Order Code RL32996

CRS Report for Congress
Received through the CRS Web

Patent Reform: Innovation Issues

Updated October 16, 2006

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Patent Reform: Innovation Issues

Summary

Congressional interest in patent policy and possible patent reform has expanded as the importance of intellectual property to innovation has increased. Patent ownership is perceived as an incentive to the technological advancement that leads to economic growth. However, growing interest in patents has been accompanied by persistent concerns about the fairness and effectiveness of the current system. Several recent studies, including those by the National Academy of Sciences and the Federal Trade Commission, have recommended patent reform to address perceived deficiencies in the operation of the patent regime. Other experts maintain that major alterations in existing law are unnecessary and that the patent process can, and is, adapting to technological progress.

The Patent Act of 2005, H.R. 2795, introduced in June 2005 (subsequent hearings held), would work significant legal reforms to the patent system. Among the more notable of these changes are a shift to a first-inventor-to-file priority system; substantive and procedural modifications to the patent law doctrines of willful infringement and inequitable conduct; and adoption of post-issuance opposition proceedings, prior user rights, and pre-issuance publication of all pending applications. Several of these proposals have been the subject of discussion within the patent community for many years, but others are more novel propositions.

A similar bill, S. 3818, was introduced on August 3, 2006.

Pending legislation attempts to address several issues of concern including the quality of issued patents, the expense and complexity of patent litigation, harmonization of U.S. patent law with the laws of our leading trading partners, potential abuses committed by patent speculators, and the special needs of individual inventors, universities, and small firms with respect to the patent system. In addition, although the existing patent statute in large measure applies the same basic rules to different sorts of inventions, regardless of the technological field of that invention, the patent system is widely believed to impact different industries in varying ways.

The provisions of H.R. 2795 would arguably work the most sweeping reforms to the U.S. patent system since the nineteenth century. However, many of these proposals, such as pre-issuance publication, prior user rights, and oppositions, have already been implemented in U.S. law to a more limited extent. These and other reforms, such as the first-inventor-to-file priority system and elimination of the best mode requirement, also reflect the decades-old patent practices of Europe, Japan, and our other leading trading partners.

Other knowledgeable observers are nonetheless concerned that certain of these proposals would weaken the patent right, thereby diminishing needed incentives for innovation. Some also believe that changes of this magnitude, occurring at the same time, do not present the most prudent course for the patent system. Patent reform therefore confronts Congress with difficult legal, practical, and policy issues, but also with apparent possibilities for altering and possibly improving the legal regime that has long been recognized as an engine of innovation within the U.S. economy.

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This report was funded in part by a grant from the John D. and Catherine T. MacArthur Foundation

Patent Reform: Innovation Issues

Introduction

Congressional interest in patent reform has increased as the patent system becomes more significant to U.S. industry. There is broad agreement that more patents are sought and enforced then ever before; that the attention paid to patents in business transactions and corporate boardrooms has dramatically increased; and that the commercial and social significance of patent grants, licenses, judgments, and settlements is at an all-time high.[1] As the United States becomes even more of a high-technology, knowledge-based economy, the importance of patents may grow even further in the future.

Increasing interest in patents has been accompanied by persistent concerns about the fairness and effectiveness of the current system. Several recent studies, including those by the National Academy of Sciences and the Federal Trade Commission, have recommended patent reform to address perceived deficiencies in the operation of the patent regime.[2] Other experts maintain that major alterations in existing law are unnecessary and that the patent process can, and is, adapting to technological progress.

In June 2005, legislation was introduced that attempts to respond to current concerns about the functioning of the patent process. The Patent Act of 2005, H.R. 2795, proposes significant legal reforms to the patent system, including a shift to a first-inventor-to-file priority system; substantive and procedural modifications to the patent law doctrines of willful infringement and inequitable conduct; and adoption of post-issuance opposition proceedings, prior user rights, and pre-issuance publication of all pending applications. Several of these proposals have been the subject of discussion within the patent community for many years, but others are more novel propositions.

The House Subcommittee on Courts, the Internet, and Intellectual Property held hearings on H.R. 2795 on June 9, 2005. The bill was then subject to a Chairman's

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[1] Statistics from the United States Patent and Trademark Office (USPTO) support this account. In 1980, the USPTO received 104,329 utility patent applications; by 2003, this number had grown to 342,441 applications. During the same time period, the number of U.S. patents granted on an annual basis grew from 61,810 to 169,028. U.S. Patent and Trademark Office, *U.S. Patent Statistics, Calendar Years 1863 - 2003* [available at [http://www.uspto.gov]].

[2] National Research Council, National Academy of Sciences, *A Patent System for the 21st Century*, [Washington, National Academies Press, 2004] and Federal Trade Commission, *To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy*, October 2003, available at [http://www.ftc.gov].

substitute amendment on July 26, 2005. The Subcommittee held hearings on the substitute bill on September 15, 2005. In addition, a similar bill, S. 3818, was introduced on August 3, 2006. Although this report addresses H.R. 2795 as it was originally introduced, a CRS memorandum prepared on September 21, 2006, titled *Patent Reform Proposals*, discusses these subsequent legislative developments in the House and Senate.[3]

This study provides an overview of current patent reform issues. It begins by offering a summary of the structure of the current patent system and the role of patents in innovation policy. The report then reviews some of the broader issues and concerns, including patent quality, the high costs of patent litigation, international harmonization, and speculation in patents, that have motivated H.R. 2795's diverse reform proposals. The specific components of this legislation are then identified and reviewed in greater detail.

Patents and Innovation Policy

The Mechanics of the Patent System

The patent system is grounded in Article I, Section 8, Clause 8 of the U.S. Constitution, which states that "The Congress Shall Have Power . . . To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . ." As mandated by the Patent Act of 1952,[4] U.S. patent rights do not arise automatically. Inventors must prepare and submit applications to the U.S. Patent and Trademark Office (USPTO) if they wish to obtain patent protection.[5] USPTO officials known as examiners then assess whether the application merits the award of a patent.[6] The patent acquisition process is commonly known as "prosecution."[7]

In deciding whether to approve a patent application, a USPTO examiner will consider whether the submitted application fully discloses and distinctly claims the invention.[8] In addition, the application must disclose the "best mode," or preferred way, that the applicant knows to practice the invention.[9] The examiner will also determine whether the invention itself fulfills certain substantive standards set by the patent statute. To be patentable, an invention must be useful, novel and nonobvious.

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[3] This general distribution memorandum, *Patent Reform Proposals*, is available from the authors of this report.

[4] P.L. 82-593, 66 Stat. 792 (codified at Title 35 United States Code).

[5] 35 U.S.C. § 111.

[6] 35 U.S.C. § 131.

[7] John R. Thomas, "On Preparatory Texts and Proprietary Technologies: The Place of Prosecution Histories in Patent Claim Interpretation," 47 *UCLA Law Review* (1999), 183.

[8] 35 U.S.C. § 112.

[9] Ibid.

The requirement of usefulness, or utility, is satisfied if the invention is operable and provides a tangible benefit.[10] To be judged novel, the invention must not be fully anticipated by a prior patent, publication or other knowledge within the public domain.[11] A nonobvious invention must not have been readily within the ordinary skills of a competent artisan at the time the invention was made.[12]

If the USPTO allows the patent to issue, the patent proprietor obtains the right to exclude others from making, using, selling, offering to sell or importing into the United States the patented invention.[13] Those who engage in these acts without the permission of the patentee during the term of the patent can be held liable for infringement. Adjudicated infringers may be enjoined from further infringing acts.[14] The patent statute also provides for the award of damages "adequate to compensate for the infringement, but in no event less than a reasonable royalty for the use made of the invention by the infringer."[15]

The maximum term of patent protection is ordinarily set at 20 years from the date the application is filed.[16] At the end of that period, others may employ that invention without regard to the expired patent.

Patent rights are not self-enforcing. Patentees who wish to compel others to observe their rights must commence enforcement proceedings, which most commonly consist of litigation in the federal courts. Although issued patents enjoy a presumption of validity, accused infringers may assert that a patent is invalid or unenforceable on a number of grounds.[17] The U.S. Court of Appeals for the Federal Circuit (Federal Circuit) possesses national jurisdiction over most patent appeals from the district courts.[18] The U.S. Supreme Court enjoys discretionary authority to review cases decided by the Court of Appeals for the Federal Circuit.[19]

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[10] 35 U.S.C. § 101.

[11] 35 U.S.C. § 102.

[12] 35 U.S.C. § 103.

[13] 35 U.S.C. § 271(a).

[14] 35 U.S.C. § 283.

[15] 35 U.S.C. § 284.

[16] 35 U.S.C. § 154(a)(2). Although patent term is based upon the filing date, the patentee gains no enforceable legal rights until the USPTO allows the application to issue as a granted patent. A number of Patent Act provisions may modify the basic 20-year term, including examination delays at the USPTO and delays in obtaining marketing approval for the patented invention from other federal agencies.

[17] 35 U.S.C. § 282.

[18] 28 U.S.C. § 1295(a)(1).

[19] 28 U.S.C. § 1254(1).

Innovation Policy

Patent ownership is perceived to be an incentive to innovation, the basis for the technological advancement that contributes to economic growth. It is through the commercialization and use of new products and processes that productivity gains are made and the scope and quality of goods and services are expanded. Award of a patent is intended to stimulate the investment necessary to develop an idea and bring it to the marketplace embodied in a product or process. Patent title provides the recipient with a limited-time monopoly over the use of his discovery in exchange for the public dissemination of information contained in the patent application. This is intended to permit the inventor to receive a return on the expenditure of resources leading to the discovery but does not guarantee that the patent will generate commercial benefits. The requirement for publication of the patent is expected to stimulate additional innovation and other creative means to meet similar and expanded demands in the marketplace.

