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## Commentary on Bessen and Meurer's Patent Failure: An Industry Perspective

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## **COMMENTARY ON BESSEN AND MEURER'S PATENT FAILURE: AN INDUSTRY PERSPECTIVE**

*Cecil D. Quillen, Jr.\**

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\* The author was a participant on the “Reactions from Industry” panel at the March 29, 2008 Symposium on Bessen and Meurer’s book *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK*, sponsored by the University of Georgia School of Law, the Department of Economics of the University of Georgia Terry College of Business, and the University of Georgia Research Foundation. The author is the former general counsel of Eastman Kodak Company where he was a senior vice president and member of the Board of Directors. He is currently a senior advisor at Cornerstone Research, an economic and financial consulting firm. The views expressed herein are the author’s, and should not be attributed to Eastman Kodak or to Cornerstone Research. The comments are largely drawn from the author’s own experience and should not be interpreted as a scholarly treatment of the subject. On the other hand, the author was employed for over thirty years in industry by an innovator company (Eastman Kodak) that was an active participant in the United States patent system and believes, rightly or wrongly, that his experiences can offer insight into the domestic patent system’s impact on innovation and innovators in the United States.

## **AUTHOR'S ADDENDUM AND ERRATA**

In Footnote 25 on page 63, add the following additional citation:

“See also *Polaroid v. Eastman Kodak*, 519 F.Supp. 381 (DC Mass 1981) holding Polaroid’s U.S. Patent No. 3,761,289 invalid for obviousness under the patentability standards prevailing at the time.”

In Footnote 109 on page 79, in the second line, change "searching" to "secondary."

## I. INTRODUCTION

The plan for this Article is to provide an overall comment regarding PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK,<sup>1</sup> then to provide topical comments for specific items that caught my eye, and, finally, to conclude with my own prescriptions for patent reforms to foster innovation. Again, I emphasize that the comments and the reform prescriptions are drawn from my own experience, are not a scholarly critique, and may well overlook important points.

## II. OVERALL COMMENT

My overall reaction to the book is that its conclusion is sound. The United States patent system is not working for most of its participants. And it is certainly not working for most innovators—those who provide products and services to American consumers, make investments, and take business risks to do so. Nor is it working for American consumers who ultimately bear the costs of the United States patent system. However, I believe Bessen and Meurer's diagnosis misses the mark to some extent. The current problems with the United States patent system cannot all be shoehorned into the imperfect notice basket. There is already clear notice of the Federal Circuit's lowered and less certain standards for patentability that result in valid patents on obvious inventions and their damages rules that result in excessive patent damages awards.<sup>2</sup> So, prescriptions to solve the notice problems, even if adopted, will not address these more serious problems or make the United States patent system an engine for innovation. At the end of my comments, I will outline my own views about needed reforms.

The great question, which is beyond the scope of the book, is the extent to which patents are necessary, if at all, for innovation. We do know that innovation depends on the *absence* of patents owned by others than the innovator that affect

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<sup>1</sup> JAMES BESSEN & MICHAEL J. MEURER, PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK (2008).

<sup>2</sup> See Cecil D. Quillen, *Innovation and the U.S. Patent System*, 1 VA. LAW & BUS. REV. 207, 210–25 (2006) (explaining major changes affecting innovation in the United States brought about by the Federal Circuit). The lowered standards for patentability imposed by the Federal Circuit may be ameliorated, at least to some extent, if the Federal Circuit and the United States Patent and Trademark Office (PTO) follow the restored higher standards for patentability prescribed by the Supreme Court in *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). It remains to be seen the extent to which that occurs. So far, however, the Supreme Court has not taken a case that addresses the unnecessary uncertainty as to patent validity imposed by Federal Circuit decisions, nor has it taken a case that addresses any of the several Federal Circuit decisions that have resulted in excessive damages awards.

the innovation, or at least the ability for the innovator to obtain licenses under such others' patents.<sup>3</sup>

But what about the innovator? To what extent, if any, is patent ownership by the innovator essential for innovation? Although that question is beyond the scope of the book, there are hints at the answer.<sup>4</sup> The authors report a study by Moser who found that only 11.1% of British and 15.3% of United States innovations exhibited at the 1851 fair at the Crystal Palace in London were patented.<sup>5</sup> They also report a 1998 survey study of European firms by Arundel and Kabla<sup>6</sup> who found that only 35.9% of product innovations by the surveyed firms and 24.8% of their process innovations were patented. The clear implication is that patents owned by the innovator were unimportant for at least the 88.9% of British innovations and the 84.7% of the United States innovations exhibited at the 1841 fair that were not patented. And for the surveyed European firms the implications are similar: patents owned by the surveyed firms were unimportant for at least the 64.1% of their product innovations and the 75.2% of their process inventions that were not patented.<sup>7</sup> This is a fertile area for more research. If in fact patents owned by innovators are only infrequently important for innovation and patents owned by others than the innovator can be impediments to innovation, then the policy suggestion is that a patent system that fosters innovation requires high standards for patentability that result in fewer marginal patents to impede innovation.

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<sup>3</sup> See Quillen, *supra* note 2, at 223–25 (discussing the “patent thicket” caused by increased patent issuance).

<sup>4</sup> The question was asked by Professor Mansfield of 100 randomly selected firms to ascertain the percentage of their inventions commercially introduced in 1981–1983 that would not have been commercialized if patent protection could not have been obtained. See Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MGMT. SCI. 173, 174 (1986). He found that patent protection was judged essential for fewer than thirty percent of commercialized inventions for all surveyed industries except for chemicals and pharmaceuticals. Patents were judged essential for only thirty percent of chemical innovations and for sixty-five percent of pharmaceutical innovations. Thus, with the exception of the pharmaceutical industry, patents owned by innovators were unimportant for seventy percent or more of their innovations. *Id.* at 175; see also Edwin Mansfield, *Patents, Innovation, and U.S. Technology Policy*, 10 APLA Q.J. 35, 39–40 (1982) (finding similar results).

<sup>5</sup> Petra Moser, *How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World Fairs*, 95 AM. ECON. REV. 1214, 1221 (2005). See also Petra Moser, *Why Don't Inventors Patent?* (Nat'l Bureau of Econ. Research, Working Paper No. 13294, 2007), available at <http://www.nber.org/papers/w13294> (finding similar data).

<sup>6</sup> Anthony Arundel & Isabelle Kabla, *What Percentage of Innovations are Patented? Empirical Estimates for European Firms*, 27 RES. POL'Y 127, 132 (1998).

<sup>7</sup> See *supra* notes 5–6 and accompanying text.

## III. TOPICAL COMMENTS

In chapter one, the book notes that patent rights and patent litigation are global matters; that important inventions are usually patented in all major markets; and that “[t]his means that patent holders can choose where to litigate.”<sup>8</sup> Patent holders do not have such unfettered choice. They can litigate only in countries where an alleged infringement has occurred.<sup>9</sup> Nonetheless, the authors’ conclusion that the United States is preferred by patent holders as a forum for patent infringement litigation is probably correct given the size of United States markets and the fact that standards for patentability in the United States are lower than those in other major industrialized countries.<sup>10</sup> The lowered standards for patentability in the United States in comparison to other industrialized nations means that patents which are invalid or never would have been granted elsewhere may well be valid and enforceable in the United States. This could explain why patent owners should prefer the United States as a friendly forum for attempting to enforce their patents.

In the context of what Bessen and Meurer call “inadvertent infringement,” the authors state that “[p]otential innovators consider not only the reward that they might reap from owning patents, but also the risk of being sued for infringing upon the patents of others.”<sup>11</sup> If I understand this statement correctly, and I am not sure that I do, it is not consistent with my own experience. At Kodak we took great pains, not always successful, to avoid infringing upon valid patents of others. So we certainly were cognizant of the risk that our innovations might infringe upon patents of others, and that affected our decision as to whether to

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<sup>8</sup> BESSEN & MEURER, *supra* note 1, at 5.

