

## CURRENT ISSUES IN PATENT LAW AND POLICY

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Patent law and policy have received a surprising amount of attention from courts and policymakers in recent years.<sup>1</sup> This attention is warranted because innovation policy is critical in determining the pace of innovation and the rate of economic growth. The reform proposals pending before Congress are motivated by widespread reports of abusive patent assertions and fears that patents sometimes stifle innovation.<sup>2</sup>

I favor most of the pending reforms and worry that our patent system, on balance, discourages innovation. But I part company from most reform proponents who focus on harms caused by the frivolous patent litigation mounted by many “non-practicing entities” (NPEs).<sup>3</sup> Instead, I want to focus on deeper flaws in the U.S. patent system that existed before NPEs became very active and that continue today.

In our book *Patent Failure*,<sup>4</sup> James Bessen and I empirically demonstrated that problems in our patent system predated the flood of NPE litigation that began around 2005.<sup>5</sup> We showed

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1. See, e.g., *Beriont v. GTE Laboratories, Inc.*, 535 F. App'x 919 (Fed. Cir. 2013); *Promega Corp. v. Life Techs. Corp.*, 674 F.3d 1352 (Fed. Cir. 2012); Steve Lohr, *With Patent Litigation Surging, Creators Turn to Washington for Help*, N.Y. TIMES (Apr. 29, 2015), [http://www.nytimes.com/2015/04/30/technology/with-patent-litigation-surging-creators-turn-to-washington-for-help.html?\\_r=0](http://www.nytimes.com/2015/04/30/technology/with-patent-litigation-surging-creators-turn-to-washington-for-help.html?_r=0) [<http://perma.cc/3W46-SFPP>].

2. See Lohr, *supra* note 1.

3. See, e.g., Adam L. Massaro, *Phased Discovery in Patent Litigation: A Powerful Tool Within the Existing Litigation Framework for Combating Actions by Non-Practicing Entities*, NAT'L L. REV. (Oct. 31, 2014), <http://www.natlawreview.com/article/phased-discovery-patent-litigation-powerful-tool-within-existing-litigation-framework> [<http://perma.cc/69JA-HR4Y>].

4. JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* (2008).

5. *Id.* at 144.

that, on average, the patent system actually *taxes* innovators in most industries (except, notably, in the chemical and pharmaceutical industries).<sup>6</sup> We attribute this innovation tax to problems of “low patent quality.”<sup>7</sup> Though, again, these problems are largely absent in the chemical and pharmaceutical industries, as the patents there are relatively high quality.<sup>8</sup>

There are three kinds of quality problems that reformers have identified. First, there are mistakes by patent examiners and courts. Second, the inventive step—the so-called non-obviousness requirement<sup>9</sup>—in our patent system is too low. This means that valid patents are granted on uninteresting and low-quality inventions.<sup>10</sup> Third—and this is my main concern—is that patents are not sufficiently “property-like.”<sup>11</sup> I will use the term “notice failure” to denote this kind of problem.

Initially, most patent-reform activity in the past decade has focused on quality problems caused by patent examination mistakes.<sup>12</sup> These reforms were well intentioned but were not significant enough to have much effect on the innovation tax. More recent reforms focus on mitigating the harm caused when low-quality patents are asserted.<sup>13</sup> Here, there has been a bit more progress. Now, we possibly have a new wave of reform coming that will address notice failure.<sup>14</sup>

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6. *Id.* at 145.

7. *Id.* at 18–19.

8. *Id.* at 145.

9. See 35 U.S.C. § 103 (2013); Gregory Mandel, *The Non-Obvious Problem: How the Indeterminate Nonobvious Standard Produces Excessive Patent Grants*, 42 U.C. DAVIS L. REV. 57, 62 (2009).

10. Mandel, *supra* note 9, at 62.

11. See, e.g., Roger Milgrim, *An Independent Invention Defense to Patent Infringement: The Academy Talking to Itself: Should Anyone Listen?*, 90 J. PAT. & TRADEMARK OFF. SOC'Y 295, 305 n.44 (2008) (analogizing patent rights to property rights in order to illustrate a patent law problem).

12. See, e.g., Sabra Chartrand, *A Bid to Overcome Patent Backlogs*, N.Y. TIMES (Sept. 23, 2002), <http://www.nytimes.com/2002/09/23/technology/23PATE.html> [<http://perma.cc/A7UE-X5NX>].