Innovation produces new knowledge. One characteristic of this knowledge is that it is a "public good," a good that is not consumed when it is used. This "public good" concept underlies the U.S. patent system. Absent a patent system, "free riders" could easily duplicate and exploit the inventions of others. Further, because they incurred no cost to develop and perfect the technology involved, copyists could undersell the original inventor. The resulting inability of inventors to capitalize on their inventions would lead to an environment where too few inventions are made.[20] The patent system corrects this market failure problem by providing innovators with an exclusive interest in their inventions, thereby allowing them to capture its marketplace value.

The regime of patents purportedly serves other goals as well. The patent system encourages the disclosure of products and processes, for each issued patent must include a description sufficient to enable skilled artisans to practice the patented invention.[21] At the close of the patent's twenty-year term,[22] others may practice the claimed invention without regard to the expired patent. In this manner the patent system ultimately contributes to the growth of the public domain.

Even during their term, issued patents may also encourage others to "invent around" the patentee's proprietary interest. A patentee may point the way to new products, markets, economies of production and even entire industries. Others can build upon the disclosure of a patent instrument to produce their own technologies that fall outside the exclusive rights associated with the patent.[23]

The patent system has also been identified as a facilitator of markets. Absent patent rights, an inventor may have scant tangible assets to sell or license. In

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[20] *See* Rebecca S. Eisenberg, "Patents and the Progress of Science: Exclusive Rights and Experimental Use," 56 *University of Chicago Law Review* 1017 (1989).

[21] 35 U.S.C. § 112.

[22] 35 U.S.C. § 154.

[23] Eisenberg, *supra,* at 1017.

addition, an inventor might otherwise be unable to police the conduct of a contracting party. Any technology or know-how that has been disclosed to a prospective licensee might be appropriated without compensation to the inventor. The availability of patent protection decreases the ability of contracting parties to engage in opportunistic behavior. By lowering such transaction costs, the patent system may make technology-based transactions more feasible.[24]

Through these mechanisms, the patent system can act in more socially desirable ways than its chief legal alternative, trade secret protection. Trade secrecy guards against the improper appropriation of valuable, commercially useful and secret information. In contrast to patenting, trade secret protection does not result in the disclosure of publicly valuable information. That is because an enterprise must take reasonable measures to keep secret the information for which trade secret protection is sought. Taking the steps necessary to maintain secrecy, such as implementing physical security measures, also imposes costs that may ultimately be unproductive for society.[25]

The patent system has long been subject to criticism, however. Some observers have asserted that the patent system is unnecessary due to market forces that already suffice to create an optimal level of innovation. The desire to obtain a lead time advantage over competitors, as well as the recognition that technologically backward firms lose out to their rivals, may well provide sufficient inducement to invent without the need for further incentives.[26] Other commentators believe that the patent system encourages industry concentration and presents a barrier to entry in some markets.[27] Still other observers believe that the patent system too frequently attracts speculators who prefer to acquire and enforce patents rather than engage in socially productive activity.[28]

When analyzing the validity of these competing views, it is important to note the lack of rigorous analytical methods available for studying the effect of the patent law upon the U.S. economy as a whole. The relationship between innovation and patent rights remains poorly understood. As a result, current economic and policy tools do not allow us to calibrate the patent system precisely in order to produce an optimal level of investment in innovation. Thus, each of the arguments for and against the patent system remains open to challenge by those who are unpersuaded by their internal logic.

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[24] Robert P. Merges, "Intellectual Property and the Costs of Commercial Exchange: A Review Essay," 93 *Michigan Law Review* (1995), 1570.

[25] David D. Friedman *et al.*, "Some Economics of Trade Secret Law," 5 *Journal of Economic Perspectives* (1991), 61.

[26] *See* Frederic M. Sherer, *Industrial Market Structure and Economic Performance* (1970), 384-87.

[27] *See* John R. Thomas, "Collusion and Collective Action in the Patent System: A Proposal for Patent Bounties," *University of Illinois Law Review* (2001), 305.

[28] *Ibid.*

Current Issues and Concerns

Pending legislation proposes a number of changes to diverse aspects of the patent system. Although these reforms are undoubtedly motivated by a range of concerns, a discrete number of issues have been the subject of persistent discussion in the patent community over a period of many years. Among these issues are concern for the quality of issued patents, the expense and complexity of patent litigation, harmonization of U.S. patent law with the laws of our leading trading partners, potential abuses committed by patent speculators, and the special needs of individual inventors, universities, and small firms with respect to the patent system. In addition, although the patent statute in large measure applies the same basic rules to different sorts of inventions, regardless of the technological field of that invention, the patent system is widely believed to impact different industries in varying ways.[29] As a result, different industries can be expected to espouse different views of certain patent reform proposals. Before turning to a more specific analysis of individual legislative proposals, this report reviews the proposed legislation's broader themes with regard to these issues and concerns.

Patent Quality

Government, industry, academia and the patent bar alike have long insisted that the USPTO approve only those patent applications that describe and claim a patentable advance.[30] Because they meet all the requirements imposed by the patent laws, quality patents may be dependably enforced in court and employed as a technology transfer tool. Such patents are said to confirm private rights by making their proprietary uses, and therefore their value, more predictable. Quality patents also may clarify the extent that others may approach the protected invention without infringing. These traits in turn should strengthen the incentives of private actors to engage in value-maximizing activities such as innovation or commercial transactions.[31]

In contrast, poor patent quality is said to hold deleterious consequences. Large numbers of inappropriately granted patents may negatively impact entrepreneurs. For example, innovative firms may be approached by an individual with a low quality patent that appears to cover the product they are marketing. The innovative firm may recognize that the cost of challenging a patent even of dubious validity may be considerable. Therefore, the firm may choose to make payments under licensing

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[29] *See* Dan L. Burk & Mark A. Lemley, "Is Patent Law Technology-Specific?," 17 *Berkeley Technology Law Journal* (2002), 1155.

[30] CRS Report RL31281, *Patent Quality and Public Policy: Issues for Innovative Firms in Domestic Markets*, by John R. Thomas.

[31] *See* Joseph Farrell & Robert P. Merges, "Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help," 19 *Berkeley Technology Law Journal* (2004), 943.

arrangements, or perhaps decide not to market its product at all, rather than contest the patent proprietor's claims.[32]

Poor patent quality may also encourage opportunistic behavior. Perhaps attracted by large damages awards and a potentially porous USPTO, rent-seeking entrepreneurs may be attracted to form speculative patent acquisition and enforcement ventures. Industry participants may also be forced to expend considerable sums on patent acquisition and enforcement.[33] The net results would be reduced rates of innovation, decreased patent-based transactions, and higher prices for goods and services.

Although low patent quality appears to affect both investors and competitors of a patentee, patent proprietors themselves may also be negatively impacted. Patent owners may make managerial decisions, such as whether to build production facilities or sell a product, based upon their expectation of exclusive rights in a particular invention. If their patent is declared invalid by the USPTO or a court, the patentee will be stripped of exclusive rights without compensation. The issuance of large numbers of invalid patents would increase the possibility that the investment-backed expectations of patentees would be disappointed.[34]

The notion that high patent quality is socially desirable has been challenged, however. Some commentators believe that market forces will efficiently assign patent rights no matter what their quality. Others observe that few issued patents are the subject of litigation and further estimate that only a minority of patents are licensed or sold. Because many patented inventions are not used in a way that calls their validity into question, some observers maintain, society may be better off making a detailed review into the patentability of an invention only in those few cases where that invention is of commercial significance.[35]

Proposed legislation bears upon the patent quality issue. In particular, H.R. 2795 would allow for increased public participation in USPTO decisionmaking through a pre-issuance submission procedure. This bill would also allow for post-issuance opposition proceedings, which would potentially allow interested parties to "weed out" invalid patents before they are the subject of licensing or infringement litigation.

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[32] *See* Bronwyn H. Hall & Dietmar Harhoff, "Post-Grant Reviews in the U.S. Patent System — Design Choices and Expected Impact," 19 *Berkeley Technology Law Journal* (2004), 989.

[33] *See* Robert P. Merges, "As Many As Six Impossible Patents Before Breakfast: Property Rights for Business Concepts and Patent System Reform," 14 *Berkeley Technology Law Journal* (1999), 577.

[34] *See* Craig Allen Nard, "Certainty, Fence Building and the Useful Arts," 74 *Indiana Law Journal* (1999), 759.

[35] Mark A. Lemley, "Rational Ignorance at the Patent Office," 95 *Northwestern University Law Review* (2001), 1495.

Litigation Costs

Patent enforcement is often expensive. The complex legal and technological issues, extensive discovery proceedings, expert witnesses, and specially qualified attorneys associated with patent trials can lead to high costs.[36] One study published in 2000 concluded that the average cost of patent enforcement was $1.2 million.[37] These expenses appear to be increasing, with one more recent commentator describing an "industry rule of thumb" whereby "any patent infringement lawsuit will easily cost $1.5 million in legal fees alone to defend."[38] Higher stakes litigation is even more costly: For patent suits involving damages claims of more than $25 million, expenses reportedly increase to $4 million per side.[39]

For innovative firms that are not infrequently charged with patent infringement, or that bring claims of patent infringement themselves, the annual expenses associated with patent litigation can be very dear. The Microsoft Corporation reportedly defends an average of 35 to 40 patent lawsuits annually at a cost of almost $100 million.[40] The Intel Corporation has recently been estimated to spend $20 million a year on patent litigation.[41]

The high costs of litigation may discourage patent proprietors from bringing meritorious claims against infringers. They may also encourage firms to license patents of dubious merit rather than contest them in court. Pending legislation endeavors to make patent litigation less costly and complex through modification of the patent law doctrines of willful infringement and inequitable conduct. It would also call for an administrative opposition proceeding that, in some measure, could serve as a less expensive alternative to litigation.

International Harmonization

In our increasingly globalized, high-technology economy, patent protection in a single jurisdiction is often ineffective to protect the interests of inventors. As a result, U.S. inventors commonly seek patent protection abroad. Doing so can be a costly, time-consuming, and difficult process. There is no global patent system.

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[36] Steven J. Elleman, "Problems in Patent Litigation: Mandatory Mediation May Provide Settlement and Solutions," 12 *Ohio State Journal on Dispute Resolution* (1997), 759.