<sup>9</sup> See RESTATEMENT (THIRD) OF THE FOREIGN RELATIONS LAW OF THE UNITED STATES § 415 cmt. i (1987) (explaining territoriality of patents).

<sup>10</sup> See, e.g., Paul H. Jensen et al., *Disparity in International Patent Office Decisions*, 15 FED. CIR. B.J. 679, 689–90 (2006) (finding that only 72.5% of European Patent Office (EPO) applications and 44.5% of Japanese Patent Office (JPO) applications corresponding to a selection of about 70,000 United States patents were granted by the EPO and JPO, respectively); Stuart J.H. Graham & Dietmar Harhoff, *Would the U.S. Benefit from Patent Post-grant Reviews? Evidence from a ‘Twinning’ Study*, (Ctr. for Int’l Bus. Educ. and Res. (CIBER)), Ga. Inst. of Tech., Working Paper No. 2005/013-05-06, 2005), available at <http://www.ciber.gatech.edu/workingpaper/2005/013-05-06.pdf> (finding that over thirty percent of litigated United States patents and forty percent of non-litigated U.S. patents are not awarded patent protection in Europe); ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT PATENTS AND INNOVATION: TRENDS AND POLICY CHALLENGES 13 (2004), available at <http://www.oecd.org/dataoecd/48/12/24508541.pdf> (finding that grant rates at the EPO for patent applications with United States priorities were about thirty percent lower than in the United States).

<sup>11</sup> BESSEN & MEURER, *supra* note 1, at 9.

go forward with an innovation.<sup>12</sup> But, I do not recall a single instance from my thirty years at Kodak in which we chose not to go forward with an innovation because it was not patented by Kodak. The potential reward we might reap from owning patents on our innovations was irrelevant to the decision of whether or not to commercialize the innovation. Rather, that decision depended on the robustness of the proposed innovation and whether it was clear of the patents of others, not whether it was patented by Kodak. I suspect that is true of most other companies whose business success depends on innovation.

Somewhat inconsistent with the authors' statement that potential innovators consider "the risk of being sued for infringing upon the patents of others"<sup>13</sup> is their later statement that "[t]here is abundant evidence that many technology firms . . . invest little in patent search and clearance."<sup>14</sup> I do not know how one can consider the risk of being sued for infringing upon the patents of others without investing in patent search and clearance. In support of their statement that many technology firms invest little in patent search and clearance, the authors cite an Intellectual Property Owners survey in which the majority of those surveyed disagreed with the statement: "We always do a patent search before initiating any R&D [research and development] or product development effort."<sup>15</sup> The question confuses apples and oranges, and a negative answer is appropriate.

A patent search for clearance purposes prior to undertaking a R&D effort is simply not possible. One does not have a clear idea of where the research might lead, so a clearance search at that stage would be impossible. A state of the art search might be appropriate, but not a clearance search. And even in the case of a product (or process) development effort, a clearance search before the effort is commenced is probably premature. A clearance search has to await definition of the product (or process). Nonetheless, I think their conclusion is true for many industries; especially in semiconductors, computers, and software, where the complexity of the products and the number of patents and their vagueness make the effort difficult to the point of impossibility. These industries simply wait for patent problems to appear and then deal with them at the time. Or, they accumulate large numbers of patents and enter into bilateral field of use cross

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<sup>12</sup> Recall that innovation, the commercialization of new products and processes, depends on the absence of patents owned by others that affect the proposed innovation, or at least the ability to obtain licenses under such others' patents. See *supra* Part II of this Article.

<sup>13</sup> BESSEN & MEURER, *supra* note 1, at 9.

<sup>14</sup> *Id.* at 70.

<sup>15</sup> *Id.* (citing Iain Cockburn & Rebecca Henderson, *Survey Results from the 2003 Intellectual Property Owners Association Survey on Strategic Management of Intellectual Property* (2003), available at <http://www.ipo.org/articles>).

license agreements with their competitors that effectively abolish the patent system between the parties to the agreements.

Additionally, there is the statement that “chemical and pharmaceutical firms earn far more from their patents than they lose to litigation.”<sup>16</sup> Throughout the book, chemical and pharmaceutical firms are frequently lumped together. That is a bit misleading because my experience suggests that chemical and pharmaceutical firms are quite different with respect to patents. For example, as noted above, I believe that in most industries, including chemicals, the ownership of patents by innovators is largely irrelevant to their commercialization decisions.<sup>17</sup> But I doubt that is the case for the pharmaceutical industry, and I suspect that work on many promising medications has been discontinued because of the absence of available patent protection.<sup>18</sup> This may be a data problem in which the two are lumped together in the available data and not a failure on the part of the authors. But I would hope that in the future scholars in their analyses would not indulge this assumption and would instead make a serious effort to separate the two.

Furthermore, I hope scholars will try to separate the effects of “data exclusivity” and the patent monopoly on pharmaceutical innovation.<sup>19</sup> Even if one accepts that a monopoly subsidy is important for pharmaceutical innovation, we should have some understanding of the relative importance of the two. For example, if data exclusivity provides all of the monopoly incentive needed to induce pharmaceutical innovation, then higher standards for patentability, which are decidedly in the interest of other innovators, will not diminish pharmaceutical innovation. It might even lead to the commercialization of some of those promising medications that may have been dropped because of the absence of available patent protection.

In chapter two, there is the statement: “A government agency, the Patent and Trademark Office (PTO) must examine patent applications and will grant a patent *only* if an invention is new, useful, non-obvious, and falls into one of the appropriate subject-matter categories.”<sup>20</sup> This is certainly an aspirational statement for what the PTO should do, but it does not accord with the reality of what the PTO actually does. Prior to the advent of the Federal Circuit, when the

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<sup>16</sup> *Id.* at 16.

<sup>17</sup> Recall Professor Mansfield’s finding that patent ownership by the innovator was unimportant for seventy percent of chemical innovations. *See supra* note 4.

<sup>18</sup> Professor Mansfield found that patents were important for sixty-five percent of pharmaceutical innovations. *Id.*

<sup>19</sup> Data exclusivity for pharmaceutical innovations commercialized pursuant to an approved new drug application is provided by 21 U.S.C. § 355(c)(3)(E)(ii)–(iii) (West Supp. 2008).

<sup>20</sup> BESSEN & MEURER, *supra* note 1, at 32 (emphasis added).



PTO was subject to the judicial supervision of the Court of Customs and Patent Appeals (one of the predecessor courts of the Federal Circuit), about two-thirds of litigated patents for which there were appellate court validity decisions were ruled invalid (i.e., for those patents, two-thirds of them did not conform to applicable legal standards and should never have been granted by the PTO).<sup>21</sup> Even today under the Federal Circuit's lowered standards for patentability, a significant portion of litigated patents are ruled invalid and thus should never have been granted by the PTO.<sup>22</sup>

Chapter three introduces what the authors characterize as "inadvertent infringement" which, at least with regard to their discussion of *Polaroid Corp. v. Eastman Kodak Co.*,<sup>23</sup> stretches the term "inadvertent" beyond any commonly understood meaning. The authors attribute the outcome of the *Polaroid* liability case (Kodak lost) to the breakdown of the "patent notice function" which, for Kodak, the authors described as the inability of a technology investor to "unambiguously determine the scope and validity of a set of patents."<sup>24</sup>

This was not the reason at all. The "scope and validity" of the *Polaroid* patents under the legal standards that existed in 1976 when Kodak's instant photography products were introduced were easily (and unambiguously) ascertained.<sup>25</sup> No one knew at the time that the Federal Circuit would be created in 1982, or that it would ignore long-standing law and immediately and drastically lower the standards for patentability, judging decisions made in 1976 and earlier by entirely different standards.<sup>26</sup>

<sup>21</sup> GLORIA K. KOENIG, PATENT INVALIDITY: A STATISTICAL AND SUBSTANTIVE ANALYSIS 4–23 (1980).