13. See, e.g., Jeff J. Roberts, *New version of Google Patents makes it easier to weed out low quality patents*, FORTUNE (July 16, 2015), <http://fortune.com/2015/07/16/new-version-of-google-patents-makes-it-easier-to-weed-out-low-quality-patents> [<http://perma.cc/WQC2-VPJ6>].

14. See generally Mark Rawls, *Fixing Notice Failure: How to Tame the Trolls and Restore Balance to the Patent System*, 5 WM. & MARY BUS. L. REV. 561 (2014).

Patent notice reform, if it comes at all, likely will come from many sources. Some of the reforms being considered in Congress will improve patent notice and make the patent system more property-like.<sup>15</sup> The U.S. Patent and Trademark Office is considering reforms to make patent ownership more transparent and patent scope more precise.<sup>16</sup> I suspect that much of the significant reform will come from the courts. I hope that scholars will influence Federal Circuit judges and clerks so that judicial lawmaking will be more sensitive to the ways in which an over-reaching patent system can impede innovation. I envision a change in thinking about patents comparable to the change in thinking about antitrust law associated with the “Chicago School” approach to antitrust.<sup>17</sup>

So, what do I mean by “notice failure”? Suppose I own the parcel of land called Whiteacre and there is a neighboring parcel owned by another called Blackacre. Suppose I want to build an office tower on Whiteacre. I hire a surveyor, look at the deeds, and talk to my lawyers. Finally, I build the office tower on Whiteacre. In a property system with good notice, I will have little trouble building the tower on Whiteacre and keeping it off of Blackacre. Notice failure, however, could lead me to accidentally build part of my tower on Blackacre. Good notice allows me to avoid such an accident. If I have reason to build partly on Blackacre, I would negotiate to purchase some of Blackacre in advance. If I want to stay entirely on Whiteacre, I can rely on surveying technology and property deeds to assure that.

As one looks through case law in real property, one hardly ever sees these sorts of disputes occurring.<sup>18</sup> That is because we

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15. See, e.g., Ashby Jones, *Patent Reform Bill Arises Again in Congress*, WALL ST. J. L. BLOG (FEB. 5, 2015, 12:42 PM), <http://blogs.wsj.com/law/2015/02/05/patent-reform-bill-arises-again-in-congress> [<http://perma.cc/PFG5-ZFQJ>].

16. Michelle K. Lee, Deputy Dir., U.S. Patent and Trademark Off., *The Benefits of Transparency Across the Intellectual Property System* (Apr. 24, 2014), available at <http://www.uspto.gov/about-us/news-updates/benefits-transparency-across-intellectual-property-system#> [<http://perma.cc/7HLW-F2LK>].

17. See generally Joshua D. Wright, *Overshot the Mark? A Simple Explanation of the Chicago School's Influence on Antitrust*, 5 COMPETITION POL'Y INT'L 1, 6–8 (2009) (explaining the “Chicago School” approach to antitrust).

18. Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1, 2 (2013).

have good notice associated with the law of land.<sup>19</sup> Notice in technology development, though, is quite different. Strangers often fail to take notice of patent rights.<sup>20</sup> They fail to license before investing in new technology, which makes them subsequently vulnerable to a lawsuit.<sup>21</sup> They also miss the opportunity to avoid infringement by designing around a patent.<sup>22</sup>

Most firms that are sued for patent infringement are inadvertent infringers.<sup>23</sup> They are not pirates. Defendants typically invest more in research and development (R&D) than plaintiffs do.<sup>24</sup> Defendants thus typically own more patents than plaintiffs do.<sup>25</sup> They are almost never shown to have copied; they are usually using technology that was developed independently.<sup>26</sup> In fact, regression analysis shows that publicly traded American firms face a risk of defending against a patent lawsuit that increases with R&D spending after controlling for the size of the defendant, the number of employees, the market capitalization of the defendant, and other relevant variables.<sup>27</sup>

The story beyond this correlation is simple: The more a firm spends on R&D, the more it innovates, and the more it innovates the greater its exposure to patent lawsuits. That is unacceptable. Innovators are exposed to patent lawsuits because of

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19. *Id.*

20. Note, *The Disclosure Function of the Patent System (Or Lack Thereof)*, 118 HARV. L. REV. 2007, 2014–26 (2005).

21. Christopher A. Cotropia & Mark A. Lemley, *Copying in Patent Law*, 87 N.C. L. REV. 1421, 1442–43 (2009).

22. See JOHN R. THOMAS, CONG. RESEARCH SERV., RL 34559, INTELLECTUAL PROPERTY IN INDUSTRIAL DESIGNS: ISSUES IN INNOVATION AND COMPETITION 15 (2010) (citing the development of new products and markets as a beneficial by-product of designing around a patent).

