skill in the relevant art,\textsuperscript{61} is adequately described by the patent document,\textsuperscript{62} and is delineated in a way that “inform[s] those skilled in the art about the scope of the invention with reasonable certainty.”\textsuperscript{63}

Examiners generally have expertise associated with the subject matter that they review,\textsuperscript{64} but the quality of their examination almost necessarily suffers from severe constraints. First, in large part because the USPTO receives hundreds of thousands of patent applications each year,\textsuperscript{65} examiners have only very limited time to review individual applications. Even if one


\textsuperscript{56} Id. § 112(b).

\textsuperscript{57} See Golden, supra note 55, at 322.

\textsuperscript{58} See Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co., 535 U.S. 722, 732 (2002) (“The scope of a patent is not limited to its literal terms but instead embraces all equivalents to the claims described.”).


\textsuperscript{60} See MueLLer, supra note 47, at 321 (“[T]he substantive threshold for satisfying the utility requirement is relatively low.”).

\textsuperscript{61} 35 U.S.C. §§ 101–03 (setting out requirements of novelty and nonobviousness).

\textsuperscript{62} See supra text accompanying notes 53-54.


\textsuperscript{64} See MERGES & DUFFY, supra note 52, at 52 (noting “the specialization of examiners, who are assigned to a particular technology”); F. SCOTT KIEFF ET AL., PRINCIPLES OF PATENT LAW 99 (6th ed. 2013) (“When an application reaches an examining group, it is assigned to the appropriate art (i.e., technology) unit and then to a particular examiner.”).

heroically assumes that each of the USPTO’s approximately 9,000 examiners66 works like a law-firm associate and spends 2,000 hours per year solely on examining applications, one ends up with an estimate of 30 hours for an individual examiner to review each of the roughly 600,000 new applications filed in calendar year 2014.67 In these 30 hours, the examiner must (1) read the application and understand its technical subject matter, (2) search and review antecedent material (“prior art”) that could indicate that the claimed invention fails the requirements of novelty and nonobviousness, (3) evaluate satisfaction of other patentability requirements, (4) write up any relied-upon bases for rejecting the application, and (5) possibly engage in telephone or in-person interviews with the applicant or its agents.68 More likely, as opposed to heroic, estimates of available examiner time per application put the average time available for these activities at something more like 20 hours per application, rather than 30.69

Limits on examiner time might alone suffice to indicate that the USPTO’s pre-issuance review can act only as a rough screen for patent application quality. But there are other reasons to believe that the USPTO almost necessarily issues a large number of patents or, at least, individual patent claims that do not really satisfy the law’s putative requirements for patentability.70 Not only are the examiners limited in the time that they can search prior art, they are generally limited in their ability to consult outside

69 See Chris J. Katopis, Perfect Happiness?: Game Theory as a Tool for Enhancing Patent Quality, 10 YALE J.L. & TECH. 360, 373 (2008) (“It is estimated that, on average, an examiner must examine eighty-seven applications per year, spending approximately nineteen hours on each application.”); Lemley, supra note 68, at 1500 (“The total average time the examiner spends on all these tasks over the two- to three-year prosecution of the patent is eighteen hours.”).
experts and also to use certain other potential sources of information, including the Internet, during the 18 months that applications generally remain confidential. Moreover, examiners are also saddled with the legal burden of proof. From the moment a patent application is filed, an entitlement to an issued patent is effectively presumed: the burden is on the examiner to show non-patentability by a preponderance of evidence. The USPTO might further tilt the balance against high-quality examination through its openly declared concern for fee-paying customers such as patent applicants and owners as well as the agency’s specific performance incentives for examiners, which have historically awarded credit for closing an examination by granting a patent.

Given the deficiencies of pre-issuance review of patents, the patent system unsurprisingly provides opportunities for challenging or checking the validity of issued patents and, more specifically, individual claims in issued patents. First, a party sued for infringement or confronting an immediate threat of suit for infringement can challenge the validity of the relevant patent or its claims in district court.

Although a district court challenge to validity must be proven by clear and convincing evidence, success in such challenges is not particularly rare. In cases in which questions of novelty or nonobviousness are litigated to a final judgment, challengers apparently win about half of the time. Selection

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71 Cf. Doug Lichtman & Mark A. Lemley, Rethinking Patent Law’s Presumption of Validity, 60 STAN. L. REV. 45, 62 (2007) (advocating a review process enabling examiners “not only to spend at least one full month researching each purported invention, but also to hire relevant outside experts”).

72 See MANUAL OF PATENT EXAMINING PROCEDURE § 904.02(c), at 900–44 (rev. 9th ed., Nov. 2015) (stating that examiner Internet use must comply “with confidentiality requirements”); Golden, supra note 55, at 336 (noting that “examiners face tight restrictions on their ability to consult any outside evidence, never mind outside experts”).


75 See, e.g., Arkema Inc. v. Honeywell Int’l, Inc., 706 F.3d 1351, 1359 (Fed. Cir. 2013) (holding that a declaratory judgment plaintiff had standing); KIMBERLY A. MOORE, PAUL R. MICHEL & TIMOTHY R. HOLBROOK, PATENT LITIGATION AND STRATEGY 50 (3d ed. 2008) (“Declaratory judgment actions can be a sword for the alleged infringer as well as a shield.”).

76 See 35 U.S.C. § 282(b) (identifying potential “defenses in any action involving the validity or infringement of a patent”).

77 See Michael D. Frakes & Melissa F. Wasserman, Does the U.S. Patent and Trademark Office Grant Too Many Bad Patents? Evidence from a Quasi-Experiment, 67 STAN. L. REV.
effects in litigation—products of parties’ presumed selectivity in determining which issues are litigated to final judgment and which are settled, dropped, or never even asserted—mean that such rates for invalidation in litigation do not provide a great sense of the underlying percentage of issued patent claims that are invalid.\textsuperscript{78} Regardless of underlying invalidity rates, the ability to mount a significant validity challenge to at least some of the patent’s claims is indisputably common.\textsuperscript{79} Indeed, the common existence of substantial questions of validity with respect to patent claims substantially accounts for difficulty in obtaining preliminary injunctions against patent infringement.\textsuperscript{80}

In the early 1980s, Congress began responding to uncertainty about issued patent claims’ validity by establishing administrative post-issuance proceedings through which the validity of patent claims might be challenged or clarified.\textsuperscript{81} The available types of such proceedings and the frequency of their overall use have grown over the past three decades.\textsuperscript{82} Now there are four such types, with hundreds of proceedings being launched each year.\textsuperscript{83} The four types are as follows: (1) ex parte reexaminations to evaluate new questions of novelty or nonobviousness based on prior-art “patents or printed publications”\textsuperscript{84} (2) inter partes review proceedings, in which a private party...
can effectively litigate novelty or nonobviousness based on prior-art patents or printed publications;85 (3) post-grant review proceedings in which a party can litigate essentially any kind of validity question as long as the request for review comes within nine months of the relevant patent’s issuance;86 and (4) covered business method review proceedings whose procedure and potential substance track those of post-grant review but which need not be requested within nine months of the relevant patent’s issuance.87

Although post-issuance USPTO proceedings have become a booming business,88 substantial statutory limitations on these proceedings mean that they cannot completely substitute for the time and expense of district court litigation. As noted above, ex parte reexamination and inter partes review are limited only a subset of potential bases for challenging a patent claim’s novelty and nonobviousness—namely, bases that are grounded in previously available patents or printed publications, rather than other forms of prior art.89 Post-grant review and covered business method review enable challenges to validity on any grounds but are available only within nine months of a patent’s issuance and only for covered business method patents, respectively.90

Concerns about how USPTO proceedings operate in practice also limit their effectiveness as substitutes for district court litigation. Proceedings like ex parte reexamination that largely exclude input from patent challengers are often viewed as too likely to generate results favorable to the patent owner.91 The three other types of proceedings are all inter partes in the sense that challengers are involved throughout, but they are also expensive. Between USPTO fees and fees for attorneys and experts, the cost of litigating any of these inter partes proceedings is likely be in the nature of

85 See 35 U.S.C. § 311 (describing potential bases for a petition for inter partes review); MERGES & DUFFY, supra note 52, at 1050–51 (describing inter partes review proceedings).
86 See id. at 1047 (describing post-grant review proceedings).
88 See John M. Golden, Working Without Chevron: The PTO as Prime Mover, 65 DUKE L.J. 1657, 1667 (2016) (“From mid-2014 through the third quarter of 2015, filings for inter partes post-issuance proceedings before the PTAB arrived at a rate of about 150 per month.”).
89 See supra text accompanying notes 84–85.
90 See supra text accompanying notes 86–87.
at least a couple hundred thousand dollars if the dispute runs through the end of motion practice.\(^92\) Although such amounts are substantially less than the $1 million or more commonly expected for litigation in the district courts,\(^93\) they are much greater than the $12,000 or so characteristic of ex parte reexamination.\(^94\)

This Article proposes a new type of administrative proceeding that improves on the current flotilla of USPTO post-issuance proceedings by offering an administrative forum that is inter partes, hears disputes over patent claim construction and infringement as well as patent validity, and is expected to be cheaper for parties than current inter partes USPTO proceedings. To fully understand the prospects for such a proceeding, however, it is important to understand some further details about how patent litigation in the district courts works.

II. THE PATENT LITIGATION MORASS

Although wealth transfers associated with patent litigation might be viewed as inconsequential from a first-order economic perspective, typical economic arguments for and against patent rights are premised on the belief that, because such transfers affect private-party incentives to engage in innovation-related activities, these transfers in fact have great significance for technological progress specifically or social welfare generally.\(^95\) More particularly, the common—and relatively commonsense—understanding is that patents can promote technological progress by increasing the expected financial returns from innovation-related activities such as invention or investment in invention that might otherwise be under-rewarded.\(^96\) On the other hand, patents can impede progress by limiting the use of patented technologies and effectively imposing a tax on those involved in innovation-related activities that might plausibly be alleged to constitute infringement.\(^97\) Under this understanding, patent litigation will shift incentives for innovative activity away from the social optimum if litigation outcomes improperly

\(^92\) See AIPLA 2015 Survey, supra note 16, at 38 (listing median litigation costs for inter partes proceeding of $200,000 at the end of motion practice and $350,000 through an appeal).

\(^93\) See supra note 16.

\(^94\) AIPLA 2015 Survey, supra note 16, at 38 (listing $12,000 as the median expected cost of law services for ex parte reexamination).

\(^95\) Cf. Louis Kaplow, Multistage Adjudication, 126 Harv. L. Rev. 1179, 1242–43 (2013) (“Monetary payments are transfers: the prospect of payment contributes to deterrence, and also to chilling, but the payment itself is not socially consequential.”).

\(^96\) See Golden, supra note 43, at 520 (describing the “standard utilitarian argument … that patents help correct for market failures that would otherwise erode incentives to develop new technologies”).

\(^97\) See id. at 517–18 (discussing costs imposed by the patent system).
allocate economic rewards or if any benefits from improved allocation of economic rewards through litigation are outweighed by the social costs of litigation itself. Many critics of the patent system believe that patent litigation indeed produces problematic incentives either in general or at least in circumstances involving patent assertion entities (PAEs). This Part describes aspects and implications of what many perceive to be a patent litigation morass.

A. INGREDIENTS IN THE LITIGATION MORASS

A patent-infringement suit in district court is a form of complex litigation that typically features technical subject matter, multiple stages, and high costs. The Judicial Conference of the United States has attested to the burden that patent-infringement suits impose on courts by assigning these suits the fourth highest case weight for civil suits in district courts, trailing only death-penalty habeas, environmental, and civil RICO cases. Three aspects of the patent-litigation landscape are particularly worth highlighting: (1) high litigation costs; (2) the complexity and, absent settlement, likely longevity of litigation; and (3) the apparent prevalence of forum shopping.

1. High Litigation Costs

Patent litigation has commonly been called a “sport of kings,” the sense being that it is so expensive that only extraordinarily well-heeled plaintiffs and defendants can afford to pursue it. Much of the cost is associated with the process of discovery, in which sides frequently exchange huge quantities of documents relating to the claimed invention, the nature of

98 Cf. id. at 517 (noting that excessive rewards from patent rights could “induce[e] the diversion of resources from more socially productive activity”).
100 See infra text accompanying notes __.
102 Golden, supra note 36, at 2077 (“Patent litigation’s tendency toward great expense has caused it to be called the ‘sport of kings’ ….”).
the accused product or process, and the developmental histories of both. Testifying and non-testifying experts are commonly employed to analyze and explain aspects of such material, and the two sides can invest further amounts in the development of instructional or illustrative graphics meant to help render the relevant technology comprehensible to generalist judges and juries. According to the results of a biannual survey by the American Intellectual Property Lawyers Association, such activities lead to litigation costs per side that tend to rise with perceived stakes and often total to millions of dollars. Almost needless to say, such high litigation costs can have negative social effects, including the relative chilling of innovative activity that might result either from undue barriers to the enforcement of patent rights or from the encouragement of so-called nuisance suits focused on threatening innovators with litigation costs based on assertions of infringement that, at best, have only a relatively small likelihood of prevailing on the merits. Subsection II.B.1 discusses in greater detail the social concerns associated with high litigation costs.

2. Litigation Complexity and Longevity

Patent-infringement litigation in the district courts shares many characteristics common in complex civil litigation or even litigation more generally. After a patent holder files suit and the defendant answers and potentially countersues, “[t]he parties proceed to fact and expert discovery, motion practice, pretrial briefing, and trial.”

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103 See AIPLA 2015 SURVEY, supra note 16, at 37–38 (listing median litigation costs through discovery that either approximately equal or exceed one half total median litigation costs).
104 Edward G. Poplawski, Selection and Use of Experts in Patent Cases, 27 AIPLA Q.J. 1, 3 (1999) (“[E]xpert testimony is virtually essential in assisting the trier of fact to understand the evidence and to resolve factual issues in [patent] litigation.”).
106 See supra text accompanying note 16.
107 Cf. D. Rosenberg & S. Shavell, A Model in Which Suits Are Brought for Their Nuisance Value, 5 INT’L REV. L. & ECON. 5, 5 (1985) (noting that a plaintiff could “be likely to prevail” but “still not want to go to trial because the litigation costs would exceed the expected judgment”).
But patent litigation in the district courts typically features a relatively distinct claim construction phase in which a judge determines the meaning of contested patent claim language.\textsuperscript{110} The claim construction phase of patent cases ordinarily precedes summary judgment filings and occurs after much, if not all, discovery.\textsuperscript{111} In a conventional version of this phase, the parties brief disputed claim terms\textsuperscript{112} and provide a technology tutorial,\textsuperscript{113} the trial judge holds an oral hearing, and the trial judge then issues a claim construction order—often called a “Markman order”—that interprets relevant terms.\textsuperscript{114} Claim construction can significantly clarify the strength of parties’ positions\textsuperscript{115} but often comes only after much time and money has already been expended. According to a study using data from Lex Machina, for the approximately ten percent of patent suits initiated and terminated between 2000 and 2010 that resulted in a claim-construction order, the average time from case filing to claim construction was 1.8 years.\textsuperscript{116}

A variety of litigation phases can follow claim construction. As indicated above, the district court’s claim construction is often followed by a summary judgment phase, in which parties file, support, and dispute motions for summary judgment and the court rules in response.\textsuperscript{117} If a case is not resolved by summary judgment or by settlement before or soon after the rulings on summary judgment, the case typically proceeds with further pretrial developments such as the development of jury instructions.\textsuperscript{118} Courts have recognized a right to a jury trial in patent cases involving a claim for damages, rather than merely an injunction,\textsuperscript{119} and most present-day trials

\textsuperscript{110} See id. at 5–3 (describing claim construction as “one of the most distinctive aspects of patent litigation”).
\textsuperscript{111} See id. at 5-5 to 5-6 (discussing practices with respect to discovery both before and after claim construction).
\textsuperscript{112} Ronald J. Schutz & Jonathan D. Goins, Case Management Issues in Patent Litigation, 5 SEDONA CONF. 1, 2 (2004) (“Markman briefs and hearings are a critical part of patent litigation proceedings ....”).
\textsuperscript{113} MENELL ET AL., supra note 109, at 5–15 (discussing the use of technology tutorials).
\textsuperscript{114} See id. at 2-4 to 2-5 (discussing the claim construction process); Pauline M. Pelletier, The Impact of Local Patent Rules on Rate and Timing of Case Resolution Relative to Claim Construction: An Empirical Study of the Past Decade, 8 J. BUS. & TECH. L. 451, 467 (2013) (noting that the “Markman order” is “so called after the seminal case on claim construction”).
\textsuperscript{115} See Schutz & Goins, supra note 112, at 3 (“[T]he court’s rulings on claim construction and interpretation often determine the outcome of the case.”).
\textsuperscript{116} Pelletier, supra note 114, at 477 (describing results from study of 28,377 patent cases).
\textsuperscript{117} See MENELL ET AL., supra note 109, at 6–10 (discussing relative timing of claim construction and summary judgment).
\textsuperscript{118} Id. at 7-2 (discussing aspects of pretrial case management).
\textsuperscript{119} Devon Curtis Beane, Note, Whose Right Is It Anyway?: The Evisceration of an Infringer’s Seventh Amendment Right in Patent Litigation, 2011 U. ILL. L. REV. 1853, 1858 (noting
occur before a jury. These jury trials may be followed by post-trial motions for a new trial or judgment as a matter of law. The district courts might conduct additional post-jury-verdict proceedings relating to such concerns as a call for attorney fee shifting, for enhanced damages, or for injunctive relief. A party may appeal a district court’s final judgment to the U.S. Court of Appeals for the Federal Circuit in Washington, D.C., and such appeals frequently result in cases being remanded to district courts for further proceedings.