<sup>22</sup> In a 1998 study of the 299 patents litigated to final validity decisions in 239 Federal Circuit and District Court decisions from early 1989 through 1996, Allison and Lemley found that forty-six percent were ruled invalid. John R. Allison & Mark A. Lemley, *Empirical Evidence and the Validity of Litigation Patents*, 26 AIPLA Q.J. 185, 205 (1998).

<sup>23</sup> *Polaroid Corp. v. Eastman Kodak Co.*, 641 F. Supp. 828 (D. Mass. 1985) (deciding issues of liability), *aff'd*, 789 F.2d 1556 (Fed. Cir. 1986), 16 U.S.P.Q.2d (BNA) 1481 (D. Mass. 1990) (deciding issues of damages), *amended by* 17 U.S.P.Q.2d (BNA) 1711 (D. Mass. 1991).

<sup>24</sup> BESSEN & MEURER, *supra* note 1, at 51. The authors also confused the sequence of events in the *Polaroid* litigation. They state that Kodak "paid Polaroid about \$900 million and subsequently exited the instant photography market." *Id.* at 48. It was just the other way around. Kodak left the instant photography business in 1986 in compliance with the injunction that became effective following the Federal Circuit argument of Kodak's appeal of the liability decision. *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1534 (D. Mass. 1990). The damages settlement for the \$873 million judgment plus post-judgment interest was paid five years later in 1991. *Polaroid Corp. v. Eastman Kodak Co.*, 17 U.S.P.Q.2d (BNA) 1711, 1714 (D. Mass. 1991).

<sup>25</sup> For the state of the law at the time, see generally *Graham v. John Deere Co.*, 383 U.S. 1 (1966); *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969); *Sakraida v. Ag Pro, Inc.*, 425 U.S. 273 (1976).

<sup>26</sup> Frederic M. Scherer, *The Political Economy of Patent Policy Reform in the United States* (Kennedy

The Hruska Commission Report delivered in 1975 emphatically recommended against a specialist patent appeals court.<sup>27</sup> Kodak's instant photography products were introduced a year later in April 1976, contemporaneous with the Supreme Court's decision in *Sakraida v. Ag Pro*.<sup>28</sup> Kodak and its legal advisers took great comfort in the Supreme Court's reaffirmation in *Sakraida* of the standards for patentability on which Kodak and its advisers had relied in making judgments about the Polaroid patents, standards that at the time had been consistently applied in the United States for about 130 years.<sup>29</sup> And no one at Kodak or elsewhere expected Congress to ignore the Hruska Report and create a specialist patent appeals court that would ignore over a century of legal precedent when it began its work.

When the Federal Circuit came into existence in 1982, notwithstanding assurances to the contrary and without acknowledging it had done so, the Court almost immediately lowered the standards for patentability.<sup>30</sup> By 1985, when the district court finally decided *Polaroid*, the Federal Circuit had made it abundantly clear that the best way for district court judges to avoid reversal and remand in patent cases was to find patents valid and infringed.<sup>31</sup> Unfortunately for Kodak, the Supreme Court did not get around to attempting to reinstate the prior law until 2007, twenty-two years after the liability decision in *Polaroid*.<sup>32</sup>

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Sch. of Gov't, Working Paper No. RWP07-042), available at <http://ssrn.com/abstract=963136>.

<sup>27</sup> COMM'N ON REVISION OF THE FED. COURT APPELLATE SYS. STRUCTURE AND INTERNAL PROCEDURES: RECOMMENDATIONS FOR CHANGE, 67 F.R.D. 195 (1975) [hereinafter HRUSKA COMMISSION REPORT]. This Commission is frequently referred to as the Hruska Commission for Senator Roman Hruska, who chaired the Commission, and the report is frequently referred to as the Hruska Commission Report.

<sup>28</sup> See *Sakraida v. Ag Pro*, 425 U.S. 273 (1976) (reversing the Fifth Circuit and holding patent invalid for obviousness).

<sup>29</sup> *Graham*, 383 U.S. at 3–4. In *Graham* the Court concluded that 35 U.S.C. § 103, enacted in 1952 and establishing nonobviousness as a condition for patentability, was intended as merely a codification of judicial precedents embracing the condition for patentability set out by the Court in 1851 in *Hotchkiss v. Greenwood*, 52 U.S. 248 (1850) and consistently followed since then. As of 1982, the year the Federal Circuit came into existence, that condition for patentability had prevailed in the United States for 131 years (1851–1982).

<sup>30</sup> See Scherer, *supra* note 26, at 26–27 (discussing dramatic changes to Federal Circuit patent law despite assurances to the contrary).

<sup>31</sup> The impact of the Federal Circuit on district court decisions is analyzed in Matthew D. Henry & John L. Turner, *The Court of Appeals for the Federal Circuit's Impact on Patent Litigation*, 35 J. LEGAL STUD. 85 (2006). Figure 1 of this Article illustrates the dramatic changes that immediately followed establishment of the Federal Circuit. *Id.* at 108. The Federal Circuit opinion affirming the district court in *Polaroid* did not mention *Sakraida*.

<sup>32</sup> See *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1745–46 (2007) (holding that patent was invalid as obvious).

Kodak's conduct does not really fit into the authors' "inadvertent infringement" box. There was nothing "inadvertent" about Kodak's conduct. The results were certainly unanticipated and unintended, but they were not a result of inadvertence or lack of care.<sup>33</sup>

Chapter four discusses historical evidence concerning the role of patents in the industrial revolution in Britain.<sup>34</sup> The discussion is at best ambiguous. We know that the industrial revolution occurred to the eventual benefit of us all. But the scholarship discussed by the authors regarding the role of patents in the industrial revolution is equivocal, and at least some of it may suggest that patents contributed little or nothing to the industrial revolution. It also seems to suggest that the industrial revolution may have occurred despite—rather than because of—the British patent system as it existed at the time.<sup>35</sup>

In chapter five the authors posit two methodologies for estimating the value of patents to their owners. To their credit, they distinguish between the value of inventions and the value of patents.<sup>36</sup> The value of patents arises from the ability to exclude others from practicing the patented invention which, even in the absence of a complete monopoly, may enable the patentee or its licensees to earn enhanced profits.<sup>37</sup> However, the authors do not note that the ability to charge a higher price and thereby garner enhanced profits depends, at least in the case of patented products, on the patent monopolist's ability to restrict the quantity of the patented goods supplied to the market. Thus, in such cases, consumers get less and pay more, which is the price consumers pay for whatever value they may derive from the patent system.

The first of their valuation methodologies uses United States patent renewal data to estimate patent value for United States patents.<sup>38</sup> The authors also report substantial work by others who have employed the same methodology to estimate patent values for non-domestic patents.<sup>39</sup> I have two concerns about this methodology that should be noted.<sup>40</sup> The first is that renewed patents which are

<sup>33</sup> Judge Mazzone, in his decision on Polaroid's damages claim, characterized Kodak's patent clearance process with respect to Polaroid's patents as a "model for what the law requires." *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1538 (D. Mass. 1990).

<sup>34</sup> BESSEN & MEURER, *supra* note 1, at 77–79.

<sup>35</sup> *See id.* at 77 (discussing Mokyr's skepticism about the significance of patents for the British Industrial Revolution).

<sup>36</sup> *Id.* at 98, 106–09.

<sup>37</sup> *Id.* at 97.

<sup>38</sup> *Id.* at 99.

<sup>39</sup> *Id.* at 101–02.

<sup>40</sup> My concerns are based on my layman's understanding of the methodology, not a critique of the complex econometric calculations. Detailed analyses and calculations are set forth in Bessen's working paper, James E. Bessen, *The Value of U.S. Patents by Owner and Patent Characteristics* (B.U.

perhaps worth millions of dollars apparently are valued only at their renewal cost, the same as those that were worth only the renewal cost. Although I suspect there are not very many patents that are worth millions, the methodology may understate patent values to the extent there are patents with such values.