23. See, e.g., David Segal, *Has Patent, Will Sue: An Alert to Corporate America*, N.Y. TIMES (July 13, 2013), [http://www.nytimes.com/2013/07/14/business/has-patent-will-sue-an-alert-to-corporate-america.html?\\_r=0](http://www.nytimes.com/2013/07/14/business/has-patent-will-sue-an-alert-to-corporate-america.html?_r=0) [<http://perma.cc/SXS2-5SPC>].

24. See James Bessen, *The Evidence is in: Patent Trolls Do Hurt Innovation*, HARV. BUS. REV. (Nov. 2014), <https://hbr.org/2014/07/the-evidence-is-in-patent-trolls-do-hurt-innovation> [<http://perma.cc/R6UJ-XBAB>].

25. See *2014 Patent Litigation Report*, UNIFIEDPATENTS.COM, <http://unifiedpatents.com/2014patentlitigationreport> [<http://perma.cc/2AY5-VNDD>] (last visited Aug 4, 2014) (showing that 75.8% of NPE-related cases were filed against non-small-or-medium enterprises).

26. Cotropia & Lemley, *supra* note 21, at 1459–60.

27. James Bessen & Michael J. Meurer, *The Patent Litigation Explosion*, 45 LOY. U. CHI. L.J. 401, 419–24 (2013).

notice failure. I observe three key causes of notice failure and the patent-based innovation tax, and I will discuss them in turn.

First, there is a lack of transparency in our patent system. Innovators often cannot identify which patents may be relevant to their innovative activities and could be asserted against them.<sup>28</sup>

The patent dispute between Research In Motion (RIM) and NTP provides a good illustration.<sup>29</sup> RIM was the company that developed the BlackBerry phone (RIM has been renamed BlackBerry Ltd.).<sup>30</sup> Mike Lazaridis founded RIM and invented wireless e-mail.<sup>31</sup> Thomas J. Campana also invented wireless e-mail, as did three other sets of inventors, all at around the same time.<sup>32</sup> Campana tried and failed to commercialize his invention.<sup>33</sup> RIM learned about the NTP patents that were acquired from Campana ten years after it started development.<sup>34</sup> NTP sued RIM for patent infringement.<sup>35</sup> Under threat of injunction, RIM settled with NTP for \$612 million.<sup>36</sup>

Second, in many industries it is costly to search for patents and difficult to identify the owners. Firms facing NPE patent assertions often complain about strategic advantages gained by NPEs that assign their patents to numerous shell companies.<sup>37</sup> But transparency problems predate NPE litigation. Patent clearance searches are difficult because patent assertions often come from parties who are relative strangers to the defendant firms. Bessen and I found that from 1984 to 1999, twenty-eight percent of patent lawsuits between publicly traded American firms involved parties from different industries.<sup>38</sup> In addition, we found that in many cases the opposing parties were also

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28. See, e.g., Charles Duhigg & Steve Lohr, *The Patent, Used as a Sword*, N.Y. TIMES (Oct. 7, 2012), <http://www.nytimes.com/2012/10/08/technology/patent-wars-among-tech-giants-can-stifle-competition.html> [<http://perma.cc/8PJL-BKP6>].

29. See *NTP, Inc. v. Research In Motion, Ltd.*, 418 F.3d 1282 (Fed. Cir. 2005).

30. *Id.* at 1289.

31. Bessen & Meurer, *supra* note 4, at 47.

32. *Id.*

33. *Id.*

34. *Id.* at 49.

35. *Id.* at 47.

36. *Id.*

37. See, e.g., Brian J. Love & James C. Yoon, *Expanding Patent Law's Customer Suit Exception*, 93 B.U. L. REV. 1605, 1610 (2013).

38. Bessen & Meurer, *supra* note 27, at 433.

distant from one another in terms of the technologies that they patented.<sup>39</sup> Add to that the huge number of extant patents in some sectors of technology<sup>40</sup> and it becomes truly burdensome to read potentially relevant patents and clear rights in advance of innovation.

Third, the boundaries of patent rights are often hard to decipher. Chemical patents typically provide good boundary information.<sup>41</sup> Most chemical inventions are claimed by what they *are*<sup>42</sup>—a style of claiming that tends to provide good notice. Other inventions generally are claimed, at least in part, by what they *do*<sup>43</sup>—a style of claiming that tends to provide poor notice.