[37] Dee Gill, "Defending Your Rights: Protecting Intellectual Property is Expensive," *Wall Street Journal* (25 Sep. 2000), 6.

[38] Mark H. Webbink, "A New Paradigm for Intellectual Property Rights in Software," 2005 *Duke Law and Technology Review* (May 1, 2005), 15.

[39] *See* Sarah Lai Stirland, "Will Congress Stop High-Tech Trolls?," *National Journal* (Feb. 26, 2005), 612.

[40] "Microsoft Advocates for Patent Reform," *eWEEK* (March 10, 2005).

[41] Stirland, *supra*, at 613.

Inventors who desire intellectual property protection in a particular country must therefore take specific steps to procure a patent within that jurisdiction.[42]

Differences in national laws are among the difficulties faced by U.S. inventors seeking patent rights overseas. Although the world's patent laws have undergone considerable harmonization in recent years, several notable distinctions between U.S. patent law and those of our leading trading partners persist. Pending legislation would address some of these differences by modifying U.S. patent law in order to comply with international standards. Among these proposed reforms are adoption of a first-inventor-to-file priority system, a post-issuance opposition system, assignee filing, publication of all pending patent applications, and prior user rights; elimination of the best mode requirement; and encouragement for the adoption of a one-year grace period within the European Patent Convention and Japanese Patent Act.

Potential Abuses of Patent Speculators

Some commentators believe that the patent system too frequently attracts speculators who prefer to acquire and enforce patents rather than engage in research, development, manufacturing, or other socially productive activity.[43] Patent speculators are sometimes termed "trolls," after creatures from folklore that would emerge from under a bridge in order to waylay travelers.[44] The late Jerome C. Lemelson, a prolific inventor who owned hundreds of patents and launched numerous charges of patent infringement, has sometimes been mentioned in this context. The annual revenue of the Lemelson estate's patent licensing program has been reported as in excess of $1.5 billion.[45] But as explained by journalist Michael Ravnitsky, "critics charge that many Lemelson patents are so-called submarine patents, overly broad applications that took so long to issue or were so general in nature that their owners could unfairly claim broad infringement across entire industry sectors."[46] Of such patent ventures, patent attorney James Pooley observes:

> Of course there is nothing inherently wrong with charging someone rent to use your property, including intellectual property like patents. But it's useful to keep in mind — especially when listening to prattle about losing American jobs to foreign competition — that these patent mills produce no products. Their only output is paper, of a highly threatening sort.[47]

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[42] CRS Report RL31132, *Multinational Patent Acquisition and Enforcement: Public Policy Challenges and Opportunities for Innovative Firms*, by John R. Thomas.

[43] *See* Elizabeth D. Ferrill, "Patent Investment Trusts: Let's Build a Pit to Catch the Patent Trolls," 6 *North Carolina Journal of Law and Technology* (2005), 367.

[44] *See* Lorraine Woellert, "A Patent War Is Breaking Out on the Hill," *BusinessWeek* 45 (July 4, 2005).

[45] Nicholas Varchaver, "The Patent King," *Fortune* (May 14, 2001), 202.

[46] Michael Ravnitsky, "More Lemelson Suits," *The National Law Journal* (Dec. 17, 2001), B9.

[47] James Pooley, "Opinion: U.S. patent reform-a good invention," *Electronic Business* (1

(continued...)

Patent enforcement suits brought by patent speculators appear to present special concerns for manufacturers and service providers. If one manufacturer or service provider commences litigation against another, the defendant can often counter with its own claims of patent infringement against the plaintiff. Because patent speculators do not otherwise participate in the marketplace, however, they are immune to such counterclaims. This asymmetry in litigation positions reportedly reduces the bargaining power of manufacturers and service providers and exposes them to harassment.[48]

Observers hasten to note, however, that not every patent proprietor who does not commercialize the patented invention should properly be considered an opportunistic "troll." A nonmanufacturing patentee may lack the expertise or resources to produce a patented product, prefer to commit itself to further innovation, or otherwise have legitimate reasons for its behavior.[49] Universities and small biotechnology companies often fit into this category. Further, whether classified as a "troll" or not, each patent owner has presumptively fulfilled all of the relevant statutory requirements. Among these obligations is a thorough disclosure of a novel, nonobviousn invention to the public.[50]

Pending legislation would impact concerns over "trolling" by amendment to the patent statute's provision regarding injunctions, as well as allowing limitations upon so-called continuation practice at the USPTO.

The Role of Individuals, Universities and Small Entities

Entrepreneurs and small, innovative firms play a role in the technological advancement and economic growth of the United States.[51] Several studies commissioned by U.S. federal agencies have concluded that individuals and small entities constitute a significant source of innovative products and services.[52] Studies

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[47] (...continued)
Jan. 2000), 72.

[48] *See* Ronald J. Mann, "Do Patents Facilitate Financing in the Software Industry?," 83 *Texas Law Review* (2005), 961.

[49] *See* David G. Barker, "Troll or No Troll? Policing Patent Usage with An Open Post-Grant Review," 2005 *Duke Law and Technology Review* (Apr. 15, 2005), 11.

[50] 35 U.S.C. § 112.

[51] National Science Board, *Science and Engineering Indicators, 199*3 (Dec. 8, 1993), 185. *See also* CRS Report RL30216, *Small, High Tech Companies and Their Role in the Economy: Issues in the Reauthorization of the Small Business Innovation (SBIR) Program*, by Wendy H. Schacht.

[52] For example, the National Academy of Engineering concluded that "small high-tech companies play a critical and diverse role in creating new products and services, in developing new industries, and in driving technological change and growth in the U.S. economy." National Academy of Engineering, *Risk & Innovation: The Role and Importance of Small High-Tech Companies in the U.S. Economy* (Washington: National Academy Press, 1995), 37. This assessment was founded on the ability of small firms to develop markets
(continued...)

have also indicated that entrepreneurs and small, innovative firms rely more heavily upon the patent system than larger enterprises. Larger companies are said to possess alternative means for achieving a proprietary or property-like interest in a particular technology. For example, trade secrecy, ready access to markets, trademark rights, speed of development, and consumer goodwill may to some degree act as substitutes to the patent system.[53] However, individual inventors and small firms often do not have these mechanisms at their disposal. As a result, the patent system may enjoy heightened importance with respect to these enterprises.[54]

In recent years, universities have also become more full-fledged participants in the patent system. This trend has been attributed to the Bayh-Dole Act,[55] a federal statute that allowed universities and other government contractors to retain patent title to inventions developed with the benefit of federal funding.[56] In recent years there has reportedly "been a dramatic increase in academic institutions' investments in technology licensing activities."[57] This increase has been reflected in the growth in the number of patents held by universities, the number of universities with technology transfer offices, and the amount of patent-based licensing revenues that these offices have raised.[58]

The U.S. patent system have long acknowledged the role, and particular needs, of independent inventors, small firms, and universities. For example, the patent statute calls for each of these entities to receive a 50% discount on many USPTO fees.[59] As the USPTO is currently entirely funded by the fees it charges its users,[60]

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[52] (...continued)
rapidly, generate new goods and services, and offer diverse products. The study also concluded that small businesses were less risk adverse than larger, established corporations and were often better positioned to exploit market opportunities quickly.
A National Science Foundation report found that entrepreneurs and small firms are six times as effective as larger firms in utilizing research and development expenditures to generate new products. National Science Board, *Science and Engineering Indicators*, *1993*, (Dec. 8, 1993), 185. Anderson, Anne, "Small Businesses Make it Big in the SBIR Program," *New Technology Week* (June 6, 1998), p. 2.

[53] Sally Wyatt & Gilles Y. Bertin, *Multinationals and Industrial Property* 139 (Harvester 1988).

[54] J. Douglas Hawkins, "Importance and Access of International Patent Protection for the Independent Inventor," 3 *University of Baltimore Intellectual Property Journal* (1995), 145.

[55] P.L. 96-517, 94 Stat. 2311 (codified at 35 U.S.C. §§ 200-212).

[56] CRS Report RL32076, *The Bayh-Dole Act: Selected Issues in Patent Policy and the Commercialization of Technology*, by Wendy H. Schacht.

[57] Josh Lerner, "Patent Policy Innovations: A Clinical Examination," 53 *Vanderbilt Law Review* (2000), 1841.

[58] *See* Arti K. Rai & Rebecca S. Eisenberg, "Bayh-Dole Reform and the Progress of Biomedicine," 66 *Law and Contemporary Problems* (Winter/Spring 2003), 289.

[59] 35 U.S.C. § 41(g).

[60] CRS Report RS20906, *U.S. Patent and Trademark Office Appropriations Process: A Brief* (continued...)

this provision effectively calls for larger institutions to subsidize the patent expenditures of their smaller competitors.

Beyond potentially diminished financial resources vis-a-vis larger concerns, however, observers have disagreed over whether independent inventors, small firms, and universities have particular needs with respect to the patent system, and if so whether those needs should be reflected in patent law doctrines. With respect to the proposed system of "prior user rights,"[61] for example, some observers state that such rights would particularly benefit small entities, which may often lack a sophisticated knowledge of the patent system.[62] Others disagree, stating that smaller concerns rely heavily on the exclusivity of the patent right, and that the adoption of prior user rights would advantage large enterprises.[63] Similar debates have occurred with respect to other patent reform proposals, perhaps reflecting the fact that the community of independent inventors, small firms, and universities is itself a diverse one.

Provisions of pending legislation that appear to be of particular interest to independent inventors, universities, and small businesses include a shift to a first-inventor-to-file priority system, prior user rights, pre-issuance publication of all pending patent applications, and post-issuance oppositions.

Different Roles for Patents in Distinct Industries

To a large extent, the patent statute subjects all inventions to the same standards, regardless of the field in which those inventions arose. Whether the invention is an automobile engine, semiconductor, or a pharmaceutical, it is for the most part subject to the same patentability requirements, scope of rights, and term of protection. Both experience and economic research suggest that distinct industries experience the patent system in different ways, however.[64] As a result, it can be expected that

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[60] (...continued)
Explanation, by Wendy H. Schacht.