The other concern, which tends in the other direction, is that the accuracy of this method, whether applied to domestic patents or to foreign patents, depends heavily on the quality of the renewal decisions that underlie the analysis. My suspicion, based on experience from long, long ago, is that such decisions are frequently of low quality and often result in the renewal of many patents that are in fact worthless. When I was a young staff assistant for licensing in Kodak's chemicals division, my boss at the time, our manager of licensing, became concerned that our foreign filing and renewal expenses were out of control, perhaps because they ended up on his budget. The decisions at the time were typically made by the patent attorneys who had prepared the applications, frequently in consultation with the inventors, and mostly based on their collective judgment of how "good" the inventions were. Not surprisingly, neither the inventors nor the attorneys who had filed the applications ever thought their work was less than good. Good inventions were typically filed and renewed in five or more countries in addition to the United States, and really good inventions were filed in a dozen countries or more and invariably ended up being renewed.

My boss established a foreign filing review group that included himself, the division director of the research laboratories division where the invention originated, a senior manager from our international business group, and the manager for the patent staff that had filed the application. The review group met monthly to make foreign filing and foreign renewal decisions. The questions they asked of themselves were whether we would use or sell the invention abroad, or whether our foreign competitors might use the invention abroad to compete with us, and, if so, in which countries? They also asked whether there was any realistic possibility that the invention could be licensed to others abroad for money. Whether the invention was good or not was irrelevant. The result was that our foreign filing and renewal expenses were reduced by around fifty percent. If our experience is typical, estimates of patent value based on renewal data are likely inflated, perhaps by as much as fifty percent as well.

The other methodology depends on identifying stock market values for a number of companies, subtracting the values of the identifiable tangible assets to ascertain values for the intangible assets, and then subtracting the value of the intangible assets, other than patents, to obtain stock market values attributable to

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School of Law Working Paper Series, Law and Economics, Paper No. 06-46, 2006), *available at* <http://www.bu.edu/law/faculty/scholarship/workingpapers/2006.html>.

patents.<sup>41</sup> Then I gather that the aggregate patent value estimate is divided by the number of patents to get the average individual patent value. If the value of the tangible assets is misvalued or the value of the other intangibles is not removed or is underestimated, then these numbers may overstate patent values.

Another point that should be made about this methodology is illustrated by a company like Coca-Cola (Coke) that has substantial stock market value but few tangible assets. Several years ago, Coke went to great lengths to transfer its bottling assets to a company called Coca-Cola Enterprises, which is only partially owned by Coke, to get assets off the Coca-Cola balance sheet so as to enhance Coke's apparent return on assets.<sup>42</sup> Notwithstanding the famous "formula in a bank vault" legend, Coke's value is largely attributable to its marketing skills and it owns very few patents.<sup>43</sup> In Coke's case, the numerator, the value of the intangibles, is large. The denominator, the number of patents, is small. The likely result if Coke's other intangibles, for example, its marketing skills, are undervalued is a very high value per patent, which cannot be right. To the extent the analyzed samples include companies like Coca-Cola, the results may well be skewed to the high side. The authors treat both valuation methodologies as yielding estimates of upper bound values.<sup>44</sup> The point of the foregoing is that the estimates are very much that, and in fact may well be even more highly inflated than the book implies.

This same chapter also includes a discussion called "Patent Value Across Groups and Time" that perpetuates the pharmaceutical/chemical patent confusion and states that "patents held by chemical firms are much more valuable than those held by other firms."<sup>45</sup> I would have believed this statement had the authors said patents held by pharmaceutical firms are more valuable. But there is no reason of which I am aware to believe that patents held by chemical firms should be more valuable than those held by other firms, pharmaceuticals

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<sup>41</sup> It is unclear to me from the text, and from the underlying study by one of the authors, how the values of intangible assets other than patents are quantified and then deducted to yield an estimate of aggregate patent values. As with the other valuation methodology, my comments are based on my layman's understanding of the methodology and are not a critique of the complex econometric calculations. Detailed analyses and calculations are set forth in Bessen's working paper. See *supra* note 40 and accompanying text.

<sup>42</sup> See HAROLD SALTZMAN, ROY LEVY & JOHN C. HILKE, TRANSFORMATION AND CONTINUITY: THE U.S. CARBONATED SOFT DRINK BOTTLING INDUSTRY AND ANITRUST POLICY SINCE 1980, at 11–12 (1999) (discussing bottler consolidations).

<sup>43</sup> See Stephen R. Bard & Jason G. Cummins, *The Stock Market and Investment in the New Economy: Some Tangible Facts and Intangible Fictions*, 1 BROOKINGS PAPERS ON ECON. ACTIVITY 65 (2000) (discussing Coke's intangible assets).

<sup>44</sup> BESSEN & MEURER, *supra* note 1, at 108–09.

<sup>45</sup> *Id.* at 106.

excepted. Perhaps this is just more data confusion, but it certainly emphasizes the importance in future analyses of distinguishing between chemical firms and pharmaceutical firms. Perhaps that distinction is made in the same section which states, "Over one-half of the value of world wide patents accrues to a small number of large pharmaceutical firms; over two-thirds accrues to firms in the chemical and pharmaceutical industries."<sup>46</sup> This may mean that about sixteen to seventeen percent of the value of world wide patents accrues to chemical firms. That still strikes me as being too high. But who knows.

Moreover, there is a discussion of the costs of litigation, and I would volunteer another data point.<sup>47</sup> Although Polaroid sought to recover its attorney fees in its litigation against Kodak, it did not. But to simplify the litigation, Kodak's attorneys examined Polaroid's billings and stipulated to an agreed amount if the court ruled Polaroid was entitled to its attorney fees. The agreed amount was filed under seal with the court in the expectation it would never see the light of day if the court ruled that Polaroid was not entitled to recover its attorney fees. That was the ruling.<sup>48</sup> But for reasons of his own, perhaps to frighten potential litigants about the enormous expense of patent litigation, Judge Mazzone published the amount in his damages opinion.<sup>49</sup> It was \$48 million.

The authors also present data from event studies by them and others about the effects of patent litigation on stock value and conclude, based on results presented in Table 6.2, that "[t]he combined wealth of the two sides to the lawsuit decreases."<sup>50</sup> The *Polaroid* litigation was an exception. Dr. Paula Demasi, in her Ph.D. thesis in economics at Harvard, performed and reported event studies for a sequence of events in the Polaroid-Kodak saga, commencing with Kodak's announcement that it was conducting R&D on instant photography through the announcement of a \$909.5 million judgment against Kodak in 1990.<sup>51</sup> The

<sup>46</sup> *Id.* at 109.

<sup>47</sup> *Id.* at 132.

<sup>48</sup> *Polaroid Corp. v. Eastman Kodak Co.*, 16 U.S.P.Q.2d (BNA) 1481, 1540 (D. Mass. 1990).

<sup>49</sup> *Id.* at 1539.

<sup>50</sup> BESSEN & MEURER, *supra* note 1, at 137.

<sup>51</sup> Paula Demasi, *Essays on the Effects of Public Policy* 50 (May, 1991) (Ph.D. dissertation, Harvard University, Department of Economics, published by UMI Dissertation Services, Ann Arbor, Michigan). The judgment was later reduced to \$873.1 million (\$437.5 million damages and \$435.6 million prejudgment interest). *Polaroid Corp. v. Eastman Kodak Co.*, 17 U.S.P.Q.2d (BNA) 1711 (D. Mass. 1991). The award combined lost profits and reasonable royalty damages and therefore overcompensated Polaroid. Cecil D. Quillen, Jr., Senior Advisor, Putnam, Hayes & Bartlett, Innovation and the United States Patent System Today, Address at ABA Program: Antitrust And Intellectual Property (Oct. 19, 1992), available at [http://researchoninnovation.org/quillen/Innovation\(ABA1992\).pdf](http://researchoninnovation.org/quillen/Innovation(ABA1992).pdf). A compensatory damages award would have amounted to about \$200 million, based on a reasonable royalty on all of Kodak's sales at the five percent rate the judge said would have been acceptable to Polaroid. *Id.*

combined change in stock value for the litigation events was +\$721 million at one day after the event, -\$45 million at two days, and +\$380 million at five days.<sup>52</sup> For Kodak alone, these values were +\$953 million, +\$141 million, and +\$772 million, respectively.<sup>53</sup> Polaroid's was negative; its shareholders had lost \$392 million as of the fifth day. Winning does have its price.