Key aspects of this process of multistage litigation are (1) that it tends to take years and (2) that typically at least about half of its overall cost tends to occur during discovery phases that are relatively early compared to trial. Even before any appeal, district court proceedings that run through trial commonly span at least about two years, with even a district known for “quick case schedules,” the Eastern District of Texas, having a median time to trial of 1.8 years during the period from 2000 to 2007.

Of course, the true costs of litigation likely exceed out-of-pocket costs, and these overall costs might be even more heavily weighted toward pretrial discovery. A defendant’s business might operate under a cloud of uncertainty until it can implement a “design-around” of asserted patent rights, a redesign of the defendant’s products or processes that the defendant can claim steers well clear of any charges of infringement. Further, patent litigation can be most disruptive to a defendant’s business during discovery, during which the number of key employees that are subjected to general courts’ differential treatment of cases “where plaintiffs seek damages” and those where “the patentee seeks only injunctive relief”).

120 Mark A. Lemley, Why Do Juries Decide If Patents Are Valid?, 99 VA. L. REV. 1673, 1674 & n.1 (2013) (“Lawyers, scholars, and judges take for granted that when a patent case goes to trial, that trial will almost always be before a jury.”).
121 MENELL ET AL., supra note 109, at 9-2 (discussing common post-trial motions).
122 Id. (same).
124 MENELL ET AL., supra note 109, at 9-21 (noting that remands for nontrivial further proceedings are common).
125 Supra note 103.
126 Klerman & Reilly, supra note Error! Bookmark not defined., at 265 & n.131 (“Nationwide the median time to trial [in patent cases from 2000 to 2007] was two years.”).
questioning, depositions, and document production requests can far exceed
the number of employees called as witnesses at trial.127

In sum, patent litigation in the district courts tends to be an expensive
multistage process that, in the absence of settlement, takes years to conclude.
As discussed in section I.C below, these aspects of patent litigation provide
opportunities for abusive and strategic behavior that this Article’s reform
proposal promises to damp.

3. Rise in Suits, Especially Involving Software and PAEs

Patent suit filings have increased dramatically since the year 2000
from about 2,000 to over 4,500 new suits each year.128 Although an uptick
in the number of litigation events between 2010 and 2012 resulted in part by
a rule change imposed by the 2011 America Invents Act (AIA), the trend of
general growth continued even following the AIA.129 Two major focal points
of concern with respect to this growth have been software patent litigation
and lawsuits brought by patent assertion entities (PAEs).

In 2013, the Government Accountability Office (GAO) reported that
software-related patents were at issue in nearly half of the patent-infringement suits filed from 2007 through 2011, with suits over software-related patents accounting for nearly two thirds of defendants in new patent-infringement suits and just under ninety percent of “the increase in defendants over this period.”130 Consistent with preliminary empirical results from a study by one of this Article’s co-authors,131 GAO also found that suits involving software-related patents had an unusual tendency to persist before the courts, thereby presumably tending to run up higher litigation costs.

(noting that surveyed entrepreneurial companies commonly reported that “resolving [a patent] demand required founder time (73%) and distracted from the core business (89%)”).
128 Lex Machina, supra note 15 (indicating that 2,317 patent suits were filed in 2000 and
4,533 in 2016); see also Lauren Cohen, Umit G. Gurun & Scott Duke Kominers, The
Cohen et al., Growing Problem]; Lauren Cohen, Umit G. Gurun & Scott Duke Kominers,
[hereinafter Cohen et al., Patent Trolls].
129 See Christopher A. Cotropia, Jay P. Kesan, and David L. Schwartz, Unpacking Patent
Assertion Entities (PAEs), 99 MINN. L. REV. 649 (2014); see also Cohen et al., Growing
Problem, supra note 128.
130 U.S. GOVERNMENT ACCOUNTABILITY OFFICE, INTELLECTUAL PROPERTY: ASSESSING
FACTORS THAT AFFECT PATENT INFRINGEMENT LITIGATION COULD HELP IMPROVE PATENT
131 See John M. Golden, Software Patents and the Litigation Funnell: The Worst of All
Specifically, GAO found “a statistically significant difference between suits involving software-related patents, of which 82 percent settled compared with 89 percent of suits that did not involve software-related patents.”

Concern about software patent litigation has extended beyond the GAO. Commentators have argued that software-related patents tend to raise particular problems for assessments of patent scope, the validity of patent claims, and the proper value of patent damages. Moreover, a recent Supreme Court decision has cast considerable doubt on the subject-matter eligibility—and thus validity—of many software-related patent claims. As a result, general concerns with uncertainty about patent quality and vagaries in patent litigation are likely to be particularly well justified for software patents.

Like software patents, PAEs have loomed large in recent growth in patent litigation. Evidence indicates that PAEs have driven most of that growth, with the numbers of suits being brought annually by entities that actively commercialize or otherwise practice their patented inventions being comparatively flat. Evidence on whether overly broad or otherwise invalid (“bad”) patents substantially explain growth in PAE activity is ambiguous, but recent large-sample empirical evidence suggests that entities such as PAEs, on average, buy and litigate lower-quality patents. Initial studies based on relatively small samples indicated that patents held or asserted by PAEs are of higher than normal quality, in the sense that they were more highly-cited and had wider technical breadth than was typical of patents overall. Such small-sample studies are often particularly liable to selection biases,

132 2013 GAO REPORT, supra note 130, at 25 n.46.
133 See, e.g., James Bessen & Michael J. Meurer, Patent Failure: How Judges, Bureaucrats, and Lawyers Put Innovators at Risk 187 (2008) (contending that, because “software is an abstract technology,” software patents are especially likely to “have unclear boundaries and give rise to opportunistic litigation” (emphasis omitted)).
134 See Alice Corp. Pty. Ltd. v. CLS Bank Int’l, 134 S. Ct. 2347, 2352 (2014) (holding “that merely requiring generic computer implementation fails to transform [a specified] abstract idea into a patent-eligible invention”).
135 2013 GAO REPORT, supra note 130, at 45 (suggesting that software-related patents might be a better focus of patent reform efforts than any particular class of patent owners, while also noting that “most of the suits brought by [patent monetization entities from 2007 through 2011] involved software-related patents”).
however, with respect to the data collected.\textsuperscript{138} Large-sample empirical studies have provided various indications of comparatively low quality for PAE-owned patents. For example, such studies have indicated the following: (1) PAE patent portfolios disproportionately comprise patents whose claims were allowed by patent examiners who spend relatively less time reviewing and narrowing claims;\textsuperscript{139} (2) PAEs are significantly more likely than practicing entities (PEs) to have patent claims invalidated;\textsuperscript{140} (3) PAEs tend to litigate patents that are older and closer to expiration than PEs do.\textsuperscript{141} As discussed in the next subsection, there is also evidence that PAEs engage in distinctive forum-shopping behavior that might exacerbate vagaries or even systematic biases in how the patent system operates.

4. Forum Shopping and Selling

A patent owner commonly has a wide choice of fora in which to file suit, often including all or nearly all of the nation’s ninety-four district courts and sometimes including a further administrative forum, the International Trade Commission (ITC). By act of Congress, “[a]ny civil action for patent infringement may be brought in the judicial district where the defendant resides, or where the defendant has committed acts of infringement and has a regular and established place of business.”\textsuperscript{142} Congress has included in another section of the same title of the U.S. Code a definition of “residency” “[f]or all venue purposes.”\textsuperscript{143} This definition provides in part that “an entity with the capacity to sue and be sued in its common name under applicable law” resides “in any judicial district in which such defendant is subject to the court’s personal jurisdiction with respect to the civil action in question.”\textsuperscript{144} The Federal Circuit has held that this definition determines the scope of residency for purposes of patent venue.\textsuperscript{145} As a result, companies that

\textsuperscript{138} Cohen et al., \textit{supra} note 136, at 11.
\textsuperscript{142} 28 U.S.C. § 1400(b).
\textsuperscript{143} \textit{Id.} § 1391(c).
\textsuperscript{144} \textit{Id.}
produce consumer products sold throughout the United States have often been susceptible to suit for patent infringement in any of the 94 judicial districts in the country.\footnote{See Jeanne Fromer, \textit{Patentography}, 85 N.Y.U. L. Rev. 1444, 1451 (2010) ("[A] patent plaintiff may frequently choose to initiate a lawsuit in virtually any federal district court."); Liang, \textit{supra} note 145, at 39 (noting that patentees commonly can sue in essentially any district because of the nationwide scope of sales).}

For at least some patentees, there is an alternative forum beyond the district courts. Upon complaint by a private party, the International Trade Commission (ITC), an independent agency created "[t]o protect domestic industry from unfair trade practices,"\footnote{See Sapna Kumar, \textit{The Other Patent Agency: Congressional Regulation of the ITC}, 61 Fla. L. Rev. 529, 544 (2009).} can launch proceedings that culminate in an exclusion order prohibiting the importation of specified articles or a cease-and-desist order prohibiting domestic activities involving imported matter.\footnote{See 35 U.S.C. § 1337(a)(1) (specifying that importation of infringing articles is an unlawful activity addressable by the ITC); id. § 1337(b)(1) (providing for ITC investigation of "any alleged violation of this section"); id. § 1337(d)-(f) (describing potential remedies); Thomas F. Cotter & John M. Goldén, \textit{Empirical Studies Relating to Patents—Remedies}, in \textit{2 THE ECONOMICS OF INTELLECTUAL PROPERTY LAW} (B. Deprooter, P. Menell & D. Schwartz eds., forthcoming) (noting the ITC’s remedial powers).} But the overall number of ITC proceedings to enforce patents is much smaller than the number of district court cases. Whereas several thousand patent suits are initiated annually in district courts,\footnote{See supra text accompanying note 128.} the ITC lists less than 80 total § 337 proceedings as having been instituted in each fiscal year from 2010 on.\footnote{ITC PERFORMANCE PLAN AND REPORT, \textit{supra} note Error! Bookmark not defined., at 72 tab.C.2 (listing numbers of unfair import investigations and ancillary proceedings for fiscal years 2010 to 2016).} Because ITC proceedings account for only a small fraction of current patent-infringement litigation, this Article focuses on district court litigation.

With respect to the district courts, evidence of rampant forum shopping is strong. Broadly based venue in patent cases has enabled a remarkable level of concentration of new patent suits in two federal districts commonly lying far from the centers of infringers’ operations, the District of Delaware and the Eastern District of Texas.\footnote{See J. Jonas Anderson, \textit{Court Competition for Patent Cases}, 163 U. Pa. L. Rev. 631, 632 (2015) ("[N]early half of the six thousand patent cases filed in 2013 were filed in just two [of 94 districts]: the District of Delaware and the Eastern District of Texas."); Klerman & Reilly, \textit{supra} note Error! Bookmark not defined., at 249 tab.1 (listing the Eastern District} According to data compiled
by Lex Machina, more than 48% of the 22,001 new patent-infringement suits filed in each year from 2013 through early 2017 have been filed in one or the other of these two districts, and in 2015 nearly 45% of suits were filed in the Eastern District of Texas alone. Further, evidence suggests that, among patent holders, PAEs and other nonpracticing entities (NPEs) are especially likely to favor bringing suit in the Eastern District of Texas. Whether or not deliberately developed to attract filings by patent-suit plaintiffs, local procedural and administrative rules or realities, such as local rules that expedite pre-trial proceedings, comparative predictability of judicial assignments, judicial reluctance to grant summary judgment,
and the perceived nature of jury pools, might explain much of the disproportionate caseload of Delaware and the Eastern District of Texas.

Although some commentators defend forum shopping and district courts’ self-differentiation as legitimate legal practices, the apparent intensity of the phenomenon in patent law is at least ironic. Congress specifically sought to limit forum differentiation by creating the Federal Circuit, an appellate court of nationwide jurisdiction in patent cases. Current evidence of district-level forum shopping suggests that district courts’ ability to distinguish themselves through procedure and practice might threaten one of Congress’ fundamental goals.

B. SOCIAL WELFARE CONCERNS WITH PATENT LITIGATION

What is the significance of a patent-litigation morass for overall social welfare? The patent system is commonly justified on grounds that it promotes technological progress or increases social welfare more generally. But there has long been concern that patents, like other forms of intellectual property rights, can undermine these aims by acting more as an innovation-sapping tax or rent-seeker’s delight than as a beneficent

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161 See Liang, supra note 145, at 43–45 (pointing to procedural factors such as “filing-to-trial time” and low summary-judgment grant rates).


165 Golden, supra note 43, at 509 (noting the “utilitarian goal that is standard in modern accounts”).
stimulus for innovation.\textsuperscript{166} Such concern has become particularly sharp with respect to modern patent litigation.

1. General Social Welfare Concerns

Two basic causes of social concern with patent litigation are the vagaries of its outcomes and its costs. These costs including indirect costs from patent litigation’s duration and from business uncertainty while the dispute remains unresolved.\textsuperscript{167}

As noted in the Introduction,\textsuperscript{168} high litigation costs can encourage so-called nuisance or strike suits, lawsuits of relatively low legal merit whose expected value for patent holders primarily results from anticipation of the accused infringer’s willingness to pay to avoid expected litigation costs, rather than any estimate of the patented invention’s value.\textsuperscript{169} Because of the disconnect between the private value of such litigation-cost-driven enforcement activities and the social value of the patented invention, there is little reason to believe that such activities will provide patent-holder awards that are well-tailored to advance the patent system’s social goals.\textsuperscript{170} Meanwhile, by acting as a tax on litigation targets, nuisance suits and the threat of nuisance suits can discourage socially valuable innovation by depressing the net private value of activities that attract such suits.\textsuperscript{171}

\textsuperscript{166} See, e.g., Fritz Machlup & Edith Penrose, The Patent Controversy in the Nineteenth Century, 10 J. ECON. HIST. 1, 1 (1950) (“In actual fact, the controversy about the patent of invention is very old ….”).