[61] Under a rule of "prior user rights," when a conflict exists between an issued patent and an earlier user of the patented technology, the validity of the patent is upheld but the prior user is exempted from infringement. *See* Pierre Jean Hubert, "The Prior User Right of H.R. 400: A Careful Balancing of Competing Interests," 14 *Santa Clara Computer and High Technology Law Journal* (1998), 189. Prior user rights are discussed further in this report below.

[62] *See* Gary L. Griswold & F. Andrew Ubel, "Prior User Rights — A Necessary Part of a First-to-File System," 26 *John Marshall Law Review* (1993), p. 567.

[63] *See* David H. Hollander, Jr., "The First Inventor Defense: A Limited Prior User Right Finds Its Way Into U.S. Patent Law," 30 *American Intellectual Property Law Association Quarterly Journal* (2002), 37 (noting the perception that prior user rights favor large, well-financed corporations).

[64] In particular, economic research suggests that different industries attach widely varying values to patents. For example, one study of the aircraft and semiconductor industries suggested that lead time and the strength of the learning curve were superior to patents in capturing the value of investments. In contrast, members of the drug and chemical industries attached a higher value to patents. Differences in the perception of the patent
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particular industries will react differently to the various patent reform proposals currently before Congress.

Although broad generalizations should be drawn with care, two industries widely perceived as viewing the patent system in different ways are the pharmaceutical and software sectors. Within the pharmaceutical industry, individual patents are perceived as critical to a business model that provides life-saving and life-enhancing medical innovations, but eventually allows members of the public access to medicines at low cost. In particular, often only a handful, and sometimes only one or two patents cover a particular drug product. Patents are also judged to be crucial to the pharmaceutical sector because of the relative ease of replicating the finished product. For example, while it is expensive, complicated, and time consuming to duplicate an airplane, it is relatively simple to perform a chemical analysis of a pill and reproduce it.[65]

In contrast to the pharmaceutical field, the nature of software development is such that innovations are typically cumulative and new products often embody numerous patentable inventions. This environment has led to what has been described as a

> poor match between patents and products in the [software] industry: it is difficult to patent an entire product in the software industry because any particular product is likely to include dozens if not hundreds of separate technological ideas.[66]

This situation may be augmented by the multiplicity of patents often associated with a finished computer product that utilizes the software. It is not uncommon for thousands of different patents (relating to hardware and software) to be embodied in one single computer. In addition, ownership of these patents may well be fractured among hundreds or thousands of different individuals and firms.

In summary, then, the patent laws provide a "one size fits all" system, where all inventions are subject to the same requirements of patentability and scope of protection, regardless of the technical field in which they arose. Innovators in different fields nonetheless have varying experiences with the patent system. These discrepancies, among others, lead to the expectation that distinct industries may react differently to the various patent reform proposals presently considered by Congress.

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[64] (...continued)
system have been attributed to the extent to which patents introduced significant duplication costs and times for competitors of the patentee. Richard C. Levin, Alvin K. Klevorick, Richard R. Nelson, and Sidney G. Winter, "Appropriating the Returns for Industrial Research and Development," Brookings Papers on Economic Activity, 1987, in *The Economics of Technical Change*, eds. Edwin Mansfield and Elizabeth Mansfield (Vermont, Edward Elgar Publishing Co., 1993), p. 254.

[65] Federic M. Scherer, "The Economics of Human Gene Patents", 77 *Academic Medicine* (Dec. 2002), p. 1350.

[66] Mann, *supra*, at 979.

Proposed Legislative Initiatives

Pending legislation proposes a diverse array of patent reforms. The remainder of this report identifies and reviews these proposals.

First Inventor to File

Pending legislation would alter the U.S. patent priority rule from the current "first-to-invent" principle to the "first-inventor-to-file" principle.[67] Within the patent law, the priority rule addresses the circumstance where two or more persons independently develop the identical or similar invention at approximately the same time. In such cases the patent law must establish a rule as to which of these inventors obtains entitlement to a patent.[68]

In the United States, when more than one patent application is filed claiming the same invention, the patent will be awarded to the applicant who was the first inventor in fact. This conclusion holds even if the first inventor was not the first person to file a patent application directed towards that invention.[69] Under this "first-to-invent" system,[70] the timing of real-world events, such as the date a chemist conceived of a new compound or a machinist constructed a new engine, is of significance.

In every patent-issuing nation except the United States, priority of invention is established by the earliest effective filing date of a patent application disclosing the claiming invention.[71] Stated differently, the inventor who first filed an application at the patent office is presumptively entitled to the patent. Whether or not the first applicant was actually the first individual to complete the invention in the field is irrelevant. This priority system follows the "first-inventor-to file" principle.

A simple example illustrates the distinction between these priority rules. Suppose that inventor A synthesizes a new chemical compound on August 1, 2005, and files a patent application on November 1, 2005 claiming that compound. Suppose further that inventor B independently invents the same compound on September 1, 2005, and files a patent application on October 1, 2005. Inventor A would be awarded the patent under the first-to-invent rule, while Inventor B would obtain the patent under the first-inventor-to-file principle.

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[67] H.R. 2795, § 3.

[68] *See* Roger E. Schechter & John R. Thomas, *Principles of Patent Law* § 1.2.5 (2d ed. 2004).

[69] In addition, the party that was the first to invent must not have abandoned, suppressed or concealed the invention. 35 U.S.C. § 102(g)(2).

[70] *See* Charles E. Gholz, "First-to-File or First-to-Invent?", 82 *Journal of the Patent and Trademark Office Society* (2000), p. 891.

[71] *See* Peter A. Jackman, "Adoption of a First-to-File System: A Proposal," 26 *University of Baltimore Law Review* (1997), 67.

Under the current U.S. first-to-invent rule, the majority of priority disputes in the United States are resolved via "interference" proceedings conducted at the USPTO.[72] An interference is a complex administrative proceeding that ordinarily results in the award of priority to one of its participants. These proceedings are not especially common. One estimate is that less than one-quarter of one percent of patents are subject to an interference.[73] This statistic may mislead, however, because the expense of interference cases may result in their use only for the most commercially significant inventions.

The patent community has witnessed an extensive and sometimes emotional debate on the relative merits of the first-to-invent and first-inventor-to-file principle. Supporters of the current first-to-invent principle in part assert that the first-inventor-to-file system would create inequities by sponsoring a "race to the Patent Office." They are also concerned that the first-to-file system would encourage premature and sketchy technological disclosures in hastily-filed patent applications.[74]

Supporters of the first-inventor-to-file principle in part assert that it provides a definite, readily determined and fixed date of priority of invention, which would lead to greater legal certainty within innovative industries. They also contend that the first-inventor-to-file principle would decrease the complexity, length and expense associated with current USPTO interference proceedings. Rather than being caught up in lengthy interference proceedings in an attempt to prove dates of inventive activity that occurred many years previously, they assert, inventors could continue to go about the process of innovation. Supporters also observe that informed U.S. firms already organize their affairs on a first-inventor-to-file basis in order to avoid forfeiture of patent rights abroad.[75]

The effect of a shift to the first-inventor-to-file rule upon individual inventors, small firms, and universities has been debated. Some observers state that such entities often possess fewer resources and wherewithal than their larger competitors, and thus are less able to prepare and file patent applications quickly. Others disagree, stating that smaller concerns are more nimble than larger ones and thus better able to submit applications promptly. They also point to the availability of provisional applications,[76] asserting that such applications allow small entities to secure priority rights readily without a significant expenditure of resources. A quantitative study of interference proceedings by Gerald Mossinghoff, a former Commissioner of the

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[72] 35 U.S.C. § 135.

[73] *See* Clifford A. Ulrich, "The Patent Systems Harmonization Act of 1992: Conformity at What Price?," 16 *New York Law School Journal of International and Comparative Law* (1996), p. 405.

[74] *See* Coe A. Bloomberg, "In Defense of the First-to-Invent Rule," 21 *American Intellectual Property Law Quarterly Journal* (1993), p. 255.

[75] *See* Bernarr A. Pravel, "Why the United States Should Adopt the First-to-File System for Patents," 22 *St. Mary's Law Journal* (1991), p. 797.

[76] 35 U.S.C. § 111(b).

USPTO, also suggested that the first-to-invent rule neither advantaged nor disadvantaged small entities vis-a-vis larger enterprises.[77]

The role of the U.S. Constitution is sometimes debated within the context of the patent priority principle. Article I, section 8, clause 8 of the Constitution provides Congress with the authority to award "inventors" with exclusive rights. Some observers suggest this language suggests, or possibly even mandates, the current first-to-invent system. Others conclude that because the first-inventor-to-file only awards patents to individuals who actually developed the invention themselves, rather than derived it from another, this priority system is permissible under the Constitution.[78]

In weighing the validity of this position, it should be noted that under well-established U.S. law, the first-inventor-in-fact does not always obtain entitlement to a patent. If, for example, a first-inventor-in-fact maintained his invention as a trade secret for many years before seeking patent protection, he may be judged to have "abandoned, suppressed or concealed" the invention.[79] In such a case a second-inventor-in-fact may be awarded a patent on that invention. Courts have reasoned that this statutory rule encourages individuals to disclose their inventions to the public promptly, or give way to an inventor who in fact does so.[80] As the first-inventor-to-file rule acts in a similar fashion to this longstanding patent law principle, conflict between this rule and the Constitution appears unlikely.

Notably, a first-inventor-to-file priority rule does not permit one individual to copy another's invention and then, by virtue of being the first to file a patent application, be entitled to a patent. All patent applicants must have originated the invention themselves, rather than derived it from another.[81] In order to police this requirement, H.R. 2795 provides for "inventor's rights contests" that would allow the USPTO to determine which applicant is entitled to a patent on a particular invention.[82]

Grace Period

Pending legislation would also impact the existing one-year "grace period" enjoyed by U.S. inventors. Current U.S. patent law essentially provides inventors with a one-year period to decide whether patent protection is desirable, and, if so, to prepare an application. Specified activities that occur before the "critical date" — patent parlance for the day one year before the application was filed — will prevent

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[77] Gerald J. Mossinghoff, "The U.S. First-to-Invent System Has Provided No Advantage to Small Entities," 84 *Journal of the Patent and Trademark Office Society* (2002), p. 425.