The authors take up the topic of patent examination quality in chapter seven.<sup>54</sup> Patent examination quality is only one facet of the more general topic of patent quality and the need to improve it. The term patent quality is frequently used without any clear understanding of what is meant by the term. There are at least two possible meanings, and it is important to understand which definition one is talking about before taking up the question of policy remedies to improve patent quality.

Patent examination quality, which is one of the two meanings, is applied to patents coming out of the PTO and frequently invokes the notion that there is relevant prior art that was unknown to the PTO, or that the PTO otherwise failed to apply proper legal standards and that the patent is therefore invalid. Presumably this kind of lack of quality will be discovered if the patent is litigated to a conclusion. The real evil is that so long as the invalid patent remains in existence, it is a cloud on innovation and a possible instrument for extortion, particularly given the excessive damages awards and uncertainty as to outcomes that characterize Federal Circuit patent law. Innovators accused of infringement of such patents frequently find it safer to settle and pay the extortionist rather than stick it out and face the risk of a crippling damages award, even if they believe they should win in the end.

The other kind of patent quality has to do with patents on obvious inventions that are nonetheless valid under the Federal Circuit's lowered and less certain standards for patentability that exist today, or at least that existed before the Supreme Court's *KSR* decision.<sup>55</sup> These patents claim inventions that are no more than routine applications of textbook principles of science or engineering, sometimes in combination with each other, and which achieve no new or unexpected result. They effectively withdraw knowledge from the public domain and make it unavailable for use by innovators. The patent in *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.* that went to the Supreme Court on the doctrine of equivalents is just such a patent.<sup>56</sup> The patent was for the use of a commercially

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<sup>52</sup> Demasi, *supra* note 51. These values were obtained by combining the values for the liability events and the damages events on pages 45 and 54, respectively, of the Demasi thesis.

<sup>53</sup> *Id.*

<sup>54</sup> BESSEN & MEURER, *supra* note 1, at 160–64.

<sup>55</sup> *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007).

<sup>56</sup> *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997).

available filter to filter, and the thought that it could be the subject of a valid patent mocks the notion of a person of ordinary skill.<sup>57</sup> The authors are extraordinarily generous in their statement that the parties independently “invented” an improved process for purifying dye.<sup>58</sup> Any semi-competent chemical engineer faced with the problem allegedly solved by this patent would have arrived at the same solution. And if they failed to do so, they should have been fired.

Of these two types of “patent quality” deficiencies, the latter is a far more serious impediment to innovation in the United States than the former, which, after all, can be dealt with by courageous innovators who are willing to stick it out through litigation. But for the second type of quality deficiencies, courageous innovators who stick it out will be found to be infringers of valid patents and face the possibility of an injunction and excessive damages. Furthermore, policy remedies aimed at the former, such as increased funding for the PTO, the establishment of post-grant oppositions, or other changes at the PTO will have no effect on the latter more serious quality issue that can be dealt with only by fixing the Federal Circuit problem.

Individual inventors are discussed in chapter eight, and the relative decline in individual invention beginning near the end of the nineteenth century is noted.<sup>59</sup> Not mentioned in this regard is the establishment in the late nineteenth and early twentieth centuries in America and elsewhere of organized industrial research laboratories that employed educated scientists and engineers. The Kodak Research Laboratories were established in 1912.<sup>60</sup> George Eastman’s inspiration to establish a research lab stemmed from a visit to Bayer’s research laboratories in Germany that already employed 700 people.<sup>61</sup> The Bayer labs probably accounted, at least to some extent, for Germany’s preeminence in the synthetic dyestuffs business in the years that preceded World War I. And the Kodak Labs were not the first organized industrial research lab in the U.S.<sup>62</sup> So perhaps what

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<sup>57</sup> *Id.* at 21–23.

<sup>58</sup> BESSEN & MEURER, *supra* note 1, at 61.

<sup>59</sup> *Id.* at 169.

<sup>60</sup> DOUGLAS COLLINS, THE STORY OF KODAK 116–17 (1990).

<sup>61</sup> *Id.* at 115.

<sup>62</sup> See Steven Cherenky, *A Penny For Their Thoughts: Employee Inventors, Preinvention Assignment Agreements, Property, and Personhood*, 81 CAL. L. REV. 597, 608–09 (1993) (giving early examples of industrial laboratories).



is being observed is not the decline of individual inventors,<sup>63</sup> but rather the rise of organized industrial research.<sup>64</sup>

In the discussion of a study by Gambardella, Giuri, and Luzzi, who found that only sixty-one percent of patentees who wanted to license their patents were able to do so, the authors state, “[t]his suggests a significant market failure.”<sup>65</sup> Hardly! What it suggests is wishful thinking by the thirty-nine percent of the patentees who owned patents for which no one else had any use. Sixty-one percent is an astonishingly high percentage, particularly given estimates by some that only about five percent of U.S. patents are ever employed commercially. So the sixty-one percent figure suggests, if anything, an unusually useful group of patents, and a highly efficient market. The whole thrust of this particular section is to suggest that technology markets are inefficient and that it is difficult for small inventors to realize as much value from their patents as large firms do.<sup>66</sup> The other explanation, which I think more plausible, is that technology markets are highly efficient and that the offerings by small inventors are less useful and valuable than those by large firms.

Chapter nine discusses software and business method patents, and I really do not think I can add anything of substance. But I would like to add one observation and one “war story” from my childhood. As to the observation, it strikes me that the extension of patent eligible subject matter to software and business methods was judicial legislation, pure and simple. Like most judicial legislation, it was done without any inquiry into the facts, specifically with reference to the software and financial services industries as to whether either industry was suffering from a lack of innovation, and, if so, whether either would benefit from having the costs of the patent system imposed on it. It seemed to me at the time that neither was suffering. At Kodak our treasurer’s days were filled with visits from investment bankers, all of whom had some new financing

<sup>63</sup> The authors’ discussion of the Lemelson saga is overly generous to Lemelson to the extent it implies he invented the “breakthrough” technologies against which his patents were asserted. BESSEN & MEURER, *supra* note 1, at 170. He did not! These technologies were developed by those accused of infringement or their suppliers. Few, if any, of them were breakthrough technologies. And his patents, or at least some of them, were ruled invalid when one of his victims decided to fight rather than settle. See, e.g., *Symbol Technologies, Inc. v. Lemelson Med., Educ. & Research Found.*, 422 F.3d 1378 (Fed. Cir. 2005).

<sup>64</sup> See WILLIAM J. BAUMOL, *THE FREE-MARKET INNOVATION MACHINE* (2002) (stressing the importance of routinized R&D by large firms (oligopolies) as the source of growth in competitive western economies).

<sup>65</sup> BESSEN & MEURER, *supra* note 1, at 181 (citing Alfonso Gambardella, Paola Giuri & Alessandra Luzzi, *The Market for Patents in Europe* (Lab. of Econ. & Mgmt. Working Paper No. 2006/04), available at <http://ssrn.com/abstract=899539>).

<sup>66</sup> *Id.* at 177.

scheme in which they thought we might have an interest. My knowledge of the software business is less direct. But my visits to computer stores, a wholly new creature, surely left me with the impression that the packaged software business was flourishing.

As for the "war story," I grew up in a small town in southwest Virginia before the advent of supermarkets, and our grocer's store was a short walk from our house. I would frequently be sent to the store to buy something, sometimes tobacco for my grandfather. Mr. Snodgrass, our grocer, would recognize me when I entered the store, and when I told him what I was sent to purchase, he would tell me the brand I should get, hand the item to me, and charge it to my grandmother's account. Now I have never read the famous "one click" patent; but the descriptions I have read sound a lot like what Mr. Snodgrass did in my childhood. And, one might wonder what is inventive about doing by computer something that was undoubtedly done by every storekeeper many years ago.