\textsuperscript{167} Martin J. Adelman & Gary L. Francione, The Doctrine of Equivalents in Patent Law: Questions That Pennwalt Did Not Answer, 137 U. PA. L. REV. 673, 682 (1989) (“[U]ncertainty about the scope of patent protection hinders both patent holders and potential defendants from assessing the possible outcome of litigation or from making other business decisions ….”).

\textsuperscript{168} Supra text accompanying note 34.

\textsuperscript{169} See Colleen Chien et al., Santa Clara Best Practices in Patent Litigation Survey, 42 AIPLA Q.J. 137, 180–81 (2014) (“Nuisance suits are suits for patent infringement that the defendant is motivated to settle due to the high cost of litigation, even if the patent is weak or its economic value is low.”); William H.J. Hubbard, A Fresh Look at Plausibility Pleading, 83 U. CHI. L. REV. 693, 722 (2016) (“[T]he defendant’s primary objective in a nuisance suit is avoiding its litigation costs.”).

\textsuperscript{170} See Golden, supra note 43, at 517 (observing that excessive rewards from the enforcement of patent rights can “induce[e] the diversion of resources from more socially productive activity”).

\textsuperscript{171} See id. at 517 & n.71 (“Patents can impair dynamic efficiency by impeding follow-on development ….”); cf. Rebecca S. Eisenberg, Noncompliance, Nonenforcement, Nonproblem? Rethinking the Anticommons in Biomedical Research, 45 HOUS. L. REV. 1059, 1079 (2008) (discussing survey results on how concerns of patent clearance can affect innovative activities).
Even if a private party is not sued, that party might incur costs in an effort to limit the risk of a patent-infringement suit. Such anticipatory actions can include undertaking expensive “design-arounds” of patents of questionable validity or scope,\(^\text{172}\) where a design-around entails implementation of a different, more clearly non-infringing means of achieving particular technological or business objectives.\(^\text{173}\) Such actions can also include stockpiling patents in hopes either of depriving others of patent-assertion opportunities or of responding to a patent-infringement suit with a countersuit or cross-licensing.\(^\text{174}\) Although patenting for such purposes might add social value by stimulating the development or disclosure of some technology or information that private parties would otherwise simply fail to develop, neglect, or hold as a trade secret, the possibility of net social benefit again seems only tenuously connected to the source and intensity of private motivation.\(^\text{175}\)

On the patent enforcement side, anticipated litigation costs can generate an excessive barrier to use of the courts. Certain patent holders, such as many startup companies, might find that their patents are effectively unenforceable because the patent holders have only limited access to capital and no more than slim prospects of their case’s being selected for effective enforcement through contingent-fee representation.\(^\text{176}\) Even capital-rich patent holders might find that litigation costs effectively block enforcement of patents of moderate estimated value. As with nuisance suits’ effect on the value of others’ innovative activities, the resulting depression of patents’ effective private value is likely to be substantially untethered to associated social value.


\(^{173}\) KIEFF ET AL., supra note 64, at 68 (describing a patent as inspiring design-arounds by “taunting competitors to circumvent its scope by inventing substitutes”).

\(^{174}\) See Michael Risch, *Patent Portfolios as Securities*, 63 DUKE L.J. 89, 101 (2013) (reporting that motivations “to acquire large portfolios of patents” include preventing assertion of those patents against the buyer and protecting against “lawsuits filed by competitors”).

\(^{175}\) See John M. Golden, *Injunctions as More (or Less) Than “Off Switches”: Patent-Infringement Injunctions’ Scope*, 90 Tex. L. Rev. 1399, 1408–09 (2012) (suggesting that design-around activity might best be viewed “as a means to mitigate the patent system’s costs,” rather than a primary justification for patents); Golden, supra note 11, at 2154 (observing that “patent détente is neither costless nor uninterrupted” and can involve use of patents “to create barriers to new entrants”).

\(^{176}\) See David L. Schwartz, *The Rise of Contingent Fee Representation in Patent Litigation*, 64 ALA. L. REV. 335, 358 (2012) (reporting survey results indicating that contingent-fee lawyers for patent cases decline two thirds to “over ninety-nine percent of potential cases”).
Undue variance or bias in how the court system operates can also have negative effects on private-party incentives. These concerns seem particularly strong in light of the evidence of forum shopping discussed in subsection II.A.4. Such evidence suggests that, at least comparatively speaking, some jurisdictions are significantly biased either for or against patent holders. Particularly to the extent certain kinds of private parties have an advantage in filing suit before their likely suit targets, such jurisdictional bias could lead to an unintended and undesirable distortion of private parties’ ex ante incentives.\textsuperscript{177} Further, regardless of whether courts err more on the side of being pro-patentee or anti-patentee, significant discrepancies in treatment at the district level can encourage privately beneficial strategic behavior with respect to the filing of suits or declaratory judgment actions—in particular, racing to the courthouse\textsuperscript{178}—that seems wastefully remote from any positive social purpose.\textsuperscript{179}

Even without forum shopping, there would be substantial cause for concern that courts are not well equipped to ensure that their awards of monetary or injunctive relief reflect proper assessments of a patented invention’s social or private value.\textsuperscript{180} Such concern might be especially acute in the United States, where the relevant trial judges are generally inexpert in economics and sometimes inexpert in patent law and where, in any event, juries of laypeople are generally the primary adjudicators of patent-infringement damages.\textsuperscript{181} With economic experts’ estimates of a patented invention’s value to the infringer commonly differing by a factor of ten or more, one might justifiably worry that a jury’s estimate of that fractional

\textsuperscript{177} See Kimberly A. Moore & Francesco Parisi, *Rethinking Forum Shopping in Cyberspace*, 77 CHI.-KENT L. REV. 1325, 1328 (2002) (“[I]f some individuals are statistically more likely to be plaintiffs than defendants …, the opportunity for forum shopping may have biased distributional effects with a potential impact on the ex ante incentives of the parties.”).

\textsuperscript{178} Harvey I. Saferstein & Nathan R. Hamler, *Location, Location, Location: A Proposal for Centralized Review of the Now Largely Unreviewable Choice of Venue in Federal Litigation*, 90 OR. L. REV. 1065, 1067 (2012) (“Motions to change venue … are often preceded by a race to the courthouse, especially in patent litigations ….”).

\textsuperscript{179} See Moore & Parisi, *supra* note 177, at 1328 (noting that racing to the courthouse can “accelerate[e] the filing process and brin[g] to trial cases that may not have matured into court claims had they been left to the choice of the natural plaintiff”).

\textsuperscript{180} Golden, *supra* note 43, at 580 (“P[rice setting for patent rights is a difficult, if not substantially unmanageable, task for which courts are likely to be particularly ill equipped.”); Golden, *supra* note 11, at 2150 (noting that “monetary compensation for patent rights is problematic even when the outlook is not prospective”).

\textsuperscript{181} See Thomas F. Cotter, *Reining in Remedies in Patent Litigation: Three (Increasingly Immodest) Proposals*, 30 SANTA CLARA HIGH TECH. L.J. 1, 21 (2013) (expressing a belief that “the right to trial by jury contributes to the high cost of patent litigation and to overinflated damages awards”).
value might frequently end up being far too high or far too low.\textsuperscript{182} Likewise, one might worry that judges will have difficulty determining (1) when injunctions should be refused or delayed to prevent socially problematic “holdup” by patent holders seeking disproportionate rewards\textsuperscript{183} or (2) when injunctions are needed to deter socially problematic “holdout” by parties who would otherwise refuse to pay for a reasonable amount for a license to use the patented invention.\textsuperscript{184}

Although vagaries in courts’ decision-making might wash out in averages over the mine run of cases,\textsuperscript{185} a number of commentators have suggested reasons that vagaries in the assessment of patent damages might not average out.\textsuperscript{186} Moreover, even if vagaries wash out on average, the variance in results about the average can still distort incentives for risk-prone or risk-averse private parties in ways that are contrary to the public interest.\textsuperscript{187}

In short, there are substantial causes for concern that patent litigation’s high costs, duration, and susceptibility to error or bias might undermine the patent system’s aim to promote technological progress or social welfare more generally. The next subsection highlights how PAEs can aggravate these causes for concern.

\textsuperscript{182} See John M. Golden, \textit{Reasonable Certainty in Contract and Patent Damages}, 30 HARV. J.L. & TECH. 257, 265 (2017) (discussing how experts can “generate assessments for reasonable royalties that differ by more than a factor of ten and sometimes even more than a factor of hundred”).

\textsuperscript{183} Karen E. Sandrik, \textit{Reframing Patent Remedies}, 67 U. MIAMI L. REV. 95, 111 (2012) (“Holdup occurs when the patentee opportunistically leverages its right to exclude (enforced by an injunction) over another party’s interest in using the patented technology.”). \textit{But cf.} Golden, \textit{supra} note 11, at n.16 (favoring the “somewhat less judgmental” “term holdout to describe a patent holder’s legal use” of the leverage that patent rights provide).

\textsuperscript{184} Layne S. Keele, \textit{Holding Standards for RANDsome: A Remedial Perspective on RAND Licensing Commitments}, 64 U. KAN. L. REV. 187, 197 (2015) (describing a “patent holdout or reverse holdup” situation in which a technology user “will only agree to license the patent for something less than the [reasonable and nondiscriminatory licensing] rate”).

\textsuperscript{185} Golden, \textit{supra} note 43, at 580 (noting “classic arguments that [courts’] average correctness suffices to provide proper incentives”).


\textsuperscript{187} See \textit{id.} at 581 (noting potential relevance of risk aversion).
2. Concerns with Patent Assertion Entities

To a great extent, concerns with the litigation and licensing activities of PAEs are no more than extensions of concerns about patent litigation more generally. PAEs can act as helpful intermediaries, identifying potential licensees and infringers and providing a means by which patent holders unable to afford litigation can obtain recompense for otherwise unenforceable rights. But PAEs can also exploit litigation costs, legal vagaries, and hold-up potential to “tax” the work of innovators or consumers while failing to funnel substantial, counterbalancing compensation to inventors. Non-PAE patent holders can abuse the system in similar ways. But at least on average, PAEs might be more effective at exploiting rough edges of the patent system—partly because PAEs might be more efficient enforcement specialists and partly because, compared to practicing-entity (PE) patent holders, PAEs are likely to be less vulnerable to a patent-infringement countersuit and less bothered by a reputation for litigiousness.

Generally speaking, there seem at least four basic storylines for PAE activity that is substantially socially detrimental:

1) “Hold-Up”: One concern with PAEs has been that, like a mythological troll emerging from under a bridge, PAEs can use patent rights to “ambush” a technology into which a supplier or user has become “locked in,” thereby extracting a ransom that has little to do with the merits of the patented invention. For example, suppose that a

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189 See Brian T. Yeh, An Overview of the “Patent Trolls” Debate, CRS Report for Congress R42668, at 6 (2013) (“PAEs have frequently been accused of imposing a ‘tax on innovation’ ….”). But cf. Mark A. Lemley & A. Douglas Melamed, Missing the Forest for the Trolls, 113 Colum. L. Rev. 2117, 2125, 2151 n.148 (2013) (finding evidence inconclusive on the extent to which ‘trolls increase or decrease the amounts that fund’ innovation).
computer-chip manufacturer invests $5 billion in building a facility to produce a computer chip having a specific, arguably patent-infringing design.\textsuperscript{192} Suppose also that, after building the facility, the manufacturer would need to spend an additional $1 billion in “switching costs” to redesign the facility to avoid any likelihood of infringement. On the other hand, if the manufacturer had known of the relevant patent before settling on its initial chip design, it could have designed the factory at no extra cost to produce a clearly non-infringing but functionally equivalent chip. In this hypothetical case, the patented invention apparently has added no value. Nonetheless, if the patent embodies a right to shut down the plant to stop infringement, the manufacturer might be willing to pay a licensing fee of up to $1 billion, rather than pay $1 billion to redesign the facility or otherwise give up revenue from the facility’s operating as planned. With a large sheaf of patents in hand and no competing business concerns to drive the timing of litigation, certain PAEs might be especially adept at selecting and timing patent-infringement assertions to exploit such lock-in effects.

2) Exploiting System Vagaries for Unmerited Windfall: Related to the classic hold-up story but somewhat distinguishable is a “lottery ticket” model under which PAEs exploit vagaries of the patent system to pursue a large and socially unmerited payoff.\textsuperscript{193} The value of patent rights can be very difficult to assess, and thus, even if one makes the heroic assumption that the design of patent law is otherwise socially optimal, there is good reason to believe that courts’ assessments of patent value will be erroneous in a number of cases and perhaps by much more than a factor of ten.\textsuperscript{194} When one considers additional, real-world vagaries attendant to assessments of patent validity and scope, the possibilities for unmerited windfalls multiply.\textsuperscript{195}


\textsuperscript{193} Lemley & Melamed, \textit{supra} note 189, at 2126 (describing “‘lottery-ticket’ trolls … playing an uncertain shot at a big payout”).

\textsuperscript{194} See Golden, \textit{supra} note 11, at 2151 (noting party positions on reasonable royalties that differed by factors of about 120 and 200); see also, \textit{e.g.}, Apple, Inc. v. Motorola, Inc., No. 1:11-cv-08540, 2012 WL 1959560, at *3–7 (N.D. Ill. May 22, 2012) (reporting expert opinions for reasonable royalty damages differing by a factor of 140 for one patent and by a factor of 350 for another), rev’d in irrelevant part and vacated in irrelevant part, 757 F.3d 1286 (Fed. Cir. 2014).

\textsuperscript{195} See, \textit{e.g.}, Timothy R. Holbrook, \textit{Equivalency and Patent Law’s Possession Paradox}, 23 \textit{Harv. J.L. & Tech.} 1, 46 (2009) (discussing uncertainty about patent scope resulting from
3) “Bottom Feeding”: In accordance with a third storyline, some PAEs—so-called “‘bottom feeder’ trolls”196—exploit costs of litigation, legal advice, and uncertainty itself to extort amounts of money that have little to do with a patent suit’s merits. A PAE could target a company at a particularly vulnerable moment: conventional wisdom holds “that companies are often sued for patent infringement shortly before their initial public offering.”197 Under an alternative approach, PAEs can sue or send “demand letters” to hundreds and even thousands of potential targets, including relatively small firms and startups that are only end users of technology such as restaurants and hotels providing wireless Internet to customers.198 A PAE can induce payments by such parties by offering a licensing fee that is small compared to expected litigation costs or even the several thousand dollars commonly necessary for a simple attorney opinion on the merits of potential patent-infringement litigation.199

4) Sponsored Harassment: Under a final storyline, PAEs are sponsored by parties who benefit from the PAEs’ actions against others regardless of whether those actions are legally successful. In one suspected case of “commissioned” patent assertion, a company began suing competitors of Nokia and Sony soon after acquiring over 100 patents and patent applications in which those companies had ownership interests.200

These storylines provide plausible bases for worrying about the proliferation of PAE activity, but the relative social value or cost of PAE activity remains a matter of heated debate.201 This Article does not attempt

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196 Lemley & Melamed, supra note 189, at 2126.
199 See AIPLA 2015 SURVEY, supra note 16, at 29 (reporting a median estimated per-patent charge of $15,000 for an attorney opinion on patent validity and infringement).
200 Ewing, supra note 197, at 63 (discussing the Nokia and Sony case).
201 In March of 2015, members of Congress received two letters, each signed by dozens of scholars. The first, which three of this Article’s co-authors signed, pointed substantially to PAE activity in support of its assertion that “a large and increasing body of evidence indicates
to resolve hotly debated questions about whether PAEs are a plague on innovation. For this Article’s purposes, it seems enough to note two generally accepted facts. First, PAE suits and the number of PAE-suit targets have grown substantially over the last two decades, with annual numbers of new PAE suits and PAE-suit defendants now tending to number in the thousands.\(^{202}\) Second, concerns about PAE activities highlight various weaknesses of the patent system:\(^{203}\) (1) limited USPTO review that leaves substantial doubt about the validity and scope of many patents;\(^{204}\) (2) high litigation costs that can foster nuisance suits and settlements;\(^{205}\) and (3) vagaries in litigation outcomes that, from a social standpoint, can (a) excessively deter risk-averse parties from suit or defense, (b) frustrate desirable settlement efforts, and (c) encourage patent-holder rent seeking in a “litigation lottery.”

