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To Improve Patent Quality, Let's Use Fees to Weed Out Weak Patents

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TO IMPROVE PATENT QUALITY, LET'S USE FEES TO WEED OUT WEAK PATENTS

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Too often, proposals for improving patent quality zero in on modifications to narrow aspects of patent examination—tweaks that, at best, will only improve future applications—without considering broader reforms that can improve all patents, including those currently in force. The PTO's current batch of "New Quality Proposals," unfortunately, suffers from this same shortsightedness.[2] Not a single proposal aims to enhance the quality of issued patents. Nor do any take advantage of what is perhaps the most straightforward policy lever at the agency's disposal: the ability to set fees. In my view, the PTO's failure to take a sufficiently expansive view of "patent quality," and of the tools available to enhance it, ensures that its efforts will fall far short of their potential.

Examination Tweaks Aren't Enough

This is true, first, because proposals applying exclusively to examination offer at best an incomplete solution. As a practical matter, invalid patents will continue to issue despite the PTO's best efforts to improve examination. For example, current claim construction rules allow the meaning of claim language to expand over time to cover after-arising technology that was unforeseeable at the time of examination.[3] Also, it is nigh impossible for examiners to locate prior art in nascent, rapidly-evolving fields that lack a comprehensively indexed technical literature.[4] As a result, thorough examination can only go so far in improving the quality of new patents. Moreover, reforms that focus exclusively on examination ignore the roughly two million patents already in force,[5] the vast majority of which issued during previous eras when examination and patentability standards were far more lax.[6] In short, efforts to improve patent quality must not end with a notice of allowance, but rather should extend throughout the term of patent protection.

Second, proposals that merely tweak examination fail to take advantage of the PTO's newly-granted authority to set fees.[7] Because a patent's value depends in large measure on its quality, owners and seekers of low-quality patents are the most sensitive to fluctuations in patent office fees and, thus, also the most likely to allow their existing patents to expire and reduce their future filings in response to an increase in fees. Fee reductions can help, too. Patentees that assert low-quality patents in bad faith are most likely to direct their abuse at parties for whom the costs of defense are particularly onerous and, thus, who are also most likely to defend themselves by petitioning for administrative review of asserted patents—rather than settling for nuisance value—in response to a reduction in required fees. In both situations, fee changes improve overall patent quality directly by reducing the quantity of questionable patents and applications, as well as indirectly by freeing up PTO resources to examine with greater care the smaller number of applications that are filed as a result of these changes.

Accordingly, the PTO should consider at least two reforms that leverage fees to enhance the quality of all patents, current and future.

Let's Increase Maintenance Fees

First, the PTO should increase maintenance fees to hasten the expiration of low-quality patents. Weak patents impose costs on society principally when asserted in nuisance suits, and older patents are among those most often enforced in an abusive manner. In a recent empirical study of the ages of asserted patents, I found significant disparity between the relative ages of patents asserted by product-producing tech companies and those asserted by non-practicing entities (NPEs),[8] the subset of patentees most able to leverage the high cost of patent litigation to induce nuisance-value settlements.[9] Notably, I found that companies that acquired patents purely for enforcement purposes were responsible for more than two-thirds of patent suits, naming more than four-fifths of all individual defendants, filed in the last five years of the asserted patent's term.[10] The variance in litigation timing in my sample was so dramatic that all suits asserting the average product-company patent were resolved before the average NPE patent was asserted for the first time.[11] In short, old patents are among those that are least likely to be used by tech companies to protect new products from their competitors—the sine qua non of the patent system—and, instead, among the most likely to wind up in the hands of companies that specialize in filing abusive lawsuits en masse against established technologies.

Unfortunately, the PTO's present maintenance fee structure is ill-equipped to hasten the expiration of low-quality patents before (or while) they are misused. For one, there are too few payments required and payments obligations end too early in the patent term. Under current rules, the final of three maintenance fee payments is due 11.5 years after issuance,[12] many years before the term of protection ends for most patents and often before abused patents wind up in the hands of those who misuse them.[13] As a result, the cost of renewal overwhelmingly falls on legitimate innovators using the patent system as intended, rather than on unscrupulous entities that acquire vague patents late in the term for the purpose of exploiting weaknesses in the litigation system. Annual renewal fees that phase in during the latter half of the patent term would more efficiently accelerate the expiration of patents as soon as the inventions they were originally filed to protect become obsolete.[14]

