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Requests for Comments on Enhancing Patent Quality

Brian Love

Santa Clara University School of Law, blove@scu.edu

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Brian J. Love
Assistant Professor of Law
Co-Director, High Tech Law Institute
Santa Clara University
500 El Camino Real
Santa Clara, CA 95053

May 6, 2015

The Hon. Michelle K. Lee
Under Secretary of Commerce
Director, U.S. Patent and Trademark Office

Re: Requests for Comments on Enhancing Patent Quality

Dear Director Lee:

I write to you today in response to the U.S. Patent and Trademark Office's (PTO) Request for Comments on Enhancing Patent Quality, published February 5, 2015.¹ My comment proceeds in two parts. First, I share two general observations about the PTO's current slate of New Quality Proposals:² specifically, it fails to include any reforms that apply post-issue or any reforms that exercise the PTO's fee-setting authority. Second, building on these observations and two recent empirical studies of mine, I outline two proposals that I urge the PTO to consider: specifically, an increase in maintenance fees and a decrease in fees for post-issue administrative challenges.

I. Current Slate of Proposals Ignore Post-Issue Solutions and Fee-Setting Authority

The PTO should broaden, in at least two respects, the scope of potential changes that are presently on the table. First, I urge the PTO to consider quality-enhancing reforms that apply to issued patents, not simply those that impact applications under examination. At present, the PTO's New Quality Proposals all involve modifications to examination procedures. Any set of reforms that focuses exclusively on examination is incomplete. For a number of practical reasons, problematic patents will continue to issue for the foreseeable future, regardless of current efforts to improve the prosecution process.³ Moreover, reforms that focus exclusively on prosecution ignore the millions of U.S. patents presently in force,⁴ the vast majority of which

¹ 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>.

²*Id.*

³ For example, current rules for claim construction permit the meaning of claim language to expand over time to cover after-arising technology that was unforeseeable at the time of examination. See Mark A. Lemley, *The Changing Meaning of Patent Claim Terms*, 104 MICH. L. REV. 101 (2005). Also, it is especially difficult, if not impossible, for examiners to locate prior art in nascent, rapidly-evolving fields that lack a comprehensively indexed technical literature. 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).

⁴ At present there are well over two million U.S. patents in force. 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> (estimating that there were about 2.1 million patents in force in May 2012).

issued during previous eras when examination and patentability standards were far more lax.⁵ The PTO's efforts to improve patent quality should not end with a notice of allowance, but rather should extend throughout the term of patent protection.

Second, I urge the PTO to consider using its fee schedule as a tool for improving patent quality. When selecting the current list of New Quality Proposals, the PTO failed to draw upon its full range of powers, which now includes fee-setting authority.⁶ Though PTO fees have historically been overlooked as a tool for effecting policy goals, fee-setting authority may well be the most powerful policy lever at the PTO's disposal. Because a patent's value depends in large measure on its quality, owners of low-quality patents are the most sensitive to fluctuations in patent office fees and, thus, the most likely to allow their existing patents to expire and reduce their future filings in response to a fee increase. Accelerated expiration of low-value patents and a marginal drop in low-value applications will improve overall patent quality in two ways. It will do so directly by reducing the quantity of questionable patents and applications. It will also do so indirectly by increasing the quality of legitimate patents that issue in the future. This is because a decrease in the number of patent applications frees up PTO resources to examine with greater care the smaller number of applications that are filed. In its efforts to improve patent quality, the PTO can, and should, also exercise its power to adjust fees.

II. Specific Reform Proposals

Building on these general observations, I ask the PTO to consider two specific proposals that leverage PTO fees to enhance the quality of issued patents: (1) an increase in maintenance fees to hasten the expiration of low-quality patents, and (2) a decrease in 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.

A. Increase Maintenance Fees

Low-quality patents impose costs on society principally when they are asserted for purposes of collecting nuisance value settlements, 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),⁷ the subset of patentees most

⁵For 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).

⁶ *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).

⁷ 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.

able to leverage the high cost of patent litigation to induce nuisance-value settlements.⁸ 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.⁹ This 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.¹⁰ 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,¹¹ 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.¹² As a result, the cost of renewal overwhelmingly falls on legitimate innovators using the patent system as intended, rather than 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 gradually 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.¹³

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 full social costs of their purchasers.¹⁴ 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.¹⁵ As a result, the average annual cost of maintaining one of the roughly two

⁸ 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.

⁹ Love, *An Empirical Study of Patent Litigation Timing*, *supra* note 7, at 1340.

¹⁰ *Id.*

¹¹ *Fee Schedule*, U.S. Pat. and Trademark Off., <http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm>.

¹² 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.").

¹³ 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).