Without need for reference to PAEs, these weaknesses of the patent system by themselves justify this Article’s proposal for patent litigation administrative review. After all, as early as 1813, Thomas Jefferson proposed that, to “better guard our citizens against harassment by law-suits,” questions about the validity of patents might best be turned over to “a board of Academical professors,” instead of the courts.\(^ {206}\) The later institution of pre-issuance examination by professional patent examiners was a step toward

\(^{202}\) See, e.g., Cotropia, Kesan & Schwartz, supra note 190, at 649 (observing that, “[i]n the last decade, the landscape of patent litigation has radically shifted” toward enforcement by PAEs); James Bessen & Michael J. Meurer, The Direct Costs from NPE Disputes, 99 CORNELL L. REV. 387, 390–91 (2014) (reporting that, “over the last few years, NPE litigation has reached a wholly unprecedented level”).


\(^{204}\) See supra text accompanying notes 65–69.

\(^{205}\) See supra text accompanying notes 168–171. AIPLA survey data indicates that the costs of defending patent-infringement suits brought by PAEs are generally roughly comparable to, albeit often somewhat less than, those of defending against suits by other forms of patentees. See AIPLA 2015 SURVEY, supra note 16, at 37–38 (listing median estimated litigation costs).

realization of Jefferson’s vision but a far from complete one. This Article’s proposal can be understood as taking a further step toward Jefferson’s vision.

III. PROPOSAL FOR ADMINISTRATIVE REVIEW

This Part of the Article motivates and then describes a proposed framework for administrative review of patent litigation. Section III.A discusses the basic economic theory for how a process of early-stage administrative review can promote dispute resolution and help screen out weak claims and arguments, supporting belief in the information-generating value of such review through a high-level economic model. Section III.A then presents a more detailed economic model that demonstrates how administrative review can systematically increase the expected value of higher-quality claims and decrease the expected value of lower-quality claims, thereby promoting more desirable enforcement and licensing behavior. Section III.B lays out the particular framework for administrative review proposed here, outlining its processes and consequences as well as proposed limitations. Section III.B also features a third economic model showing how parties’ own interests in limiting the private costs of administrative review can help ensure that this review has a net positive effect on overall social welfare. Section III.C then explains how various recent or proposed adjustments to the patent system do not obviate the desirability of early-stage administrative review.

A. ECONOMIC ANALYSIS OF ADMINISTRATIVE REVIEW

1. Basic Economic Theory

As discussed in Part II, hallmarks of U.S. patent litigation are high costs, delay, and uncertainty that have helped create a perceived litigation morass. Compared to a socially optimal situation, patent holders likely experience substantially too frequent and great difficulty in vindicating valid claims of infringement. Likewise, innovators and technology users likely experience far too frequent and great difficulty in clearing others’ patent rights and defeating unjustified charges of infringement.

If preliminary administrative review of patent litigation meets at least relatively minimal standards of substantive accuracy, the alteration of incentives that it effects can limit distortions, relative to patent law’s fundamental objectives, created by high litigation costs, delay, and uncertainty. First, such administrative review can facilitate parties’ early exchange of relatively high “diagnosticity/cost” information as a result of one
or the other’s pursuit of a preliminary judgment.207 Such review can also provide parties with a relatively quick, cheap, and informative preview of how adjudication in the courts might proceed. Both of these effects can in turn promote early convergence of parties’ assessments of a case’s economic potential and thus, presumably, the likelihood of early case termination or settlement.208 Further, administrative review can alter the balance of post-review incentives by informing parties’ continuing assessments of litigation value and also by informing later judicial decision-making. More specifically, under a version of our administrative-review proposal, a substantive determination in favor of one party or another triggers a presumption of attorney fee shifting for further litigation challenging that determination. This presumption can directly affect parties’ assessments of the value of continued litigation.

Of course, there can be concerns that social costs of administrative review will swamp its social benefits. But if private parties must generally pay for that review, we can hope that, even with imperfect alignment of private costs and benefits and social costs and benefits, parties will restrain their use of administrative review so that, on the whole, its social benefits tend to outweigh its costs. Preliminary calculations suggest that this is likely to be the case, at least as long as administrative review adversely affects a sufficiently nontrivial fraction of low-quality legal contentions either by deterring their assertion altogether or flagging their weakness early in the process of patent litigation.

2. A First Economic Model for Administrative Review

A high-level economic model highlights the potentially large benefits of preliminary administrative review and suggests that such benefits are likely to be substantially robust against decision-making errors as long as relatively minimal requirements for favoring stronger claims over weaker ones are satisfied. The model operates as follows:

1. A plaintiff $P$ considers suing a defendant $D$.

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207 See Kaplow, supra note Error! Bookmark not defined., at 1225 (suggesting that, “[a]s an initial, rough cut at the problem [of ordering steps in multistage adjudication], it seems that the step with a higher diagnosticity/cost ratio should be earlier”); cf. Reilly, supra note 6, at 239 (advocating “staged litigation” in which “[d]iscovery is limited … until the plaintiff demonstrates a meritorious case by prevailing on the initial issue(s”).

2. The true underlying suit quality is represented by $\theta$, a quantity known to $P$ and $D$, but not directly verifiable by a court. The probability that the court finds for the plaintiff is $\pi(\theta)$, and this probability is increasing in $\theta$. If the court finds for the plaintiff, it awards damages $\delta > 0$ to the plaintiff; otherwise, it enforces a “penalty” $\gamma \geq 0$ on the plaintiff that is transferred to the defendant in the manner of a court award of attorney fees. The plaintiff faces an administrative review cost $c_p^1$ and incurs an additional cost $c_p^2$ for litigating through a full court decision. The defendant must pay $c_d$ to see the suit through a decision by the court.

3. If the plaintiff files suit, the defendant expects to receive:

$$-\pi(\theta)\delta + (1 - \pi(\theta))\gamma - c_d = -\pi(\theta)(\delta + \gamma) - (c_d - \gamma)$$

if it pursues a court decision. We assume that the defendant settles for $\delta'$ otherwise. Hence, the defendant pursues a decision if and only if

$$\delta' \geq \pi(\theta)(\delta + \gamma) + (c_d - \gamma).$$

4. The plaintiff will choose the settlement amount $\delta' = \pi(\theta)(\delta + \gamma) + (c_d - \gamma)$, so that the defendant is indifferent between settling and going to court. Assuming for simplicity that a party chooses against continued litigation when it is a matter of such economic indifference, we see that the plaintiff will bring suit if and only if

$$0 < \pi(\theta)(\delta + \gamma) + (c_d - \gamma) - c_p^1 = \pi(\theta)(\delta + \gamma) - (c_p^1 + \gamma - c_d).$$

Note that if the cost to the defendant, $c_d$, is higher than $c_p^1 + \gamma$, then the plaintiff will always bring suit.

5. Once suit is announced (i.e., after the payment of $c_p^1$, but before settlement negotiations), pre-litigation administrative review yields a signal $\sigma$ that is informative about the probability that the court will find for the plaintiff; specifically, we assume that the probability density of $\sigma$ given $\theta$, $f(\sigma \mid \theta)$, increases in $\theta$ in the sense of first-order stochastic dominance. Now, we have $\pi = \pi(\sigma, \theta)$, increasing in both arguments. We assume that $\pi(\sigma, \theta)$ and $\pi(\theta)$ are equally responsive to $\theta$, in the sense that their derivatives with respect to $\theta$ are equal: $\pi\sigma(\sigma, \theta) = \pi\theta(\theta)$. The defendant now expects to receive:

$$-E_\sigma[\pi(\sigma, \theta) \mid \theta]\delta + (1 - E_\sigma[\pi(\sigma, \theta) \mid \theta])\gamma - c_d = -E_\sigma[\pi(\sigma, \theta) \mid \theta](\delta + \gamma) - (c_d - \gamma)$$

if he pursues a court decision. Consequently, the plaintiff brings suit if and only if:
0 < E_σ[π(σ, θ) | θ](δ + γ) − (c_1 + γ - c_d).

Under the above model, between a situation with the pre-litigation administrative review system and a situation in which pre-litigation administrative review is absent, the difference in expected return for the plaintiff is:

\[ (E_σ[π(σ, θ) | θ] - π(θ))(δ + γ) = E_σ[π(σ, θ) - π(θ)](δ + γ) \]  (1)

\[ = (δ + γ)\int [π(σ, θ) - π(θ)] f(σ | θ) dσ \]  (2)

where we have used the fact that \( \int f(σ | θ) dσ = 1 \).

Now, we note that, as \( π(σ, θ) = π(θ) \), for fixed \( σ \) we must have \( π(σ, θ) - π(θ) = π(σ, θ') - π(θ') \) for all \( θ, θ' \). Suppose that \( θ > θ' \). It follows that:

\[ \int [π(σ, θ) - π(θ)] f(σ | θ) dσ = \int [π(σ, θ') - π(θ')] f(σ | θ) dσ \]  (3)

\[ \geq \int [π(σ, θ') - π(θ')] f(σ | θ') dσ, \]  (4)

where the inequality follows from first-order stochastic dominance and the fact that the quantity \( [π(σ, θ') - π(θ')] \) is increasing in \( σ \).

Thus, we see that administrative review generates a difference in expected return for the plaintiff that is increasing in \( θ \). As long as administrative review increases the likelihood of a plaintiff winning when its case is absolutely ironclad \( (θ = 1) \) and reduces that likelihood when the plaintiff’s case is truly meritless \( (θ = 0) \), it follows that there is some \( θ^* \) such that all plaintiffs with cases stronger than \( θ^* \) return more (in expectation) after the addition of the review stage, while all plaintiffs with cases weaker than \( θ^* \) do worse. Given the fixed costs of filing, \( c_1 \), this means that plaintiffs with cases of quality higher than \( θ^* \) are more likely to file (in equilibrium) given the review, and plaintiffs with cases of quality lower than \( θ^* \) are less likely to file. Moreover, even for suits that are brought under both regimes, the higher-quality suits return more in expectation in the presence of pre-litigation review, and the lower-quality suits return less.

The results are strengthened if pre-litigation administrative review reduces court costs for a side that prevails in review, as this further increases the gains that this side receives upon pursuing suit. The results are qualitatively unchanged if settlement is not possible, as in that case, too, the comparison across litigation regimes hinges on the sign of equation (1) above.
3. A Second, Calibrated Model for Administrative Review

We now use a discrete-time patent assertion model to assess in greater detail the potential costs and benefits of pre-litigation administrative review by a body we call the Patent Litigation Review Board (PLRB). In the illustrative examples featured here, parameter values for use in the model are calibrated to be plausible real-world figures corresponding to values suggested by pre-existing data as well as reasonably conservative estimates of the degree to which PLRB decisions will shift subsequent district court results. Within the model, parties are assumed to be rational profit maximizers subject to the limitations on options for litigation and settlement that the model imposes in order to make investigation manageable.

a. Model Structure

Consider a discrete-time, three-period setup where patent assertion and litigation decisions occur as indicated in Figure 1 and Table 1.

Figure 1: Discrete-Time Assertion Model with Parameters

Table 1: Model Parameters

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>$c_P^0$</td>
<td>cost to plaintiff of pre-filing preparation</td>
</tr>
<tr>
<td>$c_P^1$</td>
<td>PLRB administrative fee plus plaintiff contestation costs</td>
</tr>
<tr>
<td>$c_D^1$</td>
<td>PLRB defendant contestation costs</td>
</tr>
<tr>
<td>$c_P^2$</td>
<td>district-court plaintiff litigation costs</td>
</tr>
<tr>
<td>Symbol</td>
<td>Description</td>
</tr>
<tr>
<td>-------------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>$c_D^2$</td>
<td>district-court defendant litigation costs</td>
</tr>
<tr>
<td>$\pi_g(q)$</td>
<td>probability as function of patent claim quality $q$ that PLRB rules substantially in plaintiff’s favor overall</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>probability as function of patent claim quality $q$ that PLRB rules substantially in defendant’s favor overall</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>probability as function of patent claim quality $q$ that PLRB does not rule substantially in either party’s favor overall</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
<td>probability as function of patent claim quality $q$ that court rules substantially in plaintiff’s favor overall after PLRB does the same</td>
</tr>
<tr>
<td>$\varphi_i(q)$</td>
<td>probability as function of patent claim quality $q$ that court rules substantially in plaintiff’s favor overall after PLRB does not rule substantially in either party’s favor overall</td>
</tr>
<tr>
<td>$\varphi_b(q)$</td>
<td>probability as function of patent claim quality $q$ that court rules substantially in plaintiff’s favor overall after PLRB rules substantially in defendant’s favor overall</td>
</tr>
<tr>
<td>$\delta$</td>
<td>transfer from defendant to plaintiff if plaintiff substantially wins in district court</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>transfer from plaintiff to defendant if defendant substantially wins in district court</td>
</tr>
<tr>
<td>$s$</td>
<td>share of an expected litigation value $V$ that plaintiff receives in a settlement</td>
</tr>
</tbody>
</table>

The choice of assertion occurs at time $T_0$. If assertion is chosen by the patent holder $P$ after incurring a cost $c_P^0$, the alleged infringer $D$ must then decide at the immediately following time $T_\varepsilon$ whether to settle with $P$ or to fight the infringement allegation. If $D$ settles, she will pay out a quantity set by the model, which can be conceived as equaling the product $sV_\varepsilon$, where $V$ is an expected value associated with the litigation (e.g., the expected value to $P$ of any payment from $D$ to $P$ if the case proceeds) and $s$ is the fraction of that value that $D$ pays to $P$ in a settlement. If, instead, defendant $D$ fights the infringement allegation, the PLRB will review the case. This will cost $D$ the amount $c_D^1$, which, assuming this proceeding is decided on papers only, is the cost to $D$ of collecting and providing the limited supporting documentation, including appropriate briefing, to make her arguments. The PLRB process will cost $P$ the amount $c_P^1$, which includes not only the cost of collecting and providing the limited supporting documentation to make his case for infringement to the PLRB, but also an additional fixed fee to at least partially cover administrative expenses.
The PLRB’s function will not be to provide an extensive preliminary judgment\textsuperscript{209} in every case. Instead, in response to party filings, the PLRB will identify and flag particularly strong or weak positions on either side, delivering one of the following forms of judgment:

1. “Bad”: Judgment is predominantly and substantially adverse to the patent holder—e.g., a judgment that one more assertions made by the patent holder are clearly incorrect (meritless), without substantially countervailing conclusions in favor of the patent holder. This happens with probability $\pi_b(q)$.

2. “Good”: Judgment is predominantly and substantially favorable to the patent holder—e.g., a judgment that one more assertions made by the patent holder are clearly correct, without substantially countervailing conclusions in favor of the patent challenger. This happens with probability $\pi_g(q)$.

3. “Inconclusive”: Judgment is inconclusive in the sense that the PLRB draws no conclusions substantially in favor of either side or when the PLRB’s conclusions are essentially balanced in the sense that they give partial and substantially countervailing victories to each side. This happens with probability $1 - \pi_g(q) - \pi_b(q)$.

At time $T_1$ following the PLRB’s decision, $P$ must decide whether to continue pursuing charges of patent infringement or to drop the suit. If $P$ chooses to continue, then $D$ must decide how to respond at immediately subsequent time $T_{1+\varepsilon}$. If $D$ settles with $P$, the settlement value will at a value equaling the product $sV_{1+\varepsilon}$, where $s$ is again the settlement fraction, this time applied to a base value $V_{1+\varepsilon}$, an expected value associated with continuing the litigation after the PLRB’s decision. If, instead, $D$ fights the infringement allegation in court, $D$ will incur litigation costs $c_D^2$, and $P$ will incur litigation cost litigation costs $c_P^2$.