In addition, maintenance fees are currently too low. Ideally, fees should be set at levels that require patent owners to internalize the full social costs of their patent rights, much like "Pigovian" taxes on gasoline or aluminum cans ensure that consumers internalize the negative externalities created by their purchases.[15] Though estimates of the deadweight loss of the patent system vary, even a conservative estimate would safely place the total in the billions of dollars, if not the tens of billions, per year.[16] As a result, the average annual cost of maintaining one of the roughly two million patents presently in force should at a minimum exceed $1,000 per year,[17] and perhaps should reach $10,000 per year or more.[18] Today, even large entities are charged fees that average less than $750 per year.[19] In addition to better aligning patentees' incentives to obtain patents with the social costs of those rights, increased fees would also help align U.S. patent fees more closely with those required in the past, as well as with those required today in other parts of the world. Today's patent fees are relatively low, both internationally and historically.[20] Many countries, including the United Kingdom, Germany, Japan, and Canada, already charge annual maintenance fees after the first few years of patent protection.[21] Perhaps not coincidentally, these jurisdictions also experience a much lower incidence of abusive patent enforcement.[22] Also, relative to GDP per capita, U.S. patent fees are near historical all-time lows.[23] Measured this way, fees today are about one-tenth as expensive as they were in 1800.[24]

Reduce Fees for Administrative Challenges

Second, the PTO should reduce filing fees for post-grant administrative challenges to make it possible for more accused infringers, especially small and medium-sized businesses operating outside the tech industry, to take advantage of those procedures in defense against low-quality patents asserted in court. Like maintenance fees, post-issue administrative challenges also help weed out low-quality patents issued in the past. In the last two years alone, thousands of invalid claims in hundreds of issued patents have been eliminated in inter partes review (IPR) and other forms of post-grant challenges.[25] Many of these patents earned millions of dollars in unwarranted settlements before being eliminated.[26]

While, on the whole, post-grant challenges have proven to be very beneficial to those accused of infringing low-quality patents, companies that are most susceptible to abusive litigation—small businesses and downstream purchasers of the accused technology[27]—have been reluctant to pursue them to date. In a recent empirical study, I found that technology purchasers and small and medium-sized enterprises (SMEs) are both underrepresented among IPR petitioners relative to the share of patent suits filed against them.[28] Though over a third of patent suits in recent years accused technology purchasers of infringement, purchasers represent less than 7% of IPR petitioners.[29] Similarly, while SMEs were targeted in about 30% of patent suits during the same period, just 21% of IPRs are initiated by SMEs.[30]

A likely explanation for this underrepresentation is the relatively steep cost of IPR. Though certainly cheaper than full blown litigation, IPR still generally costs in excess of $250,000, an amount that leaves ample room for patentees to leverage low-quality patents into nuisance value settlements. There may not be much the PTO can do to reduce cost of legal fees for IPR, but the PTO can lower the fees required to file a petition. Currently, petition and institution fees total at least $23,000, with no discount for small or micro entities.[31] For cost-conscious petitioners, these fees represent close to ten percent of the entire cost of pursuing an IPR petition to a final decision. By contrast, the filing fee for a civil suit in federal court is a mere $350.[32]

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In short, efforts to enhance patent quality should additionally include efforts to improve the overall quality of the pool of issued patents, and moreover, should draw upon all of the PTO’s powers, including the power to set fees, to meet its quality-enhancing goals. By increasing the frequency and size of maintenance fee payments, the PTO can significantly mitigate the social costs that low-quality patents impose by decreasing the supply of low-quality patents available for use in abusive suits, as well as increasing the costs borne by those entities likely to abuse them. In addition, reducing the filing and institution fees for those bringing post-issue challenges—or, at a minimum, creating a fee discount for small and micro entities—will make those procedures more affordable to the parties that would benefit from them the most. If these steps are taken, fewer low-quality patents will issue in the future and existing patents of low-quality will expire or be challenged with greater frequency. With fees set at the right levels, today’s patent quality problems might just become a thing of the past.

1. Assistant Professor of Law and Co-Director of the High Tech Law Institute, Santa Clara University. This Essay is based on comments I submitted May 6, 2015 in response to the U.S. Patent and Trademark Office’s (PTO) Request for Comments on Enhancing Patent Quality, 80 Fed. Reg. 6475 (proposed Feb. 5, 2015), *available at* https://www.federalregister.gov/articles/2015/02/05/2015-02398/request-for-comments-on-enhancing-patent-quality. Those comments, which discuss the topics below in greater detail,

are available online at http://www.uspto.gov/patent/laws-and-regulations/comments-public/comments-request-comments-enhancing-patent-quality.