[78] *See generally* Charles R.B. Marcedo, "First-to-File: Is American Adoption of the International Standard in Patent Law Worth the Price?," 18 *American Intellectual Property Law Association Quarterly Journal* (1990), p. 193.

[79] 35 U.S.C. § 102(g)(2).

[80] *See Del Mar Engineering Labs. v. United States*, 524 F.2d 1178 (Ct. Cl. 1975).

[81] 35 U.S.C. § 101.

[82] H.R. 2795, § 3(i).

a patent from issuing.[83] If, for example, an entrepreneur first discloses an invention by publishing an article in a scientific journal, she knows that she has one year from the publication date in which to file a patent application. Importantly, uses, sales, and other technical disclosures by third parties will also start the one-year clock running. As a result, inventors have a broader range of concerns than merely their own behavior.[84]

In contrast, many other patent-granting states provide more limited grace periods, or no grace periods at all. In Europe, any sales or publication of an invention anywhere in the world prior to the filing date defeats the patentability of an invention.[85] The Japanese patent system includes a six-month grace period tied only to the activities of the inventor.[86] Under the patent law of Japan, any disclosures of an invention made by a third party even one day before the filing date will prevent the issuance of a patent.

The proposed legislation would make two changes to U.S. patent law. First, the one-year grace period would apply only to the inventor's own activities. Third party activity that occurred even one day before the filing date would constitute prior art and potentially be patent-defeating. This rule represents a change from current law, under which a patent applicant may possibly "antedate" prior art by showing that she invented the subject matter of the application prior to the date of the third party reference.[87] This change is consistent with the proposed shift to a first-inventor-to-file priority rule from a first-to-invent system.

Second, the proposed legislation would include a provision that might encourage adoption of a one-year grace period for inventor activities in Europe and Japan. An understanding of this proposal requires some background information on the international priority system established by the Paris Convention.[88] The international priority system allows an inventor to file a patent application in one Paris Convention signatory state, which is usually the inventor's home country. If the inventor subsequently files patent applications in any other Paris Convention signatory state within the next 12 months, overseas patent-granting authorities will treat the application as if it were filed on the first filing date. Critically, information that enters the public domain between the priority date and subsequent filing dates does not prejudice the later applications. Paris Convention priority allows U.S. inventors to preserve their original USPTO filing dates as they make arrangements to file patent applications overseas.[89]

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[83] 35 U.S.C. § 102(b).

[84] Schechter & Thomas, *supra*, at § 4.3.1.

[85] European Patent Convention, Article 54(2).

[86] Japanese Patent Act, Article 29(1).

[87] 35 U.S.C. § 102(a).

[88] Convention of Paris for the Protection of Industrial Property, 13 U.S.T. 25 (1962).

[89] *See* G.H.C. Bodenhausen, *Guide to the Paris Convention for the Protection of Industrial Property* (United International Bureau for the Protection of Intellectual Property, Geneva,

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Suppose, for example, that an inventor files a patent application at the USPTO on October 1, 2005. The inventor then files a patent application claiming the same invention in the Japanese Patent Office on September 1, 2006. As part of his Japanese application, the inventor informs the Japanese Patent Office of the earlier U.S. application. Because Japan has acceded to the Paris Convention, the Japanese Patent Office will treat that inventor's application as if it had been filed on October 1, 2005. As a result, information that entered the public domain after the U.S. filing date would not prejudice the inventor's Japanese application. A journal article published on January 1, 2006, for example, would not limit the opportunity of the inventor to obtain a Japanese patent.

The U.S. patent statute currently limits the usefulness of the Paris Convention priority date for foreign inventors seeking U.S. patent rights. Section 119 of the Patent Act states that:

> no patent shall be granted on any application for patent for an invention which had been patented or described in a printed publication in any country more than one year before the date of the actual filing of the application in this country, or which had been in public use or on sale in this country more than one year prior to such filing.[90]

The effect of this language is that the one-year grace period is measured not from the Paris Convention international priority date, but the actual U.S. filing date.

This limitation may discourage U.S. trading partners from adopting a grace period analogous to that of U.S. law. Consider, for example, a Japanese inventor who publishes an article in a scientific journal describing his new invention on August 1, 2004. Consistent with Japanese patent law, he then files a patent application at the Japanese Patent Office six months later, on February 1, 2005. Then, in accordance with the Paris Convention, he files an application at the USPTO on February 1, 2006.

Under these circumstances, the U.S. patent application should be denied, even though the Japanese inventor appeared to comply with all legal formalities. Because the U.S. patent statute compels the USPTO to assess the grace period as ending as the actual U.S. filing date in 2006, rather than the Paris Convention priority date in 2005, the U.S. patent is barred from issuance. This state of affairs may give pause to nations considering adopting a U.S.-style grace period. Foreign applicants who rely upon grace periods within their own national systems may be put in a position of forfeiture of their U.S. patent rights.

Apparently aware of this concern, pending legislation potentially changes the date the grace period closes from the actual U.S. filing date to the Paris Convention priority date — provided that Europe and Japan adopt laws analogous to that of proposed U.S. law. In the language of H.R. 2795:

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[89] (...continued)
Switzerland 1968).

[90] 35 U.S.C. § 119(a).

> Before the date, if ever, that the Director of the [USPTO] publishes a notice ... declaring that both the European Patent Convention and the patent laws of Japan afford inventors seeking patents a 1-year period prior to the effective filing date of a claimed invention during which disclosures made by the inventor or by others who obtained the subject matter disclosed directly or indirectly from the inventor do not constitute prior art, the term "effective filing date" as used in section 102(a)(1)(A) of title 35, United States Code, shall be construed by disregarding any right of priority except that provided under section 119(e) of title 35, United States Code.[91]

Should the USPTO Director publish a notice in keeping with this provision, then foreign inventors would be able to rely upon their domestic grace periods and maintain their ability to obtain patents in the United States.

Elimination of Sections 102(c), (d) and (f)

Pending legislation would eliminate three provisions of the Patent Act, paragraphs (c), (d), and (f) of Section 102. Section 102(c) does not allow an applicant to obtain a patent when he "has abandoned the invention." This statute does not refer to disposal of the invention itself, however, but instead to the intentional surrender of an invention *to the public*. Older Supreme Court opinions instruct that abandonment may occur where an inventor expressly dedicates it to the public, through a deliberate relinquishment or conduct evidencing an intent not to pursue patent protection.[92] The circumstances must be such that others could reasonably rely upon the inventor's renunciation.[93] Perhaps because few individuals expressly cede their patentable inventions to the public without seeking compensation, there are few modern judicial opinions that consider 35 U.S.C. § 102(c) in any meaningful way. In addition, the generally applicable principle of equitable estoppel may apparently be used to obtain the same result.[94]

Like section 102(c), section 102(d) of the Patent Act is reportedly little-used.[95] 35 U.S.C. 102(d) bars a U.S. patent when (1) an inventor files a foreign patent application more than twelve months before filing the U.S. application, and (2) a foreign patent results from that application prior to the U.S. filing date. Suppose that an inventor files an application at a foreign patent office on May 25, 2004. The foreign application matures into a granted foreign patent on August 1, 2005. If the inventor has not filed his patent application at the USPTO as of August 1, 2005, the date of the foreign patent grant, any patent application that the inventor subsequently filed in the United States would be defeated.

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[91] H.R. 2795, § 11(h).

[92] *See* Beedle v. Bennett, 122 U.S. 71 (1887).

[93] *See* Mendenhall v. Astec Indus., Inc., 13 USPQ2d 1913, 1937 (E.D. Tenn.1988), *aff'd*, 887 F.2d 1094 (Fed. Cir. 1989).

[94] *See generally* A.C. Auckerman & Co. v. R.L. Chaides.Construction Co., 960 F.2d 1020 (Fed. Cir. 1992).

[95] Schechter & Thomas, *supra*, at § 4.3.8.

The policy basis for 35 U.S.C. § 102(d) is to encourage the prompt filing of patent applications in the United States. As the Patent Office Commissioner explained in 1870:

> The intention of [C]ongress obviously was to obtain for this country the free use of the inventions of foreigners as soon as they became free abroad. This is indicated by the use of the phrase, 'first patented, or caused to be patented, in a foreign country,' for it was presumable that American citizens would obtain their first patent here, while a foreigner would first patent his invention in his own country. The statute was designed to prevent a foreigner from spending his time and capital in the development of an invention in his own country, and then coming to this country to enjoy a further monopoly, when the invention had become free at home. The result of such a course would be that while the foreign country was developing the invention and enjoying its benefits, its use could be interdicted here; while, if the term of the monopoly could be further extended here, the market could be controlled long after the foreign nation was prepared to flood this country with the unpatented products of the patented process.[96]

Section 102(d) has been subject to critical commentary. Because inventors may choose to file a patent application only in the United States, the policy goal of assuring that the U.S. market will become patent-free contemporaneously with foreign markets may not be well-served by this provision. In addition, 35 U.S.C. § 102(d) effectively acts against foreign, rather than U.S.-based inventors, as domestic inventors ordinarily file at the USPTO first before seeking rights overseas. Some commentators have suggested that 35 U.S.C. § 102(d) violates the spirit, if not the letter, of U.S. international treaty obligations, which generally impose an obligation of national treatment with respect to intellectual property matters.[97]

Finally, H.R. 2795 would also eliminate current 35 U.S.C. § 102(f), which states that a person may obtain a patent unless "he did not himself invent the subject matter sought to be patented." As this requirement that only an actual inventor may obtain a patent is also stated by 35 U.S.C. § 101,[98] this proposed amendment does not appear to have any substantive impact upon the patent law.