¹⁴ *Id.* at 87-88. Other commentators have also argued that renewal fees should be used to ensure that patentees maintain their patent rights for a socially optimal period of time. See generally Suzanne Scotchmer, *On the Optimality of the Patent Renewal System*, 30 RAND J. ECON. 181 (1999); Francesca Cornelli & Mark Schankerman, *Patent Renewals and R&D Incentives*, 30 RAND J. ECON. 197 (1999).

¹⁵ 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

million patents presently in force should at a minimum exceed \$1,000 per year,¹⁶ and perhaps should reach \$10,000 per year or more.¹⁷ Today, even large entities are charged fees that, on average, amount to much less—under \$750 per year.¹⁸

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 in those required today in other parts of the world. Today's patent fees are relatively low, both internationally and historically.¹⁹ Many countries, including the United Kingdom, Germany, Japan, and Canada, already charge annual maintenance fees after the first few years of patent protection.²⁰ Perhaps not coincidentally, these jurisdictions also experience a much lower incidence of abusive patent enforcement.²¹ Also, relative to GDP per capita, U.S. patent fees are near historical all-time lows.²² Measured this way, fees today are about one-tenth as expensive as they were in 1800.²³

In short, 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

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), not to mention all direct and indirect costs attributable to patent disputes between product-producing companies.

¹⁶ 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.

¹⁷ 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>.

¹⁸ Collectively, the three maintenance fee payments required today total \$12,600 for a large entity. *Fee Schedule*, U.S. Pat. And Trademark Off., <http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm>. Prorated over an average term of protection of seventeen years, those fees come to an annual average of just over \$740 per year.

¹⁹ See de Rassenfosse & Bruno van Pottelsberghe de la Potterie, *supra*, at 699-701.

²⁰ Renew A Patent, Intell. Prop. Off. (U.K.), <https://www.gov.uk/renew-patent> (explaining that in the UK patents must be renewed "on the fourth anniversary of when you filed for it [and] . . . then [again] . . . every year near the 'due date'"); German Patent & Trademark Office, PCT Applicant's Guide 5 (2014), available at <http://www.wipo.int/pct/guide/en/gdvol2/annexes/de.pdf> (explaining that fees are "payable for the third and each subsequent year following the international filing date"); Schedule of Fees, Japan Pat. Off., http://www.jpo.go.jp/tetuzuki_e/ryoukin_e/ryokine.htm (showing a schedule of annual renewal fees); 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> ("In order to maintain a patent application in effect, an applicant must pay maintenance fees for each one-year period from the second anniversary of the filing date of the application.").

²¹ 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.

²² See de Rassenfosse & Bruno van Pottelsberghe de la Potterie, *supra*, at 699-701.

²³ *Id.*

low-quality patents available for use in abusive suits, as well as increasing the costs borne by those entities likely to abuse them.

B. Reduce Fees for Post-Issue Administrative Review

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.²⁴ Many of these patents earned millions of dollars in unwarranted settlements before being eliminated.²⁵

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 technology²⁶—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.²⁷ Though over a third of patent suits in recent years accused technology purchasers of infringement, purchasers represent less than 7% of IPR petitioners.²⁸ Similarly, while SMEs were targeted in about 30% of patent suits during the same period, just 21% of IPRs are initiated by SMEs.²⁹

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. Though there may not be much the PTO can do to reduce cost of legal fees for IPR, 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.³⁰ For cost-conscious petitioners, these fees represents close to ten percent of the entire cost of pursuing an IPR

²⁴ 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.

²⁵ 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>.

²⁶ 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. at *1-2 (forthcoming 2015), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2576919 (summarizing this phenomenon and collecting citations).

²⁷ *Id.*

²⁸ *Id.* at *7.

²⁹ *Id.* at *11.

³⁰ *Fee Schedule*, U.S. Pat. and Trademark Off., <http://www.uspto.gov/web/offices/ac/qs/ope/fee010114.htm> (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).

petition to a final decision. By contrast, the filing fee for a civil suit in federal court is a mere \$350.³¹

Decreasing the filing and institution fees for petitioners—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. As a result, more low-quality patents will be eliminated and, in turn, fewer nuisance suits will be filed in the future.

* * *

I urge the PTO to take a broader view of what its present patent quality initiative can accomplish. Efforts to enhance patent quality should additionally include efforts to improve the overall quality of the pool of issued patents. Moreover, the PTO should draw upon all its powers, including the power to set fees, to meet its quality-enhancing goals. The benefits of doing so promise to be immense.

Sincerely,

A handwritten signature in blue ink, appearing to read "Brian J. Fu". The signature is written in a cursive, flowing style.

³¹ 28 U.S.C. § 1914.