2. The PTO's current slate of "New Quality Proposals" is available online at https://www.federalregister.gov/articles/2015/02/05/2015-02398/request-for-comments-on-enhancing-patent-quality.
3. *See* Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 Mich. L. Rev. 101 (2005).
4. *See* Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 Calif. L. Rev. 1, 43 (2001); Note, *Estopping the Madness at the PTO: Improving Patent Administration Through Prosecution History Estoppel*, 116 Harv. L. Rev. 2164, 2171 (2003).
5. *See* Dennis Crouch, How Many U.S. Patents Are In-Force?, Patently-O (May 4, 2012, 10:19 AM), http://www.patentlyo.com/patent/2012/05/how-many-us-patents-are-in-force.html.
6. For example, in recent years the PTO has issued tens of thousands of software patents annually. *See* Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, NYU Ann. Surv. Am. L. 289 (2012) (estimating that, circa 2012, about 40,000 software patents issued annually); James Bessen & Robert M. Hunt, *An Empirical Look at Software Patents*, 16 J. Econ. & Mgmt. Strategy 157 (2007) (estimating that, circa 2004, roughly 20,000 software patents issued annually). Many of the claims in these patents now cover unpatentable abstract ideas under *Alice Corp. Pty. Ltd. v. CLS Bank Intern.*, 134 S. Ct. 2347 (2014).
7. See Leahy-Smith America Invents Act, Pub. L. No. 112-29, § 10, 125 Stat. 284, 316-17 (2011), *available at* http://www.bitlaw.com/source/America-Invents-Act/10.html. As previously interpreted by the PTO, this provision gives the agency "flexibility to set individual fees in a way that furthers key policy considerations." Setting and Adjusting Patent Fees, 77 Fed. Reg. 55,028 (proposed Sept. 6, 2012).
8. Brian J. Love, *An Empirical Study of Patent Litigation Timing: Could A Patent Term Reduction Decimate Trolls Without Harming Innovators?*, 161 U. Pa. L. Rev. 1309 (2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1917709.
9. For a general discussion of why NPEs can impose asymmetric costs in patent litigation and how this often leads to nuisance value settlements, see *Informational Hearing on Patent Assertion Entities before the California Assembly Select Committee on High Technology* (Oct 30, 2013) (statement of Brian J. Love, Assistant Professor of Law, Santa Clara University), *available at* http://papers.ssrn.com/sol3/papers.cfm.?abstract_id=2347138.
10. Love, *An Empirical Study of Patent Litigation Timing*, *supra* note 7, at 1340.
11. *Id*.
12. *Fee Schedule*, U.S. Pat. and Trademark Off., http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm.

13. Love, *An Empirical Study of Patent Litigation Timing*, *supra* note 7, at 1333 ("Patents do not reach acquisition firms until about 9.5 years after issue [on average], and these firms wait 2.4 additional years on average before filing suit.").
14. *See* James E. Bessen & Brian J. Love, *Make the Patent "Polluters" Pay: Using Pigovian Fees to Curb Patent Abuse*, 4 Calif. L. Rev. Circuit 84, 89 (2013), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2277692 (calculating several hypothetical fee structures, including a structure in which fees increase geometrically beginning in the twelfth year after issue).
15. *Id*. at 87–88.
16. *See* RPX, 2014 NPE Cost Report at 2, http://www.rpxcorp.com/wp-content/uploads/sites/2/2015/05/RPX-2014-NPE-Cost-Report-Zfinal.pdf (estimating that "companies in 2014 spent more than $12 billion in legal fees, settlements, and judgments to resolve NPE patent disputes . . . . a major portion of [which went] to the unnecessary and significant expense of litigating patents as a precursor to a resolution"); James Bessen & Michael J. Meurer, *The Direct Costs from NPE Disputes*, 99 Cornell L. Rev. 387 (2014) (estimating that NPE suits resulted in $29 billion in direct costs to accused infringers in 2011, about 5% of which was transferred back to inventors from whom asserted patents were acquired and another 15% of which was used to fund in-house invention programs carried out by a small number of NPEs). Both estimates exclude other sources of deadweight loss, such as defendants' indirect costs from NPE suits (like diversion of resources and delays in new products), as well as all direct and indirect costs attributable to patent disputes between product-producing companies.
17. In its simplest form, a "Pigovian" patent fee structure would dictate that if the roughly two million patents presently in force impose a social cost of well over $2 billion a year, then patent maintenance fees should, on average, cost well over $1,000 per year of protection.
18. *See* Bessen & Love, *supra* note 13, at 89 (calculating several "Pigovian" fee schedules using an estimated social cost of $23 billion per year). It presently costs roughly as much to maintain widespread patent protection in Europe, a region that remains popular with inventors. *See* Gaétan de Rassenfosse & Bruno van Pottelsberghe de la Potterie,*The Role of Fees in Patent Systems: Theory and Evidence*, 27 J. Econ. Surveys 696, 716 (2013), *available at* http://onlinelibrary.wiley.com/doi/10.1111/j.1467-6419.2011.00712.x/pdf.
19. Collectively, the three maintenance fee payments required today total $12,600 for a large entity. *Fee Schedule*, *supra* note 11. Prorated over an average term of protection of seventeen years, those fees come to an annual average of just over $740 per year.
20. *See* de Rassenfosse & van Pottelsberghe de la Potterie, *supra* note 13 at 699–701.