$D$’s net expected proceeds from continuing litigation at time $T_{1+\varepsilon}$ will depend on the information revealed by the decision of the PLRB along with the underlying claim quality $q$. For example, if the PLRB issues a plaintiff-disfavoring judgment of “Bad,” $D$’s expected court award (or loss) will be $(1 - \varphi_b(q)) \gamma - \varphi_b(q) \delta)$. Subtracting her cost $c_D^2$ of fighting in court yields net expected proceeds of $-c_D^2 + (1 - \varphi_b(q)) \gamma - (\varphi_b(q) \delta)$.

\textsuperscript{209} Cf. Geoffrey P. Miller, \textit{Preliminary Judgments}, 2010 U. ILL. L. REV. 165, 167 (using the term “preliminary judgment” somewhat differently to refer to a “tentative assessment … based on the same sorts of information that the courts already consider on motions for summary judgment”).
The corresponding expected payoff for $P$ of going to court in this Bad state is 

$$-c_b^2 + (\varphi_b(q)) * \delta \text{ } - \text{ } (1 - \varphi_b(q)) * \gamma.$$  

The expected payoffs in cases of Good and Inconclusive PLRB judgments are constructed similarly using the probabilities $\varphi_g(q)$ and $\varphi_i(q)$ associated with those states.

**b. Illustrative Results**

In this subsection, we take the model and examine its implications by applying it to eight illustrative “calibrations” specified by assigned sets of parameter values. Our illustrative examples use specific parameter estimates to generate results for two regimes: one allowing for settlement between the plaintiff and defendant, and one disallowing settlement outside of a plaintiff’s unilateral decision to decline to pursue the suit, a decision that corresponds to accepting a settlement offer of $0$. An Online Appendix presents additional examples, showing similar patterns for results with different parameter choices. The Online Appendix also includes the Model Replication Code so that interested readers can explore the dynamics of the model and use it in their work.

Generally in our examples, the plaintiff $P$ will not file or terminate the patent-infringement suit at time $T_0$ or $T_1$, respectively, if, without the possibility of settlement at immediately subsequent time $T_\varepsilon$ or $T_{1+\varepsilon}$, the net present value of suit for plaintiff $P$ is negative. This aspect of the modeled examples corresponds to assuming that, at both of the discrete settlement times $T_\varepsilon$ and $T_{1+\varepsilon}$, defendant $D$ will not offer anything above $0 to settle the case unless plaintiff $P$ has a credible threat of continuing the case absent a nonzero settlement offer at the particular settlement time in question. Such behavior might be expected of $D$ in a situation in which the parties have symmetric information and shared beliefs about likely litigation outcomes.

For purposes of the examples allowing settlement, we assume that parties settle for the expected value of the end payout in the case (e.g., the value of a court award if the parties are at the last settlement step in the case). In other words, for the settlement-based examples, we assume a settlement fraction $s$ of 1 or 100%, and we apply this settlement fraction to values for $V_\varepsilon$ and $V_{1+\varepsilon}$ that equal the expected value of the amount, excluding next-stage plaintiff process costs $c_P^1$ or $c_P^2$, that the plaintiff $P$ expects to gain if litigation continues beyond the current settlement stage, $T_\varepsilon$ or $T_{1+\varepsilon}$, respectively. Under this approach, settlement saves each party its own expected costs of undertaking the next stage of administrative or court process. Thus, in situations where the plaintiff $P$ has a credible threat of continuing litigation

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210 Thus, in a situation in which the PLRB has issued a plaintiff-disfavoring judgment of “Bad,” the proffered settlement amount $sV_{1+\varepsilon}$ will equal the expected court award to the $P$ after such a PLRB judgment: $(\varphi_b(q)) * \delta \text{ } - \text{ } (1 - \varphi_b(q)) * \gamma$.
even without immediate settlement, settlement is rationally desired by both parties and always occurs at time $T_ε$ by taking into account the probabilistically weighted settlements that would otherwise occur at time $T_{1+ε}$.

Eight tables for the calibrated scenarios appear as Tables 2 through 9 below. Each set of calibration results in these tables ends by reporting a value $E$(Ex Ante Plaintiff Payoff) that equals the ex ante expected value for $P$ of pursuing the relevant claim of patent infringement against $D$. Because $P$ will drop the suit at $T_0$ if the net present value (NPV) of filing the suit is less than zero and because $P$ will have incurred costs of no more than $c_p^D$ before arriving at time $T_0$, the minimum value of $E$(Ex Ante Plaintiff Payoff) in our modeled results will be $-c_p^D$. Further discussion of the calibrations and their implications follows.
Table 2
Calibration I_s: Weak Suits without the PLRB

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Calibration Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$c_p^0$</td>
<td>20,000</td>
</tr>
<tr>
<td>$c_p^1$</td>
<td>0</td>
</tr>
<tr>
<td>$c_p^2$</td>
<td>0</td>
</tr>
<tr>
<td>$c_D^2$</td>
<td>200,000</td>
</tr>
<tr>
<td>$c_D^2$</td>
<td>400,000</td>
</tr>
<tr>
<td>$\pi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>100%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\varphi_i(q)$</td>
<td>15%</td>
</tr>
<tr>
<td>$\varphi_b(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\delta$</td>
<td>1,500,000</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>0.05 \times (c_D^1 + c_D^2)</td>
</tr>
</tbody>
</table>

Settlement Fraction 100%

$E(\text{Ex Ante Plaintiff Payoff}) = $188,000.00

Table 3
Calibration II_s: Weak Suits with the PLRB

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Calibration Value</th>
</tr>
</thead>
<tbody>
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<td>180,000</td>
</tr>
<tr>
<td>$c_D^2$</td>
<td>380,000</td>
</tr>
<tr>
<td>$\pi_g(q)$</td>
<td>1%</td>
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<tr>
<td>$\pi_b(q)$</td>
<td>60%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>39%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
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<td>$\varphi_i(q)$</td>
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<td>$\varphi_b(q)$</td>
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</tr>
<tr>
<td>$\gamma$</td>
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</table>

Settlement Fraction 100%

$E(\text{Ex Ante Plaintiff Payoff}) = -$20,000.00
### Table 4
#### Calibration III₅: Strong Suits without the PLRB

<table>
<thead>
<tr>
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<th>Calibration Value</th>
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</thead>
<tbody>
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</tr>
<tr>
<td>$c_D^5$</td>
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<td>0%</td>
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<tr>
<td>$\pi_b(q)$</td>
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</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>100%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\varphi_1(q)$</td>
<td>75%</td>
</tr>
<tr>
<td>$\varphi_b(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\delta$</td>
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</tr>
<tr>
<td>$\gamma$</td>
<td>$0.05 \times (c_D^1 + c_D^3)$</td>
</tr>
</tbody>
</table>

*Settlement Fraction* 100%

$E(\text{Ex Ante Plaintiff Payoff}) = \$1,095,000.00$

### Table 5
#### Calibration IV₅: Strong Suits with the PLRB

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Calibration Value</th>
</tr>
</thead>
<tbody>
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<td>780,000</td>
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<tr>
<td>$c_D^6$</td>
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<td>$\pi_g(q)$</td>
<td>50%</td>
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<tr>
<td>$\pi_b(q)$</td>
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<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>49%</td>
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<td>$\varphi_g(q)$</td>
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</tr>
<tr>
<td>$\gamma$</td>
<td>$0.05 \times (c_D^1 + c_D^3)$</td>
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</tbody>
</table>

*Settlement Fraction* 100%

$E(\text{Ex Ante Plaintiff Payoff}) = \$1,199,000.00$
Table 6
Calibration $I_{NS}$: Weak Suits without the PLRB

<table>
<thead>
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</thead>
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<td>0</td>
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<td>200,000</td>
</tr>
<tr>
<td>$c_2^1$</td>
<td>400,000</td>
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<tr>
<td>$\pi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>100%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\varphi_1(q)$</td>
<td>15%</td>
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<tr>
<td>$\varphi_2(q)$</td>
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</tr>
<tr>
<td>$\delta$</td>
<td>1,500,000</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>$0.05 \times (c_D^1 + c_D^2)$</td>
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</table>

$E(\text{Ex Ante Plaintiff Payoff}) = -$12,000.00$

Table 7
Calibration $II_{NS}$: Weak Suits with the PLRB

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Calibration Value</th>
</tr>
</thead>
<tbody>
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<td>180,000</td>
</tr>
<tr>
<td>$c_2^1$</td>
<td>380,000</td>
</tr>
<tr>
<td>$\pi_g(q)$</td>
<td>1%</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>60%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
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</tr>
<tr>
<td>$\delta$</td>
<td>1,500,000</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>$0.05 \times (c_D^1 + c_D^2)$</td>
</tr>
</tbody>
</table>

$E(\text{Ex Ante Plaintiff Payoff}) = -$20,000.00$
Table 8  
**Calibration III\textsubscript{NS}: Strong Suits without the PLRB**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
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<td>800,000</td>
</tr>
<tr>
<td>$c_1^2$</td>
<td>800,000</td>
</tr>
<tr>
<td>$\pi_g(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>0%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>100%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
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<tr>
<td>$\varphi_1(q)$</td>
<td>75%</td>
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<tr>
<td>$\varphi_b(q)$</td>
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<tr>
<td>$\delta$</td>
<td>1,500,000</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>0.05 * ($c_0^1 + c_1^1$)</td>
</tr>
</tbody>
</table>

$E(\text{Ex Ante Plaintiff Payoff}) = $295,000.00

Table 9  
**Calibration IV\textsubscript{NS}: Strong Suits with the PLRB**

<table>
<thead>
<tr>
<th>Model Parameter</th>
<th>Calibration Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$c_0^2$</td>
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<tr>
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<td>90,000</td>
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<tr>
<td>$c_2^1$</td>
<td>60,000</td>
</tr>
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<td>$c_2^2$</td>
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<tr>
<td>$\pi_g(q)$</td>
<td>50%</td>
</tr>
<tr>
<td>$\pi_b(q)$</td>
<td>1%</td>
</tr>
<tr>
<td>$1 - \pi_g(q) - \pi_b(q)$</td>
<td>49%</td>
</tr>
<tr>
<td>$\varphi_g(q)$</td>
<td>90%</td>
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<tr>
<td>$\varphi_1(q)$</td>
<td>75%</td>
</tr>
<tr>
<td>$\varphi_b(q)$</td>
<td>25%</td>
</tr>
<tr>
<td>$\delta$</td>
<td>1,500,000</td>
</tr>
<tr>
<td>$\gamma$</td>
<td>0.05 * ($c_0^1 + c_1^1$)</td>
</tr>
</tbody>
</table>

$E(\text{Ex Ante Plaintiff Payoff}) = $336,805.00
c. Analysis of Results

In this subsection, we analyze the extent to which the calibration examples show how effects of PLRB review on two different categories of suits, both involving relatively low stakes by patent litigation standards, a claim for damages of $1.5 million. The first category of suits are comparatively low-merits cases (“Weak Suits”) modeled as having a plaintiff-win probability of 15% in the absence of the PLRB. The second category are comparatively high-merits cases (“Strong Suits”) modeled as having a plaintiff-win probability of 75% in the absence of the PLRB. For purposes of assigning illustrative parameter values in the calibrations, the plaintiff $P$ is assumed to be a patent holder and the defendant $D$ is assumed to be an accused infringer. Likewise, for simplicity, no countersuit by $D$, whether for patent infringement, antitrust violation, or otherwise, is contemplated. To demonstrate the expected effects of PLRB review, we analyze four subclasses of scenarios for modeled circumstances in which settlement is allowed and occurs (IS-IVs) and in which settlement is not allowed but plaintiffs can still terminate negative present value suits at times $T_0$ and $T_1$ (calibrations INS-IVNs):

I. Weak Suits—without PLRB
II. Weak Suits—with PLRB
III. Strong Suits—without PLRB
IV. Strong Suits—with PLRB

i. PLRB Screening of Cases with Settlements

Calibrations I$_s$ and II$_s$ of Tables 2 and 3 provide illustrative numbers for Weak Suits of relatively low value. As the ultimate expected value number $E(\text{Ex Ante Plaintiff Payoff})$ in Calibration I$_s$ indicate, despite only a 15% chance of an ultimate court judgment for the plaintiff, the illustrative low-merit suit has positive NPV for $P$ of $188,000 without the PLRB. $D$ is expected to choose to settle the case for that amount plus $20,000 to avoid a costly and presumably lengthy court battle. In sharp contrast, when we introduce the PLRB in Calibration II$_s$, the existence and informational contributions of the PLRB help “screen” this weak case, discouraging its development by $P$ by giving the case a negative ex ante NPV of –$20,000 even when $D$ has a substantial propensity to settle cases to avoid litigation. This negative NPV illustrates one of the important benefits we believe the PLRB would bring to the patent litigation landscape—namely, reduction in

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211 The Weak Suits’ combination of low plaintiff-win probability and relatively low stakes compared to typical litigation costs might earn them designation as “nuisance suits.” See supra notes 108 and 171 and accompanying text.
the value of at least some low-merit suits to a point where a rational potential
claimant will not pursue them and is less likely to be able to make a credible
threat of doing so.

Next we turn to Strong Suits, relatively high-merit assertions of patent
infringement illustrated by Calibrations III_S and IV_S of Tables 4 and 5. As
might be expected in scenarios in which the plaintiff has a 75% chance of
winning a court judgment of $1.5 million without PLRB review, P’s expected
payoffs both with and without the PLRB are positive. Calibration III_S shows
that, without the PLRB, the Strong Suit has a positive NPV for P of
$1,095,000. Again, this figure represents the amount for which D is expected
to choose to settle the case to avoid a costly and presumably lengthy court
battle. Calibration IV_S calculates the expected payoff when the same suit is
subjected to prelitigation PLRB review. Unlike the case of the Weak Suit,
the net present value of this Strong Suit is still positive when subjected to
PLRB review. Indeed, at $1,199,000, the NPV for the Strong Suit is nearly
10% larger than the NPV without the PLRB.

The increase in NPV for the Strong Suit when subject to PLRB review
highlights the second main benefit the PLRB can bring to the patent
landscape. In addition to discouraging a substantial number of low-merits
suits, PLRB should encourage patent-rights enforcement and compliance in
a substantial number of cases in which patent holders have high-merit claims
of infringement. This follows from the expectation that a positive ruling from
the PLRB will increase the expected odds of winning in later district court
proceedings, thereby generating a rise in patent-infringement suit NPV that
can more than pay for the costs to the patent holder of PLRB proceedings.

We must concede, however, that there will almost inevitably be patent
holders with relatively high-merit claims who do not benefit so substantially
from PLRB review. This failure could result because the strengths of their
claims are difficult to convey in summary proceedings that precede
discovery. The point that Calibrations III_S and IV_S make is that, as a reform
designed to make the patent system work better, PLRB review will be
balanced in the sense that it will have pro-patentee effects in some situations
and anti-patentee effects in others. The key question for PLRB review is not
who is making a claim but how strong or weak that claim can be shown to be
at the outset of litigation. Some low-merit claims, perhaps many, will also
escape identification as such by the PLRB. Nonetheless, by tending to
increase the value of high-merit claims and tending to decrease the value of
low-merit claims, PLRB review will improve patent system performance.

ii. PLRB Screening of Cases without Settlements

The next four scenarios, Calibrations I_NS to IV_NS of Tables 6 to 9, use
the same parameter estimates as those in the preceding subsection. But here
we exclude the possibility of settlement. In these scenarios, cases will only end short of a final court judgment if the plaintiff decides unilaterally not to pursue the case further—a decision that one might view as equivalent to accepting a settlement for $0. Examining these variants of the original scenarios not only provides a robustness check, but also enables exploration of the impact of settlement on the value of PLRB review. The results for Calibrations INS to IV NS point to two primary conclusions. First, the possibility of settlement can highly inflate the NPV of a patent suit relative to a situation in which settlement is impossible. Second, the effect of PLRB review on the NPV of suit for a patent holder follows the same basic pattern regardless of whether settlement is allowed.