In the next chapter, the authors refer to the "twinning" study by Stuart Graham and Dietmar Harhoff that quantifies savings to be had if litigated United States patents for which counterpart applications were denied at the European Patent Office (EPO) could be eliminated by United States opposition.<sup>67</sup> This conclusion depends on an implicit assumption that the standards for patentability that would be applied in the United States opposition would be the same as the standards at the EPO. Elsewhere in the book they cite to work by Paul Jensen and others who conclude that United States standards are substantially lower than those of Europe and Japan.<sup>68</sup> Given that fact, it is doubtful that the desired savings could be realized in the absence of an increase in the standards for patentability in the United States. And if that should happen, then the PTO's examination process might well weed out such patents, and oppositions could be rendered unnecessary. So I share the authors' lack of enthusiasm for oppositions, but for reasons far more profound than "poor patent notice."

I suspect it is only because of the staleness of my knowledge of foreign practices, but I am puzzled by the statement that "the patent courts in Japan, Germany, and the United Kingdom all rely to some extent on their respective patent offices for help in claim interpretation."<sup>69</sup> I just don't know what help the respective patent offices provide to the courts, or how it might be used or useful in a contested proceeding.

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<sup>67</sup> BESSEN & MEURER, *supra* note 1, at 224; Graham & Harhoff, *supra* note 10.

<sup>68</sup> Jensen et al., *supra* note 10, at 698.

<sup>69</sup> BESSEN & MEURER, *supra* note 1, at 227.

The authors raise the specter of the persistence of forum shopping and cite papers by Judge Moore and by Atkinson, Marco, and Turner.<sup>70</sup> They also state: “But a decline in forum shopping does not mean much if the parties shop less because they will face equally uncertain patent law in every possible forum. The important question is whether the Federal Circuit made patent law more predictable. Certainly, claim interpretation has not been predictable.”<sup>71</sup>

I emphatically agree that the authors’ question is the important one. And their answer is certainly correct. It is also correct as to the obviousness/nonobviousness question because of the uncertainties mandated by Federal Circuit law. I will have more to say about forum shopping later, in connection with my own reform proposals.<sup>72</sup> The authors also state: “It is certainly true that appeals courts had different interpretations of patent law before the Federal Circuit was created . . . .”<sup>73</sup> That statement is, I think, mostly incorrect, although it was put forward by the proponents of creating the Federal Circuit. I will have more to say about this later as well.<sup>74</sup>

The discussion regarding trade secrets implies a choice between trade secret protection and patent protection, which is very much the conventional wisdom.<sup>75</sup> That choice simply does not exist for innovators concerned for the commercial use of their inventions. Trade secret law protects only against unauthorized disclosure by one who has a confidential relationship with the owner of the trade secret.<sup>76</sup> Others are free to discover the trade secret by independent development, reverse engineering, or other legitimate means, and to disclose it or use it as they see fit.<sup>77</sup> And such others may even obtain a patent on the trade secret and possibly prevent its use by the original developer.<sup>78</sup> At Kodak, we had come to the conclusion that the latter risk (i.e., the risk of being precluded from using our own work because of patenting by a subsequent inventor), was so great that we regularly sought to preempt others from obtaining such patents by seeking patents for our patentable process inventions we expected to use commercially, even if they could be practiced in secret.

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<sup>70</sup> *Id.* at 228.

<sup>71</sup> *Id.*

<sup>72</sup> *See infra* pp. 76–77.

<sup>73</sup> BESSEN & MEURER, *supra* note 1, at 231.

<sup>74</sup> *See infra* pp. 75–76.

<sup>75</sup> BESSEN & MEURER, *supra* note 1, at 232–33.

<sup>76</sup> RESTATEMENT OF TORTS § 757 cmt. B (1939).

<sup>77</sup> *Id.*

<sup>78</sup> *See Phillips v. Frey*, 20 F.3d 623, 629 (5th Cir. 1994) (“[A] third party’s valid reverse engineering of the item can destroy the item’s trade secret protection.”).

The semi-final chapter in the book gives the authors' proposals for reform.<sup>79</sup> Many of the reforms proposed are no more than wishful thinking without concrete proposals, and some might even move the ball backwards. An example of the latter is their proposal for specialized patent trial courts.<sup>80</sup> In the absence of more fundamental changes to simplify and reform patent law, such courts will simply perpetuate and perhaps aggravate the current situation. Moreover, they will be subject to the same temptation to be a "booster of its specialty" that has gripped the Federal Circuit.<sup>81</sup> The better solution is simplification and reform of the United States patent laws.<sup>82</sup> If that is done, the regular courts with their broader perspective should have no difficulty in dealing with patent cases.

Regarding the role of the Patent Office, the authors state that: "Claim meaning . . . in the main depend[s] upon the information contained in the documents prepared by the Patent Office; namely, the patent — with its claim language, drawings, and written description . . ." <sup>83</sup> These documents are *not* prepared by the Patent Office. They are all prepared by the applicant. I do, however, agree with their suggestion that reinvigoration of the definiteness requirement would be a good thing.<sup>84</sup> And their suggestion that claims with multiple possible interpretations should be invalid for indefiniteness is right on the money.<sup>85</sup> Perhaps courts need to resurrect the contract theory of patents and then apply the classic rule of contract construction that ambiguities are to be construed against the drafter (i.e., the patentee) in the case of patents. If these two changes were made (i.e., reinvigoration of the definiteness requirement and resolution of claim ambiguities against the patentee), applicants (and their attorneys) might be far more careful in preparing their patent documents.

Advisory opinions from the PTO should be a non-starter.<sup>86</sup> The other federal agencies mentioned (the SEC and IRS) do *not* provide advisory opinions. Rather they issue no-action letters (business review letters in the case of the Department of Justice Antitrust Division) indicating that the agency will not take action against proposed conduct.<sup>87</sup> They do not express a view on issues in a private dispute.

<sup>79</sup> BESSEN & MEURER, *supra* note 1, at 235–53.

<sup>80</sup> *Id.* at 238.

<sup>81</sup> Declan McCullah, *Left Gets Nod from Right on Copyright Law*, CNET NEWS, Nov. 20, 2002, <http://news.cnet.com/2100-1023-966595.html>.

<sup>82</sup> See Cecil D. Quillen, Jr., *Proposal for the Simplification and Reform of the United States Patent System*, 21 AIPLA Q.J. 189, 206 n.69 (1994) (addressing the question of specialist patent trial courts).

<sup>83</sup> BESSEN & MEURER, *supra* note 1, at 238 (emphasis added).

<sup>84</sup> *Id.* at 239.

<sup>85</sup> *Id.*

<sup>86</sup> *Id.* at 241–42.

<sup>87</sup> See Donna M. Nagy, *Judicial Reliance on Regulatory Interpretations in SEC No-Action Letters: Current Problems and a Proposed Framework*, 83 CORNELL L. REV. 921, 929 (1998) (explaining SEC's no-action

Also, a higher nonobviousness standard would be a good thing,<sup>88</sup> but wishing for it does not provide a mechanism for getting there, nor for assuring it is applied by the courts and at the PTO.

#### IV. PATENT REFORMS TO FOSTER INNOVATION

##### A. THE TWO FUNDAMENTAL REFORMS

There are two, and only two, really, important reforms that should be adopted promptly. Together they address both types of patent quality issues discussed by the authors: namely, patent quality in the courts (i.e., valid patents on obvious inventions) and quality at the PTO. Everything else can wait, and many of the remaining issues may be resolved by the two key reforms.