A simple example illustrates the ambiguities often found in patent claims directed more to an invention's function rather than the invention's structure: A man named Freeny invented a retail kiosk that would produce music recorded on cassette tapes.<sup>44</sup> The kiosk was connected to a pre-Internet computer with a dedicated hard line.<sup>45</sup> He obtained a patent that covered music that was transmitted over a communications line and then recorded at a retail point of sale.<sup>46</sup> The patent claim was well-written and potentially covered a broader range of technologies.<sup>47</sup> A skillful patent attorney used abstract language in the patent claim that later could be interpreted to cover sales of information products over the Internet.<sup>48</sup> Here, poor notice existed because the language in the claim was unstable. In 1980, the claim term "material object" could, for example, mean "cassette

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39. *Id.*

40. See, e.g., Christina Mulligan & Timothy B. Lee, *Scaling the Patent System*, 68 N.Y.U. ANN. SURV. AM. L. 289, 304 (2012) (estimating the number of software patents issued each year at around 40,000).

41. Peter S. Menell & Michael J. Meurer, *Notice Failure and Notice Externalities*, 5 J. LEGAL ANALYSIS 1, 36 (2013) ("Chemical patent boundaries are more easily understood and searchable because patent attorneys and inventors rely heavily on a system of chemical nomenclature . . .").

42. Bessen & Meurer, *supra* note 4, at 152.

43. See, e.g., *id.* at 204 (noting that, for one example, Samuel F. B. Morse asserted in his telegraph patent that "the essence of [the] invention [is] the use of the motive power . . .").

44. *Id.* at 22.

45. *Id.* at 199.

46. *Id.* at 67.

47. *Id.* at 8–9.

48. *Id.* at 199.

tape.”<sup>49</sup> By 2000 it could be interpreted more broadly to include hard drives.<sup>50</sup> In 1980, “point-of-sale location” probably meant “near the cash register,”<sup>51</sup> but by 2000 it could be interpreted more broadly to include “in one’s own bedroom where the personal computer is located.”<sup>52</sup>

These sources of patent notice failure combine to yield inadvertent infringement and a huge volume of patent litigation. Because of notice failure, innovators have trouble designing new technologies that avoid infringement of others’ patents or getting permission to practice the patent at an early stage of development. I think it is likely that the risk of inadvertent patent infringement from notice failure explains why American patents tend to discourage innovation by publicly traded American firms (again, with the important exception of pharmaceutical and other chemical patents).

In *Patent Failure*, Bessen and I assess the performance of the American patent system over the period from 1984 to 1999 by measuring the costs and benefits of patents to publicly traded American firms.<sup>53</sup> We measure the benefits that firms derive from the patents they own and compare these benefits to the costs imposed on the same firms by patents owned by other firms.<sup>54</sup> We find that pharmaceutical and other chemical patents deliver a net subsidy to innovative firms, but for other technologies, the aggregate cost imposed by patents owned by others exceeds the benefit from owning patents.<sup>55</sup> Recent research confirms these results continue to hold in the twenty-first century.<sup>56</sup>

I wish to emphasize that patent reform should not be driven solely by concerns about frivolous patent assertions coming from NPEs. There are more fundamental problems with our

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49. *Id.* at 9.

50. *See, e.g.*, *Interactive Gift Express, Inc. v. Compuserve Inc.*, 256 F.3d 1323, 1348 (Fed. Cir. 2001).

51. Bessen & Meurer, *supra* note 4, at 9.

52. *Interactive Gift Express*, 256 F.3d at 1334.

53. Bessen & Meurer, *supra* note 4, at 138–41.

54. *Id.*

55. *Id.* at 120–21.

56. James Bessen et al., *Trends in Private Patent Costs and Rents for Publicly-Traded United States Firms* (Bos. Univ. Sch. of Law Research Paper No. 145, 2015), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2278255](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2278255) [http://perma.cc/74JU-EVER].

patent system. Patents are not sufficiently property-like in the sense that the U.S. patent system provides poor notice regarding the existence, ownership, and scope of patent rights. Poor notice makes it hard for innovators to avoid infringement during development of a new technology, and it makes it hard to negotiate a patent license early on before an innovator gets locked into a particular design. Notice-based patent reforms should increase the transparency of the patent system, encourage patent applicants to mark the boundaries of their property rights more clearly, and mitigate harms caused by notice failure through appropriate limitations on remedies.