On the first point, note that $P$’s NPV for suit is commonly much higher in Table 2 through 5’s scenarios with settlement than in Tables 6 through 9’s corresponding no-settlement scenarios. The NPV of Table 6’s Weak Suit without settlement and without PLRB review is negative and equal to $-12,000$, whereas the NPV for Table 2’s corresponding Weak Suit with settlement and without PLRB review is positive and equal to $188,000$. For Table 4 and 8’s Strong Suit without PLRB review, the comparative NPV figures are $1,095,000$ with settlement and $295,000$ without settlement. For Table 5 and 9’s Strong Suit with PLRB review, the comparative figures are $1,199,000$ and $336,805$, respectively. The only comparative situations for which removal of the settlement option does not change the NPV are those for Table 3 and 7’s Weak Suit with PLRB review: both with and without settlement these scenarios yield NPVs of $-20,000$, the minimum possible value. In short, the possibility of settlement tends to increase, often to greatly increase, the value of a suit to the plaintiff. PLRB review can curtail and sometimes even prevent this inflationary effect of settlement.

Moreover, just as in scenarios where settlement occurs, PLRB review has the apparently beneficial effect of tending to decrease the value of illustrative low-merit suits and tending to increase the value of illustrative high-merit suits. Tables 6 and 7 show that, in the absence of settlement, the NPV from bringing the Weak Suit is roughly $8,000$ lower with the PLRB than without it. In other words, the PLRB causes a two-thirds decrease in the Weak Suit’s NPV. On the other hand, Tables 8 and 9 show that introduction of PLRB review increases the NPV of the Strong Suit by over $14\%$ from $295,000$ to $336,805$.

d. General Welfare and Policy Implications

Comparing the calibrations both with and without the settlement option shows that the option to settle does not alter the basic nature of the expected positive impact of the PLRB. With or without the ability to settle,
the PLRB has a positive impact by both (1) decreasing the value of low-merit claims and (2) increasing the value of high-merit claims. The first effect, that of decreasing the value of low-merit claims, can help to effectively screen out low-merit patent claims not only by causing assertions to be dropped after PLRB review but also by discouraging the initial filing of suit. The second effect, that of increasing the value of high-merit claims, can encourage enforcement of such claims, strengthen the bargaining position of relevant claim holders, and enhance the deterrent force of relevant patents.

Note that the illustrative results reported here cover (1) situations for which we have assumed 100% settlement and (2) situations for which we have assumed no settlement (i.e., 0% settlement). Thus, we have investigated both of two corner solutions with respect to settlement. As the ability to settle can reasonably be expected to lie somewhere in the space between these two corners, we expect that the basic patterns for PLRB effects that we report above—in particular, relative tendencies to encourage high-merit suits and to discourage low-merit suits—will apply quite generally across the spectrum of real-world settlements and assertions.

Moreover, the possibility that PLRB review will affect enforcement and defense strategies suggests that the positive effects of PLRB review could substantially outpace what examination of NPV effects in individual cases indicates. By decreasing the value of low-merit claims and increasing the chances of a relatively quick, impartial, and expert signal about the weakness of such claims, PLRB review can embolden defendants to pursue a no-settlement strategy or, at least, an approach to settlement tilted more toward refusal than otherwise. As the comparative numbers for scenarios with and without settlement show, tilting approaches to low-merit claims toward no-settlement strategies can be expected to depress the ex ante expected value of such claims even further and perhaps very substantially further than does PLRB review alone. Likewise, PLRB review’s tendency to increase the value of high-merit claims can be expected to increase deterrence from associated patents because this increase in value not only raises the expected cost of being an enforcement target but also, by encouraging enforcement, increases the likelihood of becoming such a target. Encouragement of compliance strategies with respect to high-merit claims could further benefit right holders by enabling them to obtain the practical benefit of their legal rights without having to spend substantially on enforcement.

The illustrative examples above demonstrate why many parties expecting to bring high-quality patent-infringement claims should support a proposal for the PLRB, while many of those expecting to bring low-quality claims can be expected to be opposed. In the absence of the PLRB, informational and process limitations of the patent system mean that low-quality claim asserters benefit from their claims being at least partially pooled
with—i.e., not distinguished from—higher-quality claims. PLRB review reduces the extent and duration of such pooling to the benefit of high-quality claim holders and the detriment of low-quality claim holders. In this way, PLRB review might be particularly valuable for cash-constrained parties such as startups or individuals who might otherwise settle or fail to pursue claims even when their likelihood of prevailing in court is very large.

A caveat is that our analysis here generally assumes, as Congress appears commonly to assume, that the patent system’s substantive legal standards—i.e., the legal standards that determine whether a claim is of high or low quality—are sufficiently well designed that increased compliance with them tends to increase social welfare. A skeptic of the patent system might argue that a better reform would reduce the value of patents and patent-infringement claims across the board or even abolish them altogether. For purposes of this Article, we are content to assume that, regardless of whether society would be better off under such more drastic reforms, PLRB review will likely improve social welfare by effectively pushing value from low-merit patent claims to high-merit ones.

B. FRAMEWORK FOR ADMINISTRATIVE REVIEW

Fundamental concerns with patent litigation are the high cost and substantial delay commonly experienced before substantial indications of how a court will rule on important substantive matters such as claim scope, validity, or infringement. Cost and delay can combine with uncertainty about patent litigation’s results to generate opportunities for socially undesirable litigation behavior, including nuisance suits brought by patentees and holdout behavior by recalcitrant infringers. An early-stage administrative review process can counteract these effects of cost, delay, and uncertainty by providing relatively quick, cheap, and impartial guidance on a patent suit’s merits during a time span, the first several months after a patent suit is filed, when decisive judgments from a court are generally hard to obtain. A further advantage of a centralized administrative review process is that it can provide a check on forum shopping as well as an opportunity to gather centralized information on the patent litigation system’s performance. This section provides details on the nature of the proposed review process and how it can be implemented.

1. Proceedings Before the Patent Litigation Review Board

The proposed administrative review would be an automatic process that would occur immediately after the filing of a patent suit in a district court. This automatic review might be viewed as a variant of (1) the required review
of a qui tam False Claims Act complaint by the Department of Justice or (2) the requirement of filing certain employment discrimination claims with the Equal Employment Opportunity Commission before resort to the courts. Although one can imagine any number of ways of structuring preliminary administrative review, this Article proposes a specific potential framework as a starting point for discussion.

This Article’s proposed process would unfold as follows. Upon the filing of a patent-infringement suit in a district court, the PLRB would be notified. Unless all parties to the district court suit opted out, the PLRB would conduct a paper hearing in which parties would be allowed to file documentary arguments and evidence relating to questions of patent infringement, validity, and enforceability. Although attorney representation would be advised, PLRB proceedings would improve access to justice by allowing parties to present materials believed to be relevant either pro se or through qualified non-attorney representatives such as, in a business entity’s case, their chief officers or owners.

Including time for party filings, the PLRB would have 180 days from the time of notification of suit to issue its determinations. With consent from all parties, however, the Board would be able to extend the time for review. The district court would automatically stay proceedings during the administrative review process although, on a showing of good cause, the district court would have power to lift the automatic stay in order to consider

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212 See U.S. Department of Justice, False Claims Act Cases: Government Intervention in Qui Tam (Whistleblower) Suits, www.justice.gov/sites/default/files/usao-edpa/legacy/2011/04/18/fcaprocess2_0.pdf (last visited on June 5, 2015) (noting that a complaint under the False Claims Act is filed under seal for “at least sixty days” to permit DOJ investigation).


214 Suits triggering administrative review would include declaratory judgment actions in which a party seeks a ruling of non-infringement or patent invalidity or unenforceability.

215 See supra text accompanying note 36; cf. 5 U.S.C. § 555(b) (“A person compelled to appear in person before an agency or representative thereof is entitled to be accompanied, represented, and advised by counsel or, if permitted by the agency, by other qualified representative.”).

216 The 180-day time period is modeled on the roughly 6-month period currently allowed for patent owner response and USPTO decision on a request for inter partes or post-grant review. See 35 U.S.C. § 314(b) (setting a deadline for USPTO decision on instituting inter partes review); id. § 324(b) (same for post-grant review); 37 C.F.R. § 42.107(b) (indicating deadline for patent owner’s preliminary response to a request for inter partes review); 37 C.F.R. § 42.207(b) (same for post-grant review).
a motion for a preliminary injunction, temporary restraining order, or dismissal under Federal Rule of Civil Procedure 12(b)(6). Under existing law, the Board might trigger a further stay of district court proceedings by causing the initiation of post-issuance review at the USPTO.217

For purposes of the preliminary administrative review, the parties would be expected to focus on issues with respect to which they believe they can establish a decisive case through already available documentary evidence, affidavits, and written argument. There would be no provision for discovery. In this way, the hope is that the administrative review can prioritize the presentation of what parties believe to be crucial and already available informative evidence on potentially decisive issues, rather than wait to present such evidence and associated argument after a general process of discovery.218

Within the original or extended stay period, the Board would either (1) register a conclusion that limits on time and evidence did not permit a substantive determination or, alternatively, (2) provide a substantive determination on whether, in its view, a reasonable patent attorney, presented with the evidence at hand, would conclude that, under existing law, one side or the other had established clearly and convincingly the correctness of its position, with there being no substantial question that additional evidence would lead to a different conclusion.219 For example, a patent holder might produce documentary evidence of the workings of an accused infringing device that, in the absence of any substantial impeachment by the accused infringer, the Board would find conclusively established that the device infringed—or at least satisfied one or more key elements of relevant patent claims. In another case, an accused infringer might produce documentary evidence of the workings of an accused infringing device that, in the absence of any substantial impeachment by the patent holder, the Board would find conclusively established that the device did not infringe—i.e., did not satisfy


218 Cf. Kaplow, *supra* note Error! Bookmark not defined., at 1227 (arguing that “it often may make sense to organize staging by type of evidence,” perhaps “begin[ning] with key documents or only a few central witnesses”).

219 The standard for a substantive determination is a variant of the standard for assessing whether a patentee has a sufficient likelihood of success in a patent suit to justify a preliminary injunction. Trebro Mfg., Inc. v. Firefly Equip., LLC, 748 F.3d 1159, 1165 (Fed. Cir. 2014) (“An accused infringer can defeat a showing of likelihood of success on the merits by demonstrating a substantial question of validity or infringement.”).
at least one element of relevant patent claims. Because the Board would have the option of not issuing a substantive determination on an issue raised before it, parties would have an incentive to highlight and prioritize their best arguments. The Board could further encourage such prioritization by regulating the length of filings presented to it.

The Board’s reasoning and determinations would generally be made publicly available and would be admissible in court although, to avoid constitutional concerns with jury rights or the prerogatives of Article III courts, the Board’s determinations on substantive matters would only be advisory, rather than binding. There would be no judicial review of the Board’s determination independent of continuation of the original district court action or analogous proceeding. The trial court would conduct a trial de novo, but the courts would accord the Board’s determinations weight in the manner of *Skidmore v. Swift & Co.* for agency statutory interpretations—in other words, giving those determinations weight in accordance with the PLRB’s expertise, its care in deliberation, the unanimity or consistency of its judgments, and the quality of evidence before it.

The Board’s determinations would have some effects beyond their ability to influence later court decisions under a *Skidmore*-like standard. First, if the Board found that, under the “clear and convincing plus” standard, a patent claim is invalid based on grounds that are a permissible basis for USPTO post-issuance review, the Board’s determination would automatically trigger a right to such reexamination or review at the option of the successful challenger to the claim’s validity. Second, if a party proceeds to court in the face of an adverse “clear and convincing plus” determination by the Board and if the party loses on that same issue on grounds identical to those invoked by the Board, that party would presumptively have to pay court costs and reasonable attorney fees associated with the opposing side’s contestation of that issue in the later proceedings. Third, and relatedly, if a party loses before the Board, the party might need to pay costs associated with the Board proceedings and, in exceptional cases, might be required to pay reasonable attorney fees to the other side in compensation for the cost of representation before the Board. Fourth, the Board’s determinations could factor into later assessments of whether district court litigation has involved a violation of Rule 11 of the Federal Rules of Civil Procedure or whether patent infringement should be considered willful and thus a potential basis for enhanced damages. Finally, if the Board rules in favor of a party, such as

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220 As with court opinions, confidential information might be redacted from publicly available versions of PLRB opinions.

221 323 U.S. 134 (1944).

222 Id. at 140 (describing bases for deference to administrative opinions even when “not controlling upon the courts”).
a cash-poor business entity, that lacks the capacity to appear in court to defend itself, the Board would intervene in any continuation of the relevant district court proceeding to make its reasoning and determination part of the record before the district court.

Generally speaking, complainants who have initiated the relevant suit in district court would pay for the Board’s preliminary review process through administrative fees determined by rule.\textsuperscript{223} As with various USPTO fees, there would be substantially reduced fees for small entities and micro-entities who are not stand-ins for better-monetized entities.\textsuperscript{224} Further, by request, parties, including business entities, might qualify for \textit{in forma pauperis} treatment, under which the Board would waive fees and cover these parties’ share of the costs through surplus from administrative fees collected from other parties or a “patent system cost” added to patent-issuance and maintenance fees for patent holders generally and collected on behalf of the Board. If there is concern that the fees required to pay for review would tend to be too high to serve interests in access to justice, the preliminary review procedure can be more generally supported through increases to existing fees associated with the obtaining and maintenance of patent rights, whether or not asserted in litigation. With the USPTO granting about 300,000 new patents each year,\textsuperscript{225} an increase of only a few hundred dollars in fees associated with patent issuance might do much, indeed perhaps more than enough, to pay for PLRB administrative costs.\textsuperscript{226}

2. Reporting Responsibilities and Sunset Provision

Section III.A has argued that early-stage administrative review can add value by permitting early clarification of likely outcomes in patent

\textsuperscript{223} If fees for inter partes and post-grant review serve as guides, standard administrative costs might be in the nature of $10,000 to $30,000. U.S. Patent & Trademark Office, America Invents Act (AIA) Frequently Asked Questions, http://www.uspto.gov/patent/laws-and-regulations/americainvents-act-aia/americainvents-act-aia-frequently-asked (Dec. 13, 2014) (describing fees for inter partes review and post-grant review). Because PLRB review would involve nonbinding assessment according to a clear-and-convincing standard as opposed to binding judgments according to a preponderance-of-evidence standard, costs for preliminary review might be significantly lower than such fees.

\textsuperscript{224} Frakes & Wasserman, \textit{supra} note \textbf{Error! Bookmark not defined.}, at 120 (discussing potential implications of reduced USPTO fees for “small entities” and “micro-entities”).


\textsuperscript{226} If PLRB proceedings cost about $10,000 to $30,000 each, \textit{see supra} note 223, and there are still about 5,000 patent suits filed each year, \textit{see supra} note 128 and accompanying text, PLRB administrative costs would total to about $50 million to $150 million per year, an amount that could be raised by obtaining $170 to $500 in additional fees for each of 300,000 issued patents.
litigation. For this to occur in practice, however, there must in fact be patent-infringement disputes in which parties are willing and able to raise issues for which there is a reasonable chance that the administrative body will deliver a definitive judgment. A large number of the complaints about current patent litigation indicate a belief that many patent-infringement disputes that result in the filing of suit are of this nature—i.e., featuring obviously weak and perhaps even bad-faith allegations of infringement or recalcitrant refusals to pay for a patent license even in a relatively clear case of infringement. If this belief is true, one would expect to see a significant number of litigants take advantage of the proposed administrative review process. If this belief is false, the PLRB would presumably deliver few administrative determinations that a side had prevailed under the “clear and convincing plus” standard, either because parties neglected even to argue for such a determination or because the Board found insufficient basis for it.