21. Renew A Patent, Intell. Prop. Off. (U.K.), https://www.gov.uk/renew-patent; German Patent & Trademark Office, PCT Applicant's Guide 5 (2014), *available at* http://www.wipo.int/pct/guide/en/gdvol2/annexes/de.pdf; Schedule of Fees, Japan Pat. Off., http://www.jpo.go.jp/tetuzuki_e/ryoukin_e/ryokine.htm; Canadian Intellectual Prop. Off., Manual of Patent Office Practice § 24.02.01 (last updated 2014), *available at* http://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/vwapj/rpbb-mopop-eng.pdf.
22. *See* Christian Helmers et al., *Is There a Patent Troll Problem in the U.K.?*, 24 Fordham Intell. Prop. Media & Ent. L.J. 509, 526 (2014) (finding that, between 2000 and 2010, NPEs filed just 11% of all patent suits in the U.K.). Compared to the U.S., there are fewer patent disputes (per patent) in most European nations, and European patent disputes are cheaper than their U.S. counterparts. *See* Stuart J. H. Graham & Nicolas van Zeebroeck, *Comparing Patent Litigation Across Europe: A First Look*, 17 Stan. Tech. L. Rev. 655 (2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1924124.
23. *See* de Rassenfosse & van Pottelsberghe de la Potterie, *supra* note 17 at 699–701.
24. *Id*.
25. See Brian J. Love & Shawn Ambwani, Inter Partes *Review: An Early Look at the Numbers*, 81 U. Chi. L. Rev. Dialogue 93 (2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2512519.
26. For example, a patent asserted widely by Data Treasury in a litigation campaign that netted over $350 million in settlements was recently invalidated by the Patent Trial and Appeal Board. Matthew Bultman, *DataTreasury Patents Nixed By PTAB In AIA Review*, Law360 (April 29, 2015), http://www.law360.com/articles/649511/datatreasury-patents-nixed-by-ptab-in-aia-review.
27. Since 2011, many patentees, including Innovatio IP Ventures, MPHJ, and ArrivalStar, collectively sued hundreds of small businesses outside the tech industry—including restaurants, hotels, and trucking companies—and threatened to sue tens of thousands more, while generally offering to settle for less than the cost of mounting the slightest defense. *See, e.g*, Brian J. Love, *Inter Partes Review as a Shield for Technology Purchasers: A Response to Gaia Bernstein's* The Rise of the End-User in Patent Litigation, 56 B.C. L. Rev. 1075, 1075–76 (2015), *available at* https://perma.cc/Z38A-GZCB.
28. *Id*.
29. *Id*. at 1082.
30. *Id*. at 1086.
31. *Fee Schedule*, *supra* note 11 (listing a $9000 filing fee for IPR and a $14,000 "post-institution fee," as well as $200 and $400 per claim "excess" claim fees at each respective stage). Post Grant Review and Covered Business Method Review are even more expensive. *Id*. (listing a

$12,000 filing fee PGR/CBM and a $18,000 “post-institution fee,” as well as $250 and $550 per claim “excess” claim fees at each respective stage).

32. 28 U.S.C. § 1914.