

The Patent Crisis and How the Courts Can Solve It

By Dan L. Burk and Mark A. Lemley

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Many assert that the U.S. patent system is in crisis. The internet is rife with articles describing both the problem and proposing possible solutions. Some perceived problems include the protracted application process,¹ and the proliferation of low quality patents due to the backlog in the patent office.² Other problems cited include increased litigation, many overlapping rights in a given technology area (or patent thickets), damages that are excessive, overly large royalty payments, and uncertainty about patent scope and validity.³ Changes within the patent office, legislative reform,⁴ and the tailoring of patent laws by the courts are all proposed as ways to solve the problem.⁵ In their book, *The Patent Crisis and How the Courts Can Solve It*, Dan L. Burk and Mark A. Lemley lay out their case for why the courts, as opposed to Congress or the United States Patent and Trademark Office (USPTO), are ideally situated to address the problems within the patent system.

¹ Gene Quinn, *Solving the Patent Crisis and the PTO Budget*, IPWATCHDOG.COM, July 8, 2009, archived at <http://www.webcitation.org/5o6fXnMlq>.

² Eric Chabrow, *The U.S. Patent System in Crisis*, INFORMATIONWEEK, Feb. 20, 2006, archived at <http://www.webcitation.org/5o6e5Zoa5>.

³ DAN L. BURK AND MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 22-29 (The University of Chicago Press 2009).

⁴ *Id.*

⁵ Chabrow, *supra* note 2.

The authors assert that there are two different patent systems in our country; one that is essential for continuing innovation and characterized by patent applications that are carefully scrutinized resulting in strong patent protection for the applicants. The second system is seen as a cost instead of a benefit because the rights granted do not necessarily increase innovation or profits for the patentees. The United States' unitary patent system is viewed as essential for profitability and innovation in the biotechnology industry, while many in the information technology industry believe they would be better off without a patent system.⁶

Burk and Lemley explore the idea that a system designed to promote innovation across industries has vastly different effects depending upon the industry in which the patentee is working. They assert that the patent system's unitary rules cannot optimally promote innovation in today's climate if the rules are applied in the same way to extraordinarily diverse areas of technology. They further assert that the courts are better suited to tailor the patent laws than either Congress or the USPTO.⁷ In the face of science and technology that continue to change and diversify at an unprecedented rate, they see great importance in maintaining a flexible patent system. The authors present the problems that they see in the patent system, describe the sources of these problems, and then make their case for why the courts may be best suited to address the issues with the patent system in today's scientific climate.

After initially laying out their case, Burk and Lemley provide an excellent overview of the patent system, beginning with a brief theoretical explanation of why we protect innovation in the first place. The authors explain the process of obtaining a patent in the USPTO, followed by an explanation of possible post-grant outcomes. The US patent system is then briefly placed in an international context. The authors have written their book with a variety of audiences in mind,

⁶ BURK AND LEMLEY, *supra* note 3, at 4.

⁷ *Id.* at 5.

and this chapter provides the necessary background to help a reader unfamiliar with the patent system understand the rest of the book.

The second section of the book begins with a description of how the function of patents varies across industries. Differences in research and development costs influence how important patent protection is in any given industry. Patent protection is vital in the pharmaceutical industry where bringing a product to market is risky and characterized by high R & D costs and significant FDA regulatory hurdles. Producing a new semiconductor is even more costly than bringing a new pharmaceutical to market, making patent protection important in that industry as well.⁸ Strong patent protection is essential for encouraging innovation when significant hurdles exist in bringing a product to market.

The authors also describe how differences in appropriability impact the importance of patent protection in a given industry. A simple product, that does not require costly reverse engineering, but instead shows an imitator how to make and use the product on its face, also requires strong protection. In some industries, innovation is incremental meaning each new product will build on a previous product through small improvements, as in successive versions of computer software in which the new product is an improvement on the prior version. In others, innovation is characterized by a series of entirely new inventions that stand alone. Patterns of innovation can also vary by firm size, and based on what other incentives to innovate exist.

In Chapter 5, the authors apply these differing patterns of innovation to different industries and technology areas in order to illustrate the “industry specific nature of the patent system.” The importance of patent protection varies systematically by industry, consequently,

⁸ *Id.* at 38-39.

the money and energy expended by a company on obtaining a patent will correlate directly to the company's technology area.