Assignee Filing

Under current U.S. law, a patent application must be filed by the inventor — that is to say, the natural person or persons who developed the invention.[99] This rule applies even where the invention was developed by individuals in their capacity as employees. Even though rights to the invention have usually been contractually assigned to an employer, for example, the actual inventor, rather than the employer, must be the one that applies for the patent. Section 118 of the Patent Act allows a

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[96] Bate Refrigerating Co. v. Sulzberger, 157 U.S. 1, 27 (1895) (quoting Ex parte Mushet, 1870 Comm'r Dec. 106, 108 (1870)).

[97] *See* Donald S. Chisum, "Foreign Activity: Its Effect on Patentability under United States Law," 11 *International Review of Industrial Property & Copyright Law* (1980), 26.

[98] *See* Schechter & Thomas, *supra*, at § 4.4.4.

[99] 35 U.S.C. § 111.

few exceptions to this general rule. If an inventor cannot be located, or refuses to perform his contractual obligation to assign an invention to his employer, then the employer may file in place of the inventor.[100]

H.R. 2795 would instead stipulate that a "person to whom the inventor has assigned or is under an obligation to assign the invention may make an application for patent."[101] Individuals who otherwise make a showing of a "sufficient proprietary interest in the matter" may also apply for a patent on behalf of the inventor upon a sufficient show of proof of the pertinent facts. Under the proposed legislation, if the USPTO "Director grants a patent on an application filed under this section by a person other than the inventor, the patent shall be granted to the real party in interest and upon such notice to the inventor as the Director considers to be sufficient."

Legal reforms allowing assignee filing of patent applications have been discussed for many years. A 1966 Report of the President's Commission on the Patent System recommended this change as a way to simplify formalities of application filing and of avoiding the delays caused by the need to identify and obtain signatures from each inventor.[102] The 1992 Advisory Commission on Patent Law Reform was also in favor of this change. The 1992 Commission observed that the United States was "the only country which does not permit the assignee of an invention to file a patent application in its own name."[103] In the opinion of the 1992 Commission, assignee filing would appropriately accompany a U.S. shift to a first-inventor-to-file priority system, as the reduction of formalities would allow innovative enterprises to more promptly file patent applications.

The 1992 Commission also reviewed potential undesirable aspects of assignee filing. The Commission noted that patent applications filed by assignees may lack the actual inventor's personal guarantee that the application was properly filed. In addition, assignee filing might derogate the right of natural persons to their inventions. In the opinion of the Commission, however, the advantages of assignee filing outweighed the disadvantages.[104]

Elimination of the Best Mode Requirement

H.R. 2795 would eliminate U.S. patent law's best mode requirement. Currently, inventors are required to "set forth the best mode contemplated by the inventor of carrying out his invention." [105] Failure to disclose the best mode known to the inventor is a ground for invalidating an issued patent. The courts have established

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[100] 35 U.S.C. § 118.

[101] H.R. 2795, § 4(c).

[102] President's Commission on the Patent System, *"To Promote the Progress of . . . Useful Arts" in an Age of Exploding Technology* (1966).

[103] Advisory Commission on Patent Reform, *A Report to the Secretary of Commerce* (Aug. 1992), 179.

[104] *Ibid.*

[105] 35 U.S.C. § 112.

a two-part standard for analyzing whether an inventor disclosed her best mode in a particular patent. The first inquiry was whether the inventor knew of a way of practicing the claimed invention that he considered superior to any other. If so, then the patent instrument must identify, and disclose sufficient information to enable persons of skill in the art to practice that best mode.[106]

Proponents of the best mode requirement have asserted that it allows the public to receive the most advantageous implementation of the technology known to the inventor. This disclosure becomes part of the patent literature and may be freely reviewed by those who wish to design around the patented invention. Members of the public are also said to be better able to compete with the patentee on equal footing after the patent expires.[107]

The best mode requirement has encountered severe criticism in recent years, however.[108] For example, a 1992 Presidential Commission recommended that Congress eliminate the best mode requirement. The Commission reasoned that patents are also statutorily required to disclose "the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art . . . to make and use the same."[109] This "enablement" requirement was believed to provide sufficient information to achieve the patent law's policy goals.[110]

The Commission further stated that the best mode requirement leads to increases in the costs and complexity of patent litigation. As the Commission explained:

> The disturbing rise in the number of best mode challenges over the past 20 years may serve as an indicator that the best mode defense is being used primarily as a procedural tactic. A party currently can assert failure to satisfy the best mode requirement without any significant burden. This assertion also entitles the party to seek discovery on the "subjective beliefs" of the inventors prior to the filing date of the patent application. This broad authority provides ample opportunity for discovery abuse. Given the fluidity by which the requirement is evaluated (e.g., even accidental failure to disclose any superior element, setting, or step can negate the validity of the patent), and the wide ranging opportunities for discovery, it is almost certain that a best mode challenge will survive at least initial judicial scrutiny.[111]

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[106] *See, e.g., Chemcast Corp. v. Arco Industries Corp.* 913 F.2d 923 (Fed. Cir. 1990).

[107] *See* Jerry R. Selinger, "In Defense of the 'Best Mode': Preserving the Benefit of the Bargain for the Public, 43 *Catholic University Law Review* (1994), 1071.

[108] *See, e.g.,* Steven B. Walmsley, "Best Mode: A Plea to Repair or Sacrifice This Broken Requirement of United States Patent Law," 9 *Michigan Telecommunications and Technology Law Review* (2002), p. 125.

[109] 35 U.S.C. § 101.

[110] 1992 Advisory Commission Report, *supra,* at 102-03.

[111] *Ibid* at 101.

The Commission further reasoned that the best mode at the time of filing is unlikely to remain the best mode when the patent expires many years later.[112] Because many foreign patent laws include no analog to the best mode requirement, inventors based overseas have also questioned the desirability of the best mode requirement in U.S. law.

Inequitable Conduct

The administrative process of obtaining a patent from the USPTO has traditionally been conducted as an *ex parte* procedure. Stated differently, patent prosecution involves only the applicant and the USPTO. Members of the public, and in particular the patent applicant's marketplace competitors, do not participate in patent acquisition procedures.[113] As a result, the patent system relies to a great extent upon applicant observance of a duty of candor and truthfulness towards the USPTO.

An applicant's obligation to proceed in good faith may be undermined, however, by the great incentive applicants possess not to disclose, or to misrepresent, information that might deleteriously impact their prospective patent rights. The patent law therefore penalizes those who stray from honest and forthright dealings with the USPTO. Under the doctrine of "inequitable conduct," if an applicant intentionally misrepresents a material fact or fails to disclose material information, then the resulting patent will be declared unenforceable.[114] Two elements must exist before a court will decide that the applicant has engaged in inequitable conduct. First, the patentee must have misrepresented or failed to disclose material information to the USPTO in the prosecution of the patent.[115] Second, such nondisclosure or misrepresentation must have been intentional.[116]

During patent infringement litigation, an accused infringer has the option of asserting that the plaintiff's patent is unenforceable because it was procured through inequitable conduct. Concerns have arisen that charges of inequitable conduct have become routine in patent cases. As one commentator explains:

> The strategic and technical advantages that the inequitable conduct defense offers the accused infringer make it almost too attractive to ignore. In addition to the potential effect on the outcome of the litigation, injecting the inequitable conduct issue into patent litigation wreaks havoc in the patentee's camp. The inequitable conduct defense places the patentee on the defensive, subjects the

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[112] *Ibid*. at 102-03.

[113] 35 U.S.C. § 122(a) (stating general rule that "applications for patents shall be kept in confidence by the Patent and Trademark Office and no information concerning the same given without authority of the applicant . . . .").

[114] Glaverbel Societe Anonyme v. Northlake Mktg. & Supply Inc., 45 F.3d 1550 (Fed. Cir. 1995).

[115] Heidelberger Druckmaschinen AG v. Hantscho Comm'l Prods., Inc., 21 F.3d 1068 (Fed. Cir. 1993).

[116] Jazz Photo Corp. v. U.S. Int'l Trade Comm'n, 264 F.3d 1094 (Fed. Cir. 2001).

> motives and conduct of the patentee's personnel to intense scrutiny, and provides an avenue for discovery of attorney-client and work product documents . . . .[117]

As the Federal Circuit put it, "the habit of charging inequitable conduct in almost every major patent case has become an absolute plague."[118] Other observers believe that because inequitable conduct requires an analysis of the knowledge and intentions of the patent applicants, the doctrine may also be contributing disproportionately to the time and expense of patent litigation.[119]

Due to these perceived burdens upon patent litigation, some commentators have proposed that the inequitable conduct defense be eliminated.[120] Others believe that inequitable conduct is necessary to ensure the proper functioning of the patent system. As the Advisory Commission on Patent Law Reform explained in its 1992 report:

> Some mechanism to ensure fair dealing between the patentee, public, and the Federal Government has been part of the patent system for over 200 years. In its modern form, the unenforceability defense provides a necessary incentive for patent applicants to engage in fair and open dealing with the [USPTO] during the ex parte prosecution of patent applications, by imposing the penalty of forfeiture of patent rights for failure to so deal. The defense is also considered to be an essential safeguard against truly fraudulent conduct before the [USPTO]. Finally, the defense provides a means for encouraging complete disclosure of information relevant to a particular patent application. . . . . Thus, from a policy perspective, the defense of unenforceability based upon inequitable conduct is desirable and should be retained.[121]

Proposed legislation would retain the concept of an inequitable conduct defense, but introduce a number of substantive and procedural changes to the doctrine. In broad overview, H.R. 2795 would provide statutory authorization for the USPTO Director to issue regulations governing applicants' duty of candor.[122] Although the USPTO has for many years issued such regulations,[123] commentators have questioned the authority of the USPTO to do so under current law.[124]

H.R. 2795 would also provide the USPTO with authority to prosecute violations of the inequitable conduct doctrine. Although that agency previously performed this

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[117] John F. Lynch, "An Argument for Eliminating the Defense of Patent Unenforceability Based on Inequitable Conduct," 16 *American Intellectual Property Law Association Quarterly Journal* (1988), 7.