The first of the fundamental reforms is that we should restore to patent law a self-correcting structure like that which applies to most other areas of federal law. In that structure, appeals from a district court are heard by the regular court of appeals for the region in which the district court is located. All courts can make mistakes, but with such a structure, when the issue arises in another circuit, the courts in that other circuit are free to reconsider the issue on its merits and are not constrained by *stare decisis*. The result is that most errors are quickly purged from the system, and those that persist are frequently the sign of serious policy issues that deserve Supreme Court attention. Our patent system does not work that way. The Federal Circuit has a monopoly on all appeals, and when it makes a mistake, the PTO and the district courts are locked in by *stare decisis* and have no choice but to follow the mistaken policy promulgated by the Federal Circuit. The mistakes persist for a very long time. The Supreme Court has only recently attempted to correct Federal Circuit errors that have persisted for twenty-five years.<sup>89</sup>

This problem can be remedied by adoption of the Nard-Duffy proposal for parallel appellate tracks for patent appeals,<sup>90</sup> or by restoring appellate jurisdiction

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letter process).

<sup>88</sup> BESSEN & MEURER, *supra* note 1, at 248.

<sup>89</sup> See, e.g., *Merck KGaA v. Integra Lifesciences I, Ltd.*, 545 U.S. 193, 208 (2005); *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.*, 546 U.S. 394, 406 (2006); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 393 (2006); *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28, 45 (2006); *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007); *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007); *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007); *Quanta Computer, Inc. v. LG Electronics, Inc.*, 128 S. Ct. 2109 (2008).

<sup>90</sup> See Craig Allen Nard & John F. Duffy, *Rethinking Patent Law's Uniformity Principle*, 101 NW. U. L. REV. 1619 (2007) (recommending establishment of parallel appellate tracks for patent cases).

in patent infringement cases to the regular courts of appeals.<sup>91</sup> Either proposal has the virtue of exposing questions of patent law and policy to judges who have a far broader and deeper background of legal and judicial experience than the typical Federal Circuit judge, and who therefore may have an appreciation for policy nuances affecting innovation that might not occur to the Federal Circuit. Adopting either of these proposals should go a long way toward assuring that the higher standards the Supreme Court has recently sought to restore are followed in the courts and not evaded. That, in turn, should somewhat diminish the need for innovators to seek defensive patent protection and reduce, to some extent, the current flood of patent applications and patents that clog the system.

When I have urged this proposal in the past, I have sometimes been met with the response: "Oh, we couldn't do that. It would bring back the mess that existed before the Federal Circuit came along." That "mess" existed mostly in the propaganda of the proponents of the Federal Circuit who, for the most part, were corporate and Washington patent attorneys whose jobs and incomes were threatened by the possibility of applying the standards of the Supreme Court and the regular courts of appeals at the PTO and the Court of Customs and Patent Appeals.<sup>92</sup> The mess was not apparent to the attorneys who actually litigated patent cases, most of whom opposed formation of the Federal Circuit.<sup>93</sup>

Even the authors appear to have been seduced by the propaganda when they state, "It is certainly true that appeals courts had different interpretations of patent law before the Federal Circuit was created . . ."<sup>94</sup> That statement, as I previously noted, is mostly incorrect.<sup>95</sup> It is my recollection that the "interpretations" of patent law by the regular courts of appeals were largely the same and were consistent with Supreme Court law. As to forum shopping, the authors cite the work by Atkinson, Turner, and Marco who claim to have

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<sup>91</sup> See Quillen, *supra* note 2, at 233.

<sup>92</sup> See *id.* at 226–29 (countering the proponent's arguments for the Federal Circuit's establishment).

<sup>93</sup> See Daniel J. Meador, *Origin of the Federal Circuit: A Personal Account*, 41 AM. U.L. REV. 581, 610 (1992) (noting that almost all of the letters received at the Office for Improvements in the Administration of Justice (OIAJ) from patent trial attorneys opposed creation of the Federal Circuit, whereas almost all from corporate patent attorneys were favorable and referencing Mr. Meador, who headed the OIAJ while on leave from the University of Virginia Law School).

<sup>94</sup> BESSEN & MEURER, *supra* note 1, at 231.

<sup>95</sup> Only twenty-eight percent of the respondents to a survey conducted by the patent consultants to the Hruska Commission thought differences in interpretation of law were a problem. HRUSKA COMMISSION REPORT, *supra* note 27, at 390. Only forty-eight percent thought that circuit conflicts due to differences in the application of the law was a cause of considerable impact on patent disputes. *Id.* The survey was circulated to only 1,400 attorneys and only about 240 usable responses were received. *Id.* at 369.

quantified the amount of forum shopping that occurred prior to and after formation of the Federal Circuit.<sup>96</sup> Their analysis, if I understand it, implicitly depends on the unverified and perhaps unverifiable assumption that patentees could have always sued in their home districts and would have preferred to do so. These are heroic assumptions that assure forum shopping will always be found in their analysis. Venue and personal jurisdiction requirements were such that patentees could sue only where the alleged infringer was incorporated or in venues where an act of infringement had occurred and the alleged infringer had a regular and established place of business.<sup>97</sup> These requirements were strictly enforced in pre-Federal Circuit days, and patentees had little opportunity to forum shop.<sup>98</sup> It was probably a rare coincidence when the patentee's home district was a venue in which he or she could bring suit. Declaratory judgment plaintiffs, however, had more latitude. They could bring an action wherever personal jurisdiction over the patentee existed, provided, of course, that the requisite controversy existed.<sup>99</sup>

Perhaps the answer is in Paul Janicke's history that was published in the *Antitrust Law Journal*.<sup>100</sup> Janicke's article notes that the forum shopping claim was based on a very limited survey by two Federal Circuit proponents that elicited few responses, and that the real concern of the Federal Circuit proponents was the Supreme Court, and not forum shopping or the other reasons given.<sup>101</sup> That is certainly consistent with my recollection.<sup>102</sup>

The second of the fundamental reforms is to enable the PTO to obtain final decisions as to the patentability of applications it has examined. This can be done

<sup>96</sup> BESSEN & MEURER, *supra* note 1, at 228 (citing Scott Atkinson, Alan C. Marco & John L. Turner, *The Economics of a Centralized Judiciary: Uniformity, Forum Shopping and the Federal Circuit*, <http://www.terry.uga.edu/~jlturner/ForumShoppingMay2008.pdf> (last visited Sept. 22, 2008)).

<sup>97</sup> Kimberly A. Moore, *Forum Shopping in Patent Cases: Does Geographic Choice Affect Innovation?*, 79 N.C. L. REV. 889, 895–96 (2001).

<sup>98</sup> *Id.*

<sup>99</sup> 28 U.S.C. § 2201 (2007). Strangely, the authors found forum shopping by declaratory judgment plaintiffs who initiated lawsuits to challenge patents to be less likely. BESSEN & MEURER, *supra* note 1, at 18.

<sup>100</sup> Paul Janicke, *To Be or Not To Be: The Long Gestation of the U.S. Court of Appeals for the Federal Circuit*, 69 ANTITRUST L.J. 645 (2001).

<sup>101</sup> *Id.* at 647, 653–54.

<sup>102</sup> The time prior to the advent of the Federal Circuit was somewhat of a "golden age" for innovators. Although the PTO, under the judicial supervision of the Court of Customs and Patent Appeals (CCPA), persisted in issuing patents that did not conform to applicable legal standards, the federal district courts and courts of appeals regularly protected innovators from harm by patents that should never have been issued by applying the Supreme Court's higher standards for patentability and finding such patents invalid. See KOENIG, *supra* note 21, at 4–23 (indicating a 65.7% invalidity rate).

by abolishing all forms of continuing patent applications except for divisional applications filed pursuant to a 35 U.S.C. § 121 requirement for restriction.<sup>103</sup> At the moment, patent applicants can avoid such final decisions and restart the examination process simply by refiling their applications as continuation or continuation-in-part applications, or by a request for continued examination (RCE). The problem is aggravated by PTO management policies that favor the filing of such continuing applications. The PTO's examiner compensation system rates examiner performance based on the number of "first office actions" and "disposals."<sup>104</sup> Every continuing application or RCE results in a disposal, and the refiled application requires a first office action, and promises another disposal.<sup>105</sup> Thus PTO policy rewards examiners for inducing the filing of continuing applications. PTO management is schizophrenic on the issue. It has proposed a rule, which the U.S. District Court for the Eastern District of Virginia has found to be beyond its authority,<sup>106</sup> to slightly limit the number of continuing applications,<sup>107</sup> but continues its management policy of favoring their filing by maintaining the compensation system that rewards examiners for inducing their filing. Such are the ways of a federal bureaucracy.