The patent system was designed when invention was primarily mechanical and there was a one to one correspondence between inventions and patents: one new machine received one patent. The patent system was still unitary as late as the 1970's; most applications progressed through the USPTO at a similar rate, and applicants paid similar costs for patents. By the 1990's, the system was changing dramatically with some applications spending significantly longer in prosecution, citing more prior art, being abandoned and refiled more frequently, and being amended more often. Industry by industry variations in the value of patents lead to differences in whether patents are enforced, how rapidly the value of a patent diminishes over time, whether companies build large patent portfolios and whether patent owners or outsiders tend to initiate law suits.

Next, the authors present the different theories that underlie patent law. Basic agreement exists that the purpose of patent law is to encourage innovation by providing an inventor with a limited monopoly. Society bears the burden of higher initial costs as a result of the monopoly, but a net societal benefit results from the overall increase in innovation. Once past this initial point of agreement, there are complex disagreements about "how the patent system promotes innovation, about what kinds of innovation we need to promote, about how strong patent protection rights need to be to encourage innovation, and about how we should allocate these rights."

These varying theoretical perspectives are applied to particular areas of technology. For instance, prospect theory envisions innovation as a long, expensive process resulting in a single patent on a single invention. According to prospect theory, the initial innovator bears most of the

high development costs while subsequent imitators can inexpensively copy the invention making strong patent protection vital. This correlates well with the situation in the pharmaceutical industry where invention is difficult and expensive while imitation is not. In contrast, according to the theory of cumulative innovation, maximum societal benefit result from many entities gradually and incrementally improving an invention over time. This correlates with how innovation proceeds in the software industry, and leads one to favor many narrow patents. The explanation of different patent theories and their application to different industries effectively illustrate just how diverse technology and innovation are in today's society, why few people can agree on what the optimal solution to the patent crisis is, and why an industry specific approach may be necessary.

Having argued for industry specific application of patent laws, the authors devote the last half of the book to making the case that the courts are ideally situated to resolve the patent crisis. They do not see the USPTO as the best entity for resolving the situation because it is not a policy making body, and because their decisions do not have the force of law. The authors point out that Congress cannot create industry specific legislation for a variety of reasons, including treaty obligations that prohibit it, vigorous lobbying that distorts good public policy, and fact that Congressional action moves at a glacial pace compared to the speed of technological change today.

The authors detail the policy instruments that the courts have at their disposal, and that have been used in an industry specific way in the past. They also propose other ways the courts could tailor their rulings to specific industries. They conclude with two interesting cases studies in which they apply existing and their proposed policy tools to the information technology and biotechnology industries. The authors document the judicial tailoring that has already occurred

and suggest ways to further improve the application of the patent laws to IT and biotechnology. They contend that the adversarial process is well equipped to reveal the relevant facts in any given case, allowing the courts to have adequate information for good decision making. Further, while the courts can, and do make mistakes, the authors maintain that they are likely to make fewer than Congress, and that the courts are better positioned to tailor patent law in a way that serves public policy.

The reader may think that the authors' proposal raises the specter of judicial activism, but the authors are essentially proposing that the Federal Circuit continue to flexibly apply the broad, general patent laws. This is analogous to how the body of common law grows and fills in gaps left in other statutes by the legislature. Whether or not the reader agrees with the authors' conclusions about the role of the courts in shaping patent policy, the book is worth reading simply for the excellent overview it provides of patent law and the complex policy considerations at work in different industries. It is fascinating to see how the nature of scientific discovery and invention in a variety of disciplines is driving patent law in different directions. An overview of such industry specific workings of patent law is especially valuable to people new to patent law, since this information is generally outside the scope of a typical patent law class.

This is an interesting, well researched book. The writing is clear and organized in a way that will engage readers with varying levels of knowledge in the field. The authors state that their goal in *The Patent Crisis* is not to assert that they have hit on the correct solution to the problems in the US patent system, but rather to encourage a dialog about the problems and possible solutions. The authors have advanced this goal by providing an extremely well written

book that proposes interesting solutions to the difficulties of fitting a single set of general laws to technologies that vary in ways that were unimaginable to those who created our patent laws.