[118] Burlington Indus., Inc. v. Dayco Corp., 849 F.2d 1418 (Fed. Cir. 1988).

[119] *See, e.g.,* Scott D. Anderson, "Inequitable Conduct: Persistent Problems and Recommended Resolutions," 82 *Marquette Law Review* (1999), 845.

[120] Lynch, *supra*, at 7.

[121] 1992 Advisory Commission, *supra*, at 114.

[122] H.R. 2795, § 5(a).

[123] 37 C.F.R. § 1.56.

[124] R. Carl Moy, "The Effect of New Rule 56 on the Law of Inequitable Conduct," 74 *Journal of the Patent and Trademark Office Society* (1992), 391.

function without express statutory authorization, the USPTO suspended that activity in 1992.[125] Under H.R. 2795, the USPTO would be obligated to establish a "special office with authority to investigate possible violations of the duty of candor and good faith." The USPTO would be granted subpoena power and be able to conduct hearings in pursuit of these investigations. The USPTO would also be able to penalize misconduct through substantial civil fines.

In addition, H.R. 2795 would limit the circumstances under which the defense of inequitable conduct could be raised before the courts. In broad outline, under H.R. 2795 if a court determines an issue of possible misconduct, then the court is directed to refer the matter to the USPTO. Within judicial infringement proceedings, issues of inequitable conduct could only arise after the court grants a motion to amend the pleadings. Such a motion would have to describe the relevant facts in detail and could not be granted until the court has previously entered a judgment that at least one of the asserted patent claims is invalid.

H.R. 2795 would also introduce a substantive change to the law of inequitable conduct. Under this legislation, a finding of inequitable conduct is appropriate only in circumstances when the USPTO examiner relied upon the alleged misconduct. In particular, the charge of inequitable conduct cannot be sustained unless the USPTO "would not have issued the invalidated claim, acting reasonably, in the absence of the misconduct," or "based upon the prosecution history as a whole objectively considered, would have done so based upon in whole or in part on account of the misconduct."[126]

Publication of Pending Applications

Until recent years, the U.S. patent system maintained pending patent applications in secrecy. The first moment that the public would become aware of the existence of a U.S. patent application was the day the USPTO formally allowed it to issue as a granted patent. This regime advantaged patent applicants because it allowed them to understand exactly what the scope of any allowed claims might be prior to disclosing an invention. Thus, if the applicant was able to maintain the invention that was subject to a patent application as a trade secret, then he could choose between obtaining the allowed patent claims and trade secret status. In addition, because the invention was not disclosed prior to the award of formal patent rights, unscrupulous competitors were discouraged from copying the invention.

However, this secrecy regime has been perceived as imposing costs as well. Others might well engage in duplicative research efforts during the pendency of patent applications, unaware that an earlier inventor had already staked a claim to that technology. This arrangement also allowed inventors to commence infringement

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[125] *See* Harry F. Manbeck, Jr., "The Evolution and Issue of New Rule 56," 20 *American Intellectual Property Law Association Quarterly Journal* (1992), 136.

[126] H.R. 2795, § 5

litigation on the very day a patent issued, without any degree of notice to other members of the technological community.[127]

Industry in the United States possessed one mechanism for identifying pending U.S. patent applications. Most foreign patent regimes publish all pending patent applications approximately 18 months after they have been filed.[128] As a result, savvy firms in the United States could review pending applications filed before foreign patent offices, and make an educated guess as to the existence of a corresponding U.S. application. This effort was necessarily inexact, however, particularly as some inventors either lacked the resources, or made the strategic decision, not to obtain patent rights outside the United States.

In enacting the American Inventors Protection Act of 1999, Congress for the first time introduced the concept of pre-grant publication into U.S. law. Since November 29, 2000, U.S. patent applications have been published 18 months from the date of filing, with some exceptions. The most significant of these exceptions applies where the inventor represents that he will not seek patent protection abroad. In particular, if an applicant certifies that the invention disclosed in the U.S. application will not be the subject of a patent application in another country that requires publication of applications 18 months after filing, then the USPTO will not publish the application.[129] As a result, inventors who do not wish to seek foreign patent rights retain the possibility of avoiding pre-grant publication.

Proposed legislation would further modify the U.S. pre-grant publication system by effectively calling for all pending applications to be published approximately 18 months after they are filed. In particular, H.R. 2795 would eliminate the possibility of opting out of pre-grant publication by certifying that a patent will be sought only in the United States.[130]

Pre-Issuance Submissions

Pending legislation would expand the ability of members of the public to submit information to the USPTO that is pertinent to pending applications. Under current law, interested individuals may enter a protest against a patent application. The protest must specifically identify the application and be served upon the applicant. The protest must also include a copy and, if necessary, an English translation, of any patent, publication or other information relied upon. The protester also must explain the relevance of each item.[131]

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[127] Schechter & Thomas, *supra*, at § 7.2.6.

[128] John C. Todaro, "Potential Upcoming Changes in U.S. Patent Laws: the Publication of Patent Applications," 36 *IDEA: Journal of Law and Technology* (1996), 309.

[129] 35 U.S.C. § 122(b).

[130] H.R. 2795, § 9(a).

[131] 37 C.F.R. § 1.291.

Protest proceedings have traditionally played a small role in U.S. patent practice. Until Congress enacted the American Inventors Protection Act of 1999, the USPTO maintained applications in secrecy. Therefore, the circumstances in which members of the public would learn of the precise contents of a pending patent application were relatively limited. With the USPTO commencing publication of some pending patent applications, protests would seem far more likely. Seemingly aware of this possibility, the 1999 Act provided that the USPTO shall "ensure that no protest or other form of pre-issuance opposition . . . may be initiated after publication of the application without the express written consent of the applicant."[132] Of course, the effect of this provision is to eliminate the possibility of protest in exactly that class of cases where the public is most likely to learn of the contents of a pending application.

Through rulemaking, the USPTO has nonetheless established a limited mechanism for members of the public to submit information they believe is pertinent to a pending, published application. The submitted information must consist of either a patent or printed publication, and it must be submitted within two months of the date the USPTO published the pending application. Nondocumentary information that may be relevant to the patentability determination, such as sales or public use of the invention, will not be considered.[133] In addition, because Congress stipulated that no protest or pre-grant opposition may occur absent the consent of the patent holder, the USPTO has explained that it will not accept *comments* or *explanations* concerning the submitted patents or printed publications. If such comments are attached, USPTO staff will redact them before the submitted documents are forwarded to the examiner.[134]

Pending legislation would augment the possibility for pre-issuance submissions. Under H.R. 2795, any person would be able to submit patent documents and other printed publications to the USPTO for review. Such prior art must be submitted within the later date of either (1) the date the USPTO issues a notice of allowance to the patent applicant; or (2) either six months after the date of pre-grant publication of the application, or the date of the rejection of any claim by the USPTO examiner. Such a submission must include "a concise description of the asserted relevance of each submitted document."[135]

Most observers agree that ideally, the USPTO would have access to all pertinent information when making patentability determinations. A more expansive pre-issuance submission policy may allow members of the public to disclose relevant patents and other documents that the USPTO's own searchers may not have revealed, thereby leading to more accurate USPTO decision making. On the other hand, lengthy pre-issuance submissions may merely be repetitive of the USPTO's own search results, but still require extensive periods of examiner review that might

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[132] 35 U.S.C. § 122(c).

[133] 37 C.F.R. § 1.99.

[134] U.S. Dept. of Commerce, U.S. Patent & Trademark Off., Manual of Patent Examining Procedure § 1134.01 (8th ed. May 2004).

[135] H.R. 2795, § 10.

ultimately delay examination. The proposal of H.R. 2795 apparently attempts to balance these concerns by expanding existing opportunities for post-publication submissions, but limiting the timing and nature of those submissions so as to prevent undue burdens upon the USPTO and patent applicants.

Continuation Applications

Pending legislation would allow the USPTO Director to limit the availability of so-called continuation applications via regulation. Continuation applications essentially allow inventors to re-file previously rejected patent applications in order to pursue further prosecution with a USPTO examiner.[136] The filing of a patent application effectively allows two formal communications, termed "Office Actions," with a USPTO examiner. Agreement often cannot be reached by this point, however, leaving the applicant with only the alternatives of abandonment of patent protection or the filing of an appeal. By filing a continuation application, an applicant essentially purchases additional time for dialogue between the applicant and examiner.

The use of continuation applications is commonplace in U.S. patent practice. Applicants not infrequently file one or more continuing applications based upon an earlier filed "patent" application. Many patents have issued based upon chains of continuation applications involving a parent, grandparent, and even more remote predecessors.

Continuation applications are said to allow applicants to more accurately claim a previously disclosed invention without the necessity of an appeal.[137] Some commentators believe they are subject to abuse, however. Under this view, continuation practice introduces delay and uncertainty into the patent acquisition process. In particular, applicants are said to use a chain of continuation applications in order to gain advantages over competitors by waiting to see what product the competitor will make, and then drafting patent claims that cover that product. Continuation practice is also said to have led to long delays in the issuance of a patent in order to surprise an established industry, a process known as "submarine patenting."[138]

At present time, two features of the Patent Act have been identified as mitigating against abuse of continuation applications. The first feature, discussed above, is the pre-grant publication of pending patent applications.[139] This rule allows interested members of the public to be notified that the application has been filed at the USPTO prior to the formal bestowal of exclusive patent rights. Under current

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[136] 35 U.S.C. § 120.

[137] Schechter & Thomas, *supra*, at § 7.2.4.

[138] Mark A. Lemley & Kimberly A. Moore, "Ending Abuse of Patent Continuations," 84 *Boston University Law Review* (2004), 63.

[139] 35 U.S.C. § 122(b)(1).

law, however, exceptions exist to this rule, and as a result some applications are not published prior to their issuance.[140]

The second feature is the term of the patent, which as of June 8, 1995, was set to the duration of twenty years from the date of filing.[141] The twenty-year term is measured from the filing date of the earliest in the chain of continuation applications. Inventors who file a series of continuation applications thereby shorten their term of eventual patent protection. In some circumstances, however, even a patent with a diminished term may remain of competitive significance. And again there is an exception to the twenty-year patent term based upon the filing date: Applications filed prior to June 8, 1995, may instead enjoy a term of seventeen years set from the date of issuance.