Even if PLRB assessments that the “clear and convincing plus” burden of proof was satisfied turned out to be rare, the PLRB could make an important contribution to patent policy. Questions of whether, how, and to what extent our patent system is broken or in crisis have sharply divided academics and policymakers alike, and part of the difficulty in overcoming such division has been limited information on what is happening on the ground. Lack of information on the contents of private licensing and settlement agreements is a major stumbling block and will remain one under this Article’s proposal. Also problematic is difficulty in assessing the relative quality of individual patent-infringement suits, a difficulty complicated by differences between trial fora and by selection effects of settlement, which leaves only a relatively small and likely unrepresentative subset of disputes subject to decisive judgments. The PLRB will be in a centralized, start-of-litigation position uniquely suited for the gathering of information on the full cross-section of patent-infringement suits filed in district courts each year. Thus, at worst, experience with the PLRB should provide substantial insight into the nature of the current patent-litigation landscape, providing information that might help break at least a few of the information impasses that impeded the reaching of common ground in policy debates. With a view toward the PLRB’s information-gathering potential, the PLRB would be expected to provide annual reports to Congress on the state of U.S. patent litigation as seen from the PLRB’s perspective.

This is not to say that such information gathering would suffice to justify the PLRB’s indefinite continuation. If USPTO fees for post-issuance review proceedings are a reasonable guide, administrative costs associated with the operation of the PLRB might be expected to be in the nature of

227 Golden, supra note 43, at 550 (observing that “the terms of patent-licensing agreements … are generally confidential”).
$10,000 to $30,000 per case, or in the nature of a total of about $50 million to $150 million per year if we assume something like the 5,000 lawsuits per year. Given (1) the fact that attorney fees in individual patent disputes can exceed $10 million and (2) concerns that U.S. patent litigation is costing businesses tens of billions of dollars per year, adding such an administrative cost to the system seems a reasonable short-term undertaking as an effort at a policy solution. But as indicated above, information gathered by the PLRB might indicate that widely indicated beliefs about the patent-litigation landscape are wrong. Further, parties might figure out how to game PLRB review in ways that undermine its intended social value—for example, by increasing patent suit filings in order to increase the odds of “winning the lottery” by obtaining at least one favorable assessment from PLRB administrative review. Consequently, this Article proposes that Congress initially adopt PLRB review only on a pilot basis. Absent additional congressional action, the PLRB pilot would terminate after a specified period—for example, three years—that allows a reasonable time for the maturation of practices within and before the PLRB, as well as for the gathering of information to aid future policymaking. If Congress wishes to restrict the impact and burden of PLRB review further, it might apply such review only to a subset of patent cases—for example, a subset of randomly selected cases or a subset of cases involving particular types of subject matter such as software or business methods.

3. Agency Location for the Patent Litigation Review Board

There seem at least two main candidates for the location of the proposed Patent Litigation Review Board (PLRB) within the administrative state. First, the Board could be folded into the USPTO, either as a new division or as a branch of an expanded Patent Trial and Appeal Board (PTAB). Through the USPTO’s various post-issuance proceedings as well as appeals from examiner rejections of patent applications, the PTAB has experience with essentially the full range of validity questions that could face the PLRB. Because literal-infringement analysis parallels analysis of a patent claim for satisfaction of the requirement of novelty, many infringement questions would likely not be a major leap from questions that the PTAB already faces. Further, the most prominent basis for charging patent unenforceability has tended to be inequitable conduct in the process of obtaining the patent from the USPTO, an issue that USPTO judges might be particularly competent to assess. Moreover, the USPTO already has experience in recruiting and training administrative patent judges and in setting fees for associated review processes. Location of the PLRB within

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228 See supra note 128 and accompanying text.
the USPTO might also make it easier to coordinate PLRB review with the triggering of USPTO post-issuance review and might simplify the funding arrangements for the PLRB, particularly to the extent PLRB activities are to be funded by patent application or maintenance fees. More generally, location of the PLRB within the USPTO would avoid the need to construct a new administrative home for the proposed process of litigation review.

On the other hand, there are reasons to resist the upfront convenience of folding the PLRB into the PTAB or of establishing the PLRB as a new division within the USPTO. First, there is the concern that the USPTO already is strained in performance of its current missions, and the generally increasing inflow of new patent applications229 and petitions for adversarial forms of post-issuance review230 suggests that this strain is unlikely to let up soon. Second, the PLRB’s job would in a substantial sense be to preview likely outcomes in litigation, rather than before the USPTO. These sets of likely outcomes can diverge because the USPTO might have taken a stance on an issue—for example, the patentability of genetic sequences—that a court would view as more open. A PLRB located within the USPTO might have more difficulty acting as a faithful previewer of likely court outcomes as opposed to a follower of established USPTO positions. Relatedly and thirdly, the USPTO has traditionally (and explicitly) viewed patent applicants and owners as its “customers.” Despite recent increases in the use of USPTO post-issuance proceedings to bring inter partes patent challenges,231 this fact, along with the USPTO’s reliance on application and maintenance fees for its funding232 and more general concerns about USPTO “capture,”233 might justify worry about a USPTO-based body’s capacity to make determinations with the impartiality and appearance of impartiality thought desirable even with respect to only advisory determinations that formally serve as no more than inputs to Article III court proceedings. Finally, although the USPTO has shown an ability to recruit highly qualified attorneys for the PTAB,

229 See U.S. Patent & Trademark Office, U.S. Patent Statistics Chart: Calendar Years 1963-2014 (showing that the number of U.S. utility patent applications grew from 61,841 in 1984 to 107,233 in 1994 to 189,536 in 2004 and to 285,096 in 2014), available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.htm; cf. Golden, supra note 67, at 463 (noting that, “at least for … utility and design patents, the general long-term trend has been for the number of patents issued each year to increase at an accelerating pace”).

230 See supra text accompanying notes __.

231 See supra text accompanying notes __.

232 See Michael D. Frakes & Melissa F. Wasserman, Does Agency Funding Affect Decisionmaking?: An Empirical Assessment of the PTO’s Granting Patterns, 66 VAND. L. REV. 67, 69 (2013) (“Since 1991, the PTO’s budget has largely been derived from patent examination and post-allowance fees.”).

PTAB judges already number in the hundreds, and there might be some value in having a separate, relatively small body to focus on issues relating to patent litigation and to facilitate oversight of PLRB performance.

If the PLRB were to be a separate administrative body, it might be modeled on adjudicative agencies such as the ITC. Alternatively, it could be established as a private, non-profit corporation with government responsibilities in the manner of the Public Company Accounting Oversight Board (PCAOB). The latter model would permit the PLRB to avoid standard federal pay scales, thereby likely enhancing its ability to recruit experienced professionals best qualified to make preliminary determinations in patent suits. In either case, members of the PLRB could be appointed by the President for a statutorily set term of years, subject to removal by the President only for cause.

4. PLRB Adjustment and the “Flood of Claims” Concern

A major concern with the addition of any pre-litigation screening process such as PLRB review is that it will add complication and expense that outweighs any of its benefits.

A potential concern with PLRB review is that, despite intentions to the contrary, such review’s predominant effect might be more to add complication and expense to processes of resolving patent disputes, rather than to bring about their more efficient resolution or deterrence. First, there is the basic concern that PLRB review necessarily adds a new preliminary stage to patent litigation. Up front, the addition of this stage necessarily adds some costs. The preceding subsection has provided some reason to believe that, with respect to sufficiently meritorious suits, these costs will be outweighed by the increases to the values of those suits that PLRB review generates. Further, to the extent that any filing fees associated with PLRB review create entry barriers to patent holders with limited access to capital—for example, independent inventors or startups—these concerns can be


235 See Free Enter., 561 U.S. at 484–85 (noting that the PCAOB’s technically private status enables it “to recruit its members and employees from the private sector by paying salaries far above the standard Government pay scale”); Bordonaro, supra note 234, at 476 (observing that “the PCAOB does not follow the standard federal pay scale”).

236 Cf. Free Enter., 561 U.S. at 487 (accepting the “understanding” “that the Commissioners cannot themselves be removed by the President except under the Humphrey’s Executor standard”).
mitigated by reducing or even waiving fees for such litigants, or even by abandoning filing fees and absorbing costs into existing fees for patent applications, patent issuance, or patent maintenance.

A second concern is that, from a social standpoint, parties might spend excessively on argument before the PLRB and thus dissipate any social value that the PLRB promises to generate and perhaps even cause PLRB proceedings to generate more social cost than value. A sub-concern here is that the PLRB might encourage more filings of weak claims, rather than fewer, as patent holders with weak claims come to view the PLRB as a useful forum to test the prospects for their claim relatively cheaply in comparison to district court litigation. Use of the PLRB as a “trial balloon” forum for claims that might not otherwise be asserted in district courts could undermine at least part of the PLRB’s promise as a means to encourage swifter and cheaper resolution, or in some cases simple non-assertion, of claims of patent infringement. In particular, if the cost of pursuing claims before the PLRB is set sufficiently low relative to the benefit to the claimant of Type II error (i.e., a false positive) for a weak claim, then a party may find a strategy of “flooding” the PLRB with weak claims to have a positive net present value. Functionally, if even one of a number of weak claims receives a positive PLRB assessment and the value of such a positive assessment is high enough, this one success could more than make up for the cost of bringing an entire batch of weak claims.

This subsection grapples with this second concern about potential PLRB-induced costs by presenting an additional model, one that models individual parties’ incentives to make assertions of essentially any form before the PLRB. The model suggests that, in a broad range of circumstances, the private costs of making such assertions will cause rational parties to exercise sufficient self-restraint to preserve the PLRB’s promise as a mechanism for improving overall social welfare. On the other hand, under a limited set of circumstances, private parties’ use of PLRB proceedings could, if left unregulated, drive the social costs of those proceedings above their social benefits. Although the model suggests only a limited possibility that rational profit-maximizing parties will drive PLRB toward inefficiency, this possibility, as well as the further possibility of inefficiency-promoting behavior or factors not falling within the model, provides reason to ensure that the PLRB has powers to regulate its proceedings in interests of streamlining and efficiency that are at least comparable to those of district courts or the PTO in its post-issuance proceedings. For example, by imposing page limits on filings, demanding that parties make certain assertions with particularity, and even potentially limiting the number of the issues a party can present for PLRB review, the PLRB can do much to counter any
tendencies toward socially excessive argument before the PLRB that parties turn out to exhibit.

In the model, we consider the incentives for a party to a patent lawsuit to raise an issue for review by the PLRB. In light of the clear-and-convincing-plus standard for PLRB review, we model two basic ways that the PLRB can be expected to rule on that issue if raised: (1) the PLRB can agree that the petitioner should prevail based on the information at hand (an agreement hereinafter described as an “affirmative” ruling), or (2) the PLRB can rule that existing evidence is inconclusive. Let us assume that the probability of the PLRB agreeing that the petitioner should prevail is given by the nonnegative value \( p \), and let us assume for simplicity that an inconclusive ruling by the PLRB does not generate any information that adds or destroys value for society or the individual parties.\(^{237}\) On the other hand, if the petitioner obtains a favorable ruling, the petitioner will effectively win an amount equal to \( V_{\text{petr}} \) as a result of an increase in the expected value of the petitioner’s side of the patent litigation in light of the petitioner’s victory before the PLRB. There are at least two potential channels for contributions to the win value \( V_{\text{petr}} \): (1) an increase in the petitioner’s likelihood of at least partially prevailing in any subsequent district court litigation and (2) an increase in the likelihood of settlement on terms relatively favorable to the petitioner after the favorable PLRB ruling. Of course, there is a price for the possibility of winning in the PLRB proceeding: the cost \( C_{\text{petr}} \) of raising the issue and then litigating it before the PLRB. Consequently, we can expect a rational profit-maximizing party to raise the issue for PLRB review only when the probability of winning times the value of winning exceeds or equals the cost of making and pursuing the relevant petition—i.e., only when \( pV_{\text{petr}} \geq C_{\text{petr}} \) or, alternatively stated, only when \( p \geq C_{\text{petr}}/V_{\text{petr}} \).

Likewise, we assume that society will gain from the early clarification that an affirmative PLRB ruling brings, with the value of that gain being given by \( V_{\text{soc}} \) and the probability of that gain being \( p \), the previously indicated probability of an affirmative ruling. This gain will come at a cost \( C_{\text{soc}} \), however: including the cost to the petitioner \( C_{\text{petr}} \) of engagement in PLRB proceedings, the cost \( C_{\text{resp}} \) to the other party or parties to the case of responding to the petition, and the cost \( C_{\text{pub}} \) to the public of conducting those proceedings. Under the model, the net welfare change for society as a result of the petitioner’s pursuit of an issue before the PLRB is therefore given by

\[^{237}\text{One might expect that an inconclusive ruling by the PLRB will have a negative effect on the expected value of the litigation for the petitioner as the case will thereby become one in which the petitioner has failed to prevail before the PLRB, rather than one in which the petitioner only had a probability of failing to prevail before the PLRB. But because the standard for prevailing before the PLRB is intended to be very demanding, we assume any such negative effect to be negligible to first approximation.}\]
Δ = pV_{soc} - C_{soc}. Thus, society only loses from PLRB proceedings if for an appropriately representative petition, pV_{soc} < C_{soc} or, alternatively stated, p < C_{soc}/V_{soc}.

Hence, under the model, for the raising of an issue before the PLRB to be rationally in a party’s interest but contrary to society’s interest, the value of \( p \), the probability of the petitioning party’s prevailing before the PLRB, must lie within a doubly restricted range: \( C_{petr}/V_{petr} \leq p < C_{soc}/V_{soc} \). Under some circumstances, there will be no values of \( p \) that satisfy the twin conditions because \( C_{soc}/V_{soc} \) is in fact less than \( C_{petr}/V_{petr} \), and thus there are no values that are less than \( C_{soc}/V_{soc} \) and greater than or equal to \( C_{petr}/V_{petr} \). This situation can arise when there are strong positive externalities to the PLRB’s providing a preliminary judgment on a particular point—for example, the invalidity or limited scope of a patent claim whose validity and breadth have significant implications for competitors of the petitioner as well as the petitioner itself.\(^{238}\)

On the other hand, one can also anticipate that, when a party chooses to pursue litigation of an issue before the PLRB, that party will often be litigating an issue that, if the party prevails, will produce disproportionate benefit, relative to the rest of society, for that individual party, perhaps by mainly effecting a wealth transfer between the two parties, rather than doing much to benefit society at large. Thus, given that the cost to society of PLRB proceedings \( C_{soc} \) includes and therefore necessarily exceeds \( C_{petr} \), one can certainly imagine situations where \( V_{petr} \) is so sizable relative to \( V_{soc} \) that \( C_{soc}/V_{soc} > C_{petr}/V_{petr} \), and there is a range of available \( p \) values that can lead to net negative social welfare effects from PLRB review.

But it is important to recall that, under the model, \( p \) values that can lead to net negative social welfare effects are always capped by the value \( C_{soc}/V_{soc} \), the ratio of the cost to society of PLRB proceedings divided by the societal value added by those proceedings, including savings in litigation costs. If we assume that a PLRB ruling declaring a party’s position to be weak or strong will often lead to the associated issue dropping out of further litigation, and if we assume that the ratio between the costs of PLRB proceedings and the costs of litigation before the district courts will roughly track the ratio of costs associated with current PTO inter partes review proceedings and the costs of litigation before the district courts, we have reason to believe that the ratio \( C_{soc}/V_{soc} \) will be in the nature of a fraction such as 0.1 or lower. In other words, because district court patent litigation seems, generally speaking, to result in litigation costs that are roughly ten times or

\(^{238}\)Golden, supra note 190, at 616 (“[A] patent challenger can generate significant positive externalities that are not positively reflected in a challenger’s incentives.”).
more higher than those characteristic of PTO administrative proceedings,\textsuperscript{239} litigation cost savings alone could cause the ratio $C_{soc}/V_{soc}$ to take a value that is no more than about 0.1 or 10%. In short, there is reason to believe that PLRB proceedings will produce net positive value for society as long as parties restrain themselves—or are restrained through appropriate rules governing proceedings—such that the overall success rate of their filings is at least about 10%.