In addition to enabling the PTO to obtain final decisions as to the patentability of applications it has examined, such abolition would permit the PTO to apply the resources now devoted to the examination of such continuing applications (currently about thirty percent of applications filed at the PTO)<sup>108</sup> to the examination of original applications, which should enhance patent quality. As

<sup>103</sup> This proposal was put forward by the author at the Patent Quality Conference sponsored by the Intellectual Property Owners Association in 2004. The text of the author's presentation can be found at Cecil Quillen, *Abolish Continuing Patent Applications?*, Presentation at the Patent Quality Conference of the Intellectual Property Owners Association (Apr. 19, 2004), available at [http://www.researchoninnovation.org/quillen/Abolish%20Continuing%20Applications%20\(IPO%202004\).pdf](http://www.researchoninnovation.org/quillen/Abolish%20Continuing%20Applications%20(IPO%202004).pdf).

<sup>104</sup> See Mark A. Lemley & Kimberly A. Moore, *Ending Abuse of Patent Continuations*, 84 B.U. L. REV. 63, 74 & n.38 (2004) (discussing examiner incentive system).

<sup>105</sup> See *id.* at n.38; Just a Patent Examiner, <http://just-n-examiner.livejournal.com> (Sept. 22, 2008, 22:22 EST) ("Every time an applicant files a RCE (or a straight continuation), the examiner receives a count for the express abandonment, and another count for the first action after the RCE.")

<sup>106</sup> *Tafas v. Dudas*, 541 F. Supp. 2d 805 (E.D. Va. 2008).

<sup>107</sup> See PTO, *Questions and Answers for the Record, United States Patent and Trademark Office Oversight Hearing Before the Comm. on the Judiciary Sub-comm. on Courts, the Internet, and Intellectual Property* (Feb. 27, 2008), available at <http://www.nipra.org/DudasRsp2.pdf> ("The limitations proposed in the continuations rule were assumed to result in a 1% reduction of application received. . . .").

<sup>108</sup> See PTO, *PERFORMANCE AND ACCOUNTABILITY REPORT: FISCAL YEAR 2007*, at 68, available at <http://www.uspto.gov/web/offices/com/annual/2007/2007annualreport.pdf>.



to divisional applications, they should be required to be filed promptly after the requirement for restriction is made final.

Both of these changes are likely to be bitterly opposed by the organized patent bar and by their adherents and captives (the “patent crowd”). After all, it is their pocketbooks that will be affected. But if we want a patent system that serves innovation and American consumers rather than the interests of the attorneys who participate in the system, we need to adopt both of these proposals. The positions taken by the organized patent bar and their adherents and captives will provide a litmus test of whether they place their own interests ahead of innovation in the United States and the public interest.

#### B. THE SECONDARY AND TERTIARY REFORMS

There are a number of secondary items that are candidates for reform. But we should not take them up until the two key reforms, discussed above, have been enacted and given time to operate. For example, the bitter debate over patent damages that is part of the current reform squabble could go away if the first proposal above is adopted and damages issues are presented to appellate judges who have actually tried a civil suit to conclusion, either as attorneys or judges, and who therefore have some practical knowledge of damages issues.

Similarly the so-called secondary factors, which the Federal Circuit has mandated for consideration in every case,<sup>109</sup> and which has made patent litigation more complicated and expensive and outcomes less predictable, could be returned to their prior status of conditional relevance.<sup>110</sup> Even then it would be better if they were to be abolished entirely, and that would require legislation. The doctrine of equivalents, which is patent law’s “catch 22” that makes infringers out of innovators who have successfully designed around a patent’s claims, is another source of unnecessary uncertainty that adds expense and complication to patent evaluations and patent litigation and that should be abolished. This will require legislation.

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<sup>109</sup> Compare Cecil D. Quillen, Jr., *Proposal for the Simplification and Reform of the United States Patent System*, 21 AIPLA Q.J. 189 nn.15–16 (discussing elevation of searching factors by court of appeals), with A. Samuel Oddi, *Beyond Obviousness: Innovation Protection in the Twenty-First Century*, 38 AM. U. L. REV. 1097, 1123–26 (1989) (discussing the Supreme Court’s finding that secondary factors alone do not satisfy patent requirements).

<sup>110</sup> And such experienced judges could well restore preponderance of the evidence as the applicable evidentiary standard for the 35 U.S.C. § 282 presumption of validity rather than the Federal Circuit’s clear and convincing evidence test.

We should also enact a “prior independent inventor” defense, similar in many respects to the prior user rights defense that has been discussed,<sup>111</sup> to the effect that an affirmative defense to an infringement charge is actual reduction to practice of the accused device or process by the accused infringer prior to the publication date of the patent he or she is accused of infringing (i.e., independent prior invention by the defendant). This should assure innovators the right to use their own prior independent inventions free and clear of the claims of subsequent inventors and reduce the pressure on innovators to file defensive patent applications on marginal inventions. It may also help reduce the patent and application flood. It should appeal to patent owners, as the validity of their patents would not be placed in issue by such a defense. We should furthermore adopt one more affirmative noninfringement defense to the effect that there is no infringement if the accused device, process, etc., is obvious in view of prior art to the asserted patent and published applications or patents filed prior to the filing date of the asserted patent. This, too, should appeal to patent owners because, as with the prior independent invention defense, the validity of their patents would not be placed in issue by the defense.

There are some tertiary items, consideration of which should be postponed until well after the primary and secondary items have been adopted so as to avoid having to deal with too many contentious issues at one time. These include the question of whether we should adopt a “first-to-file” system, with or without a grace period for inventors, and whether it is worthwhile to adopt some form of post-grant opposition system. An important reason for delaying consideration of the latter is to provide time to see what happens when the self-correcting judicial structure has been restored to patent law and the federal courts have had time to implement the restored higher standards for patentability mandated by the Supreme Court’s recent *KSR* decision, and the PTO has been enabled to obtain final decisions as to the patentability of applications it has examined and has had the opportunity to apply the restored standards. It may be that such an expensive procedure is unnecessary or not worthwhile.

## V. CONCLUSION

Bessen and Meurer are right! Our patent system is not working for most innovators. Nor is it working for American consumers who ultimately bear the costs our patent system imposes on innovation in the United States and the

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<sup>111</sup> For recent legislative proposals expanding the prior user defense, see Patent Reform Act of 2007, H.R. 1908, 110th Cong. § 5 (2007); Patent Reform Act of 2007, S. 1145, 110th Cong. § 4 (2007).

consequences of those costs. We get less innovation and it costs us more. But the problems with our patent system are more profound than the failure of patent notice. And those problems can be resolved only by fundamental reforms that go beyond the patent notice issues and address the absence of a self-correcting mechanism in the structure of our federal judicial system as it applies to our patent system, and the inability of the PTO to obtain final decisions as to the patentability of applications it has examined. Two reforms should be adopted. A self-correcting judicial structure for our patent system should be put in place, either by adopting the Nard/Duffy proposal for parallel appellate tracks, or by restoring appellate jurisdiction in patent infringement cases to the regular courts of appeals. And the PTO should be enabled to obtain final decisions as to the patentability of applications it has examined, which can be done by abolishing all forms of continuing patent applications except for divisional applications filed pursuant to a 35 U.S.C. § 121 requirement for restriction. These two fundamental reforms should be sufficient to point our patent system in the right direction. And consideration of other reforms should be delayed as many of them could well become unnecessary as a consequence of implementing these two fundamental reforms.