Such discretion in raising issues when a claimant faces a demanding standard is more than plausible. In the face of an arguably more demanding standard for success than the PLRB’s proposed clear-and-convincing-plus standard, patentees already restrain their filing of motions for preliminary injunctions so that such motions have a success rate of nearly 20%.\textsuperscript{240} Hence, the suggestion from the model is that, as long as the PLRB policies and record make clear that a litigant has only a very limited chance of obtaining a favorable as opposed to substantially inconclusive judgment with respect to an issue that the litigant places before the PLRB, parties are likely to restrict their use of PLRB proceedings accordingly. Of course, the PLRB can use further procedural tools, such as a page or word limits, to effectively force further restraint as necessary.

\section*{C. Complement or Substitute for Other Reforms}

Beyond the concern with a potential flood of claims before the PLRB, one potential objection to this Article’s proposal for prelitigation administrative review is that the reform is unnecessary because there have already been a number of recent adjustments to how the patent system operates and more reforms might already be in the works.\textsuperscript{241} In short, one can anticipate an argument that, in light of other reforms, patent litigation administrative review is unnecessary. To respond to such an argument, this section discusses recently implemented or proposed reforms and the work that they leave for the proposed administrative review.

\textsuperscript{239} See AIPLA 2015 Survey, supra note 16, at 37–38 (listing median estimated patent litigation costs and inter partes review costs).


\textsuperscript{241} Cf. F. Scott Kieff & Henry E. Smith, How Not to Invent a Patent Crisis, in Reacting to the Spending Spree: Policy Changes We Can Afford 55 (Terry L. Anderson & Richard Sousa eds., 2009) (noting “rapid, and we would argue excessive, changes that have already occurred in the courts”).
In 2011, Congress made substantial adjustments to the patent system’s mechanisms for dispute resolution. In early 2011, Congress enacted a statute launching the Patent Pilot Program under which, in certain districts, judicial expertise in handling patent cases can be cultivated by preferentially assigning such cases to a select subset of district judges. Later that same year, Congress passed the America Invents Act (AIA). The AIA limited joinder in patent suits, apparently in response to the litigation practices of PAEs that, by alleging infringement against several unrelated defendants in a single case, could reduce their enforcement costs while potentially complicating litigation for accused infringers and making the PAE’s choice of forum less vulnerable to challenge. As noted above, the AIA also expanded opportunities for post-issuance review of patent validity issues at the USPTO.

The courts have also been active in making adjustments, whether to their understanding of substantive patent law or to their procedures. The Supreme Court and Federal Circuit have issued decisions that, inter alia, have (1) tightened—or re-emphasized the demands of—the patentability requirements of subject-matter eligibility, nonobviousness, claim definiteness, and adequate disclosure; (2) emphasized district courts’ discretion to deny injunctive relief; (3) tightened or re-emphasized

243 See Taylor, supra note 27, at 672–78 (discussing how joining multiple defendants can reduce a patentee’s enforcement costs, increase those of accused infringers, and decrease the probability of transfer); see Klerman & Reilly, supra note Error! Bookmark not defined., at 16 (discussing how “[t]he Eastern District of Texas’s case management of multi-defendant and consolidated cases … benefits patentees”).
244 See supra text accompanying note 26.
248 Ariad Pharm., Inc. v. Eli Lilly & Co., 598 F.3d 1336, 1340 (2010) (en banc) (“We now reaffirm that § 112, first paragraph, contains a written description requirement separate from enablement ….”).
249 eBay Inc. v. MercExchange, L.L.C., 547 U.S. 388, 394 (2006) (emphasizing that “the decision whether to grant or deny injunctive relief rests within the equitable discretion of the district courts”).
requirements for proving (a) patent-infringement damages\(^{250}\) and, on the other side of a patent-infringement suit, (b) inequitable conduct before the USPTO;\(^{251}\) (4) increased opportunities for attorney fee shifting;\(^{252}\) (5) broadened application of a statutory rule of construction to effectively require narrower interpretations of many existing patent claims;\(^{253}\) (6) overruled decisions erecting hurdles to bringing or triumphing in declaratory judgment actions challenging the scope or validity of patent rights;\(^{254}\) and (7) repeatedly used writs of mandamus to order transfer of patent cases to new districts, particularly in cases in which the original district was the Eastern District of Texas.\(^{255}\) Trial courts have taken additional measures. Starting with the Northern District of California in 2000,\(^{256}\) various district courts and judges have adopted local rules or standing orders specifically directed toward managing patent litigation,\(^{257}\) commonly with an eye toward achieving greater efficiency.\(^{258}\)


\(^{252}\) Octane Fitness, LLC v. ICON Health & Fitness, Inc., 134 S. Ct. 1749, 1755 (2014) (holding that a Federal Circuit framework for when attorney fees may be awarded was “unduly rigid”).

\(^{253}\) Williamson v. Citrix Online, LLC, 792 F.3d 1339, (Fed. Cir. 2015) (en banc in relevant part) (overruling precedent “characterizing as ‘strong’ the presumption that a [patent claim] limitation lacking the word ‘means’ is not subject to § 112, para. 6”).

\(^{254}\) Medtronic, Inc. v. Mirowski Family Ventures, LLC, 134 S. Ct. 843, 846 (2014) (reversing a Federal Circuit holding that a licensee bears the burden of proving non-infringement in a declaratory judgment action); MedImmune, Inc. v. Genentech, Inc., 549 U.S. 118, (2007) (holding that a patent licensee “was not required … to break or terminate its 1997 license agreement” before challenging the patent in a declaratory judgment action).


\(^{256}\) Pelletier, supra note 116, at 478 (“[T]he Northern District of California is the acknowledged model and pioneer of local patent rules, having adopted its first version in 2000.”).

\(^{257}\) Megan M. La Belle, *The Local Rules of Patent Procedure*, 47 ARIZ. ST. L.J. 63, 63 (2015) (“Today, thirty district courts in twenty different states have comprehensive local patent rules, and many more individual judges have adopted ‘local-local’ rules or standing orders that apply to patent cases in their courts.”).

\(^{258}\) Menell et al., supra note 109, at 2–8 (“In an effort to provide fair and efficient management of patent cases, some districts have adopted Patent Local Rules ….”).
Despite exclusive federal jurisdiction over patent-infringement lawsuits, states have also taken measures to regulate processes of patent assertion. Spurred by the actions of patent assertion entities that have carpet-bombed industry sectors with demand letters asserting patent infringement, a majority of states have now passed laws specifically targeting patent demand letters, commonly criminalizing patent-infringement allegations made in bad faith and requiring alleged violators to post a bond for potential penalties.²⁵⁹

Even in states without such laws, alleged infringers have begun looking to state consumer protection laws as a potential basis for counterclaims against patentees.²⁶⁰

But these adjustments have proven inadequate to stem either the flood of patent-infringement suits into the district courts or continuing perceptions that patent assertion has become a drag on innovation. Part of this failure reflects counterbalancing adjustments by patent holding plaintiffs. For example, patent holders have proven adept at partly circumventing the force of the new joinder limitations by “increasing the number of filings against individual defendants who would have previously been named in a single complaint,” by “employing multidistrict litigation (MDL) procedures to bind cases for pre-trial activities,” and by incorporating in Delaware to pursue defendants in a forum where consolidation of cases is likely because of the forum’s “relatively small” size.²⁶¹

Nonetheless, in early 2015, there was some hope that a combination of the USPTO’s new post-issuance proceedings and adjustments to approaches to subject-matter eligibility and fee shifting had stanched the torrent of new patent suits. From a record number of 6,114 new suits filed in 2013, the number of new suits dropped to 5,070 in 2014.²⁶² But in 2015, the number of new suits bounced back to 5,829,²⁶³ and this number of new suits in district courts was supplemented by an increasingly prominent, rising tide of new filings in USPTO post-issuance proceedings.²⁶⁴ As a result, despite

²⁵⁹ Ryan Davis, Patent Troll Targets Getting Boost from State Laws, LAW360, Nov. 24, 2015 (observing that “[d]ozens of states have recently passed laws making it a crime under state law to allege patent infringement in bad faith” and that 15 states “include a bond provision”).
²⁶⁰ Id. (noting use of “state consumer protection statutes” by “[s]ome accused infringers”).
²⁶¹ Smith & Transier, supra note 13, at 231–32.
²⁶³ Id. (same).
all the reforms from 2006 through 2014, there is cause for concern that the burdens of patent litigation have only worsened.

More recent changes to the Federal Rules of Civil Procedure offer further hope for relief but little assurance. In 2015, the Supreme Court approved new Federal Rules of Civil Procedure that seek to “contro[l] the expense and time demands of litigation” and to promote “prompt and efficient resolutions of disputes.”265 Steps to these ends notably include (1) shortening the default deadline for a trial judge’s mandatory scheduling order;266 (2) limiting authorized discovery to “nonprivileged matter” “proportional to the needs of the case”;267 and (3) tightening patent-suit pleading requirements by eliminating the ability of patentees to rely on Form 18, a model complaint for patent-infringement suits.268

But these changes to the Federal Rules seem insufficiently powerful to drain the patent litigation morass. The change in the default deadline for mandatory scheduling orders does not seem very significant for the bulk of patent suits because of the proliferation of local rules and standing orders that already set default schedules.269 Given prior limitations on discovery, the significance of the new proportionality requirement for discovery will only become clear with time270 and may leave much up to individual trial judges’ discretion.271 The abrogation of patentees’ ability to rely on Form 18 does have at least one clearly identifiable effect: unshielded from any further ability to rely on Form 18, patent-infringement plaintiffs have become more effectively subject to a general “plausibility” pleading requirement

267 Id. at 10.
268 Id. at 49 (showing abrogation of Rule 84); see also Matthew Bultman, Stricter Patent Pleading Requirements Take Effect Dec. 1, LAW360 (Nov. 30, 2015) (“The changes, a rewrite of the Federal Rules of Civil Procedure, … eliminate a rule that allowed filers of patent suits to rely on a bare-bones model complaint.”).
269 See supra text accompanying note 258.
270 Cf. Moore, supra note 28, at 1114–16 (contesting the position of the Advisory Committee on Rules of Civil Procedure that addition of the proportionality requirement has little significance).
271 Cf. Alexsam, Inc. v. IDT Corp., 715 F.3d 1336, 1342 (Fed. Cir. 2013) (“A district court’s decision to sanction a litigation [for a discovery violation] is reviewed for abuse of discretion.”); Abbott Point of Care Inc. v. Epocal, Inc., 666 F.3d 1299, 1302 (Fed. Cir. 2012) (“[T]his court reviews the district court’s denial of discovery, an issue not unique to patent law, for abuse of discretion …. ” (internal quotation marks omitted)).
articulated in recent Supreme Court opinions.\textsuperscript{272} But application of this pleading requirement might be left substantially up to the discretion of individual district judges.\textsuperscript{273} Further, the plausibility requirement does not seem to address concerns about patent-infringement suits that, though plausible on the face of a complaint, are unlikely to survive serious contestation.\textsuperscript{274}

Additional adjustments might be forthcoming from Congress. Over the past few years, members of Congress have introduced several bills focused on patent litigation reform\textsuperscript{275} or the pre-litigation demand letters\textsuperscript{276} that have attracted the attention of state legislators.\textsuperscript{277} Litigation reform bills have proposed changing aspects of litigation such as pleading requirements, rules for attorney-fee shifting, the rules regulating allowable venues for district court litigation, and the scope of allowable discovery.\textsuperscript{278} But efforts to enact the bills ultimately stalled.\textsuperscript{279}

Regardless of whether these bills move forward in this or a later session of Congress and regardless of whether “venue reform” effectively comes through a Supreme Court case currently under review,\textsuperscript{280} any resulting

\begin{itemize}
\item \textsuperscript{272} Gugliuzza, supra note Error! Bookmark not defined., at 283–84 (noting that “[p]atent litigation ha[d] been partially immunized from the pleading revolution wrought by the Supreme Court’s decisions” because of complainants ability to rely on Form 18).
\item \textsuperscript{273} See Kaplow, supra note Error! Bookmark not defined., at 1285–86 (suggesting that the plausibility pleading standard might effectively leave much up to the idiosyncratic views of individual district judges).
\item \textsuperscript{274} Cf. Robert G. Bone, Twombly, Pleading Rules, and the Regulation of Court Access, 94 IOWA L. REV. 873, 878 (2009) (contending that “the Court’s plausibility standard marks only a modest departure from notice pleading”).
\item \textsuperscript{275} See Gugliuzza, supra note Error! Bookmark not defined., at 283 (“Of the fourteen patent reform bills introduced in the 113th Congress, five focused specifically on patent litigation.”).
\item \textsuperscript{276} See id. (discussing bills that would “mak[e] it illegal to send ‘in bad faith’ a letter threat[en]ing patent infringement litigation”).
\item \textsuperscript{277} See supra text accompanying note 259.
\item \textsuperscript{278} See, e.g., Innovation Act, H.R. 9, 114th Cong. (2015); Protecting American Talent and Entrepreneurship Act (“PATENT Act”), S. 1137, 114th Cong. (2015); see also Gugliuzza, supra note Error! Bookmark not defined., at 283 (discussing bills that “addressed four main topics relevant to patent litigation: pleading requirements, discovery, recovery of attorneys’ fees, and stays of lawsuits against end users”).
\item \textsuperscript{279} Tony Dutra, Sources Say Patent Bills Not Right-Sized But Goodlatte, Pro-Bill Lobbyists Keep Fighting, 90 BNA’S PATENT, TRADEMARK & COPYRIGHT J. 3624, 3624 (Oct. 30, 2015) (reporting indications that patent litigation reform legislation was “unlikely to move forward in its current form”).
\end{itemize}
changes will not obviate the desirability of this Article’s proposal. The changes in question would not provide for automatic early-stage review by impartial government actors of the substance of patent litigation. Thus, these changes cannot offer the informational advantages for individual parties and society that are especially characteristic of such review. In short, even if various alternative reforms are implemented, this Article’s framework for patent litigation administrative review would still promise to substantially improve how the patent system operates. At the same time, adoption of this Article’s proposal might decrease the felt need for many alternative reforms that do not effectively target the patent system’s fundamental informational difficulties.

CONCLUSION

Preliminary administrative review of patent suits can improve the patent system’s immediate economic performance and provide information that enables further improvements. Patent litigation in the United States currently bears many hallmarks of a process ripe for, and indeed marked by, opportunistic behavior. High litigation costs, long delays in obtaining clarifying decisions, and substantial continuing limitations on USPTO pre-issuance and post-issuance review suggest that a robust process of preliminary administrative review can mitigate the current patent-litigation morass. Such administrative review seems particularly likely to be cost-benefit-justified to the extent it focuses on the “tails” of party assertions in patent litigation: discouraging the weakest assertions and encouraging the strongest ones. This Article has shown that multiple economic models, using realistic figures for the costs of review, support the argument that preliminary administrative review will improve patent system performance.

On the other hand, dramatic litigation reforms such as the institution of preliminary administrative review can sometimes generate unexpected effects. Consequently, this Article recommends adopting the proposed framework on a trial bias. A sunset provision would require policymakers to reevaluate the framework within a few years. Innovative policymaking with a continuing commitment to information gathering and reevaluation will likely be crucial to ensuring the optimal performance of legal regimes like the U.S. patent system. Institution of preliminary administrative review for patent litigation will be a great place to start.