H.R. 2795 would allow the USPTO Director to issue regulations that would limit the ability of inventors to file continuation applications. The bill would further stipulate that "[n]o such regulation may delay applicants an adequate opportunity to obtain claims for any invention disclosed in an application for patent."[142]

Prior User Rights

Pending legislation would expand the applicability of a "first inventor defense" established by the American Inventors Protection Act of 1999. As currently found at 35 U.S.C. § 273, an earlier inventor of a "method of doing or conducting business" that was later patented by another may claim a defense to patent infringement in certain circumstances. H.R. 2795 would broaden this defense by allowing it to apply with respect to any patented subject matter.

The impetus for this provision lies in the rather complex relationship between the law of trade secrets and the patent system. Trade secrecy protects individuals from misappropriation of valuable information that is useful in commerce. One reason an inventor might maintain the invention as a trade secret rather than seek patent protection is that the subject matter of the invention may not be regarded as patentable. Such inventions as customer lists or data compilations have traditionally been regarded as amenable to trade secret protection but not to patenting.[143] Inventors might also maintain trade secret protection due to ignorance of the patent system or because they believe they can keep their invention as a secret longer than the period of exclusivity granted through the patent system.[144]

The patent law does not favor trade secret holders, however. Well-established patent law provides that an inventor who makes a secret, commercial use of an

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[140] 35 U.S.C. § 122(b)(2).

[141] 35 U.S.C. § 154(a)(2).

[142] H.R. 2795, § 8.

[143] Restatement of Unfair Competition § 39.

[144] David D. Friedman, "Some Economics of Trade Secret Law," 5 *Journal of Economic Perspectives* (1991), 61, 64.

invention for more than one year prior to filing a patent application at the USPTO forfeits his own right to a patent.[145] This policy is based principally upon the desire to maintain the integrity of the statutorily prescribed patent term. The patent law grants patents a term of twenty years, commencing from the date a patent application is filed.[146] If the trade secret holder could make commercial use of an invention for many years before choosing to file a patent application, he could disrupt this regime by delaying the expiration date of his patent.

On the other hand, settled patent law principles established that prior secret uses would not defeat the patents of later inventors.[147] If an earlier inventor made secret commercial use of an invention, and another person independently invented the same technology later and obtained patent protection, then the trade secret holder could face liability for patent infringement. This policy is based upon the reasoning that once issued, published patent instruments fully inform the public about the invention, while trade secrets do not. As between a subsequent inventor who patented the invention, and thus had disclosed the invention to the public, and an earlier trade secret holder who had not, the law favored the patent holder.

An example may clarify this rather complex legal situation. Suppose that Inventor A develops and makes commercial use of a new manufacturing process. Inventor A chooses not to obtain patent protection, but rather maintains that process as a trade secret. Many years later, Inventor B independently develops the same manufacturing process and promptly files a patent application claiming that invention. In such circumstances, Inventor A's earlier, trade secret use does not prevent Inventor B from procuring a patent. Furthermore, if the USPTO approves the patent application, then Inventor A faces infringement liability should Inventor B file suit against him.

The American Inventors Protection Act of 1999 somewhat modified this principle. That statute in part provided an infringement defense for an earlier inventor of a "method of doing or conducting business" that was later patented by another. By limiting this defense to patented methods of doing business, Congress responded to the 1998 Federal Circuit opinion in *State Street Bank and Trust Co. v. Signature Financial Group*.[148] That judicial opinion recognized that business methods could be subject to patenting, potentially exposing individuals who had maintained business methods as trade secrets to liability for patent infringement.

Again, an example may aid understanding of the first inventor defense. Suppose that Inventor X develops and exploits commercially a new method of doing business. Inventor X maintains his business method as a trade secret. Many years later, Inventor Y independently develops the same business method and promptly files a patent application claiming that invention. Even following the enactment of the

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[145] 35 U.S.C. § 102(b). *See* Metallizing Engineering Co. v. Kenyon Bearing & Auto Parts, 153 F.2d 516 (2d Cir. 1946).

[146] 35 U.S.C. § 154.

[147] W.L. Gore & Associates. v. Garlock, Inc., 721 F.2d 1540 (Fed. Cir. 1983).

[148] 149 F.3d 1368 (Fed. Cir. 1998).

American Inventors Protection Act, Inventor X's earlier, trade secret use would not prevent Inventor Y from procuring a patent. However, should the USPTO approve Inventor Y's patent application, and should Inventor Y sue Inventor X for patent infringement, then Inventor X may potentially claim the benefit of the first inventor defense. If successful,[149] Inventor X would enjoy a complete defense to infringement of Inventor Y's patent.

As originally enacted, the first inventor defense applied only to patents claiming a "method of doing or conducting business." Although the American Inventors Protection Act did not define this term, the first inventor defense was arguably a focused provision directed towards a specific group of potential patent infringers. Pending legislation would expand upon the first inventor defense by allowing it to apply to all patented subject matter.[150] By removing current restrictions referring to methods of doing business, H.R. 2795 would effectively introduce "prior user rights" into U.S. law.

A feature of many foreign patent regimes, prior user rights are often seen as assisting small entities, which may lack the sophistication or resources to pursue patent protection. The provision of prior user rights would allow such entities to commercialize their inventions when they used the subject matter of the invention prior to the patent's filing date, even when they themselves did not pursue patent rights. For this reason, a more expansive prior user rights regime has also been tied to adoption of the first-inventor-to-file priority system.[151]

Proponents of prior user rights also assert that the new legislation would support investment in technological innovation. Under this view, firms would not longer be required to engage in extensive defensive patenting, but rather would be able to devote these resources to further innovation. In addition, some commentators observe that many U.S. trading partners, including Germany and Japan, currently allow prior user rights. As a result, U.S. firms that obtain patent rights in certain foreign nations may face the possibility that a foreign firm may enjoy prior user rights in that invention. Foreign firms with U.S. patents do not currently face this possibility with respect to U.S. firms, however. Under this view, adoption of prior user rights in the United States would "level the playing field" for U.S. industry.[152]

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[149] As presently codified at 35 U.S.C. § 273, the first inventor defense is subject to a number of additional qualifications. First, the defendant must have reduced the infringing subject matter to practice at least one year before the effective filing date of the application. Second, the defendant must have commercially used the infringing subject matter prior to the effective filing date of the patent. Finally, any reduction to practice or use must have been made in good faith, without derivation from the patentee or persons in privity with the patentee.

[150] The bill would also remove the requirement that the prior use be reduced to practice at least one year before the effective filing date of such patent. Under H.R. 2795, the defense would apply where reduction to practice occurred prior to the patent's filing date.

[151] *See* Gary L. Griswold & F. Andrew Ubel, "Prior User Rights — A Necessary Part of a First-to-File System," 26 *John Marshall Law Review* (1993), 567.

[152] Paul R. Morico, "Are Prior User Rights Consistent with Federal Patent Policy?: The U.S.
(continued...)

Proposals to adopt prior user rights have attracted critics, however. Some observers believe that this regime would benefit large corporations at the expense of smaller ones. Others believe that individuals who are aware that they can rely upon prior user rights will be less likely to disclose their inventions through the patent system. Still others have stated that prior user rights reduce the value of patents and therefore make innovation less desirable. The role of the U.S. Constitution is sometimes debated within this context as well. Article I, section 8, clause 8 of the Constitution provides Congress with the authority to award "inventors the exclusive right to their . . . discoveries." Some commentators suggest this language suggests, or possibly requires, a system of exclusive patent rights, rather than an interest that may be mitigated by prior user rights.[153]

Injunctions

35 U.S.C. § 283 currently allows courts to "grant injunctions in accordance with the principles of equity to prevent the violation of any right secured by patent, on such terms as the court deems reasonable."[154] H.R. 2795 would add the following additional language to that statute:

> In determining equity, the court shall consider the fairness of the remedy in light of all the facts and the relevant interests of the parties associated with the invention. Unless the injunction is entered pursuant to a nonappealable judgment of infringement, a court shall stay the injunction pending an appeal upon an affirmative showing that the stay would not result in irreparable harm to the owner of the patent and that the balance of the hardships from the stay does not favor the owner of the patent.[155]

In other words, this legislation would stipulate that all the facts and relevant interests must be considered when a court weighs "principles of equity" in deciding whether to enjoin an adjudicated infringer or not.

Understanding of this proposed reform requires a review of current judicial precedent concerning the availability of injunctions in patent cases. Under current law, courts ordinarily grant permanent injunctions to patentees that prevail in infringement litigation.[156] As the Federal Circuit recently explained:

> Because the "right to exclude recognized in a patent is but the essence of the concept of property," the general rule is that a permanent injunction will issue once infringement and validity have been adjudged. To be sure, "courts have in rare instances exercised their discretion to deny injunctive relief in order to

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[152] (...continued)
Considers Legislation to Adopt Prior User Rights," 78 *Journal of the Patent and Trademark Office Society* (1996), 572.

[153] *See* Robert L. Rohrback, "Prior User Rights: Roses or Thorns?," 2 *University of Baltimore Intellectual Property Review* (1993), 1.

[154] 35 U.S.C. § 283.

[155] H.R. 2795, § 7.

[156] *See* Richardson v. Suzuki Motor Co., 868 F.2d 1226, 1247 (Fed. Cir. 1989).

> protect the public interest." *Rite-Hite Corp. v. Kelley, Inc.,* 56 F.3d 1538, 1547 (Fed. Cir.1995); *see Roche Prods., Inc. v. Bolar Pharm. Co.,* 733 F.2d 858, 865-66 (Fed. Cir.1984) ("standards of the public interest, not the requirements of private litigation, measure the propriety and need for injunctive relief"). Thus, we have stated that a court may decline to enter an injunction when "a patentee's failure to practice the patented invention frustrates an important public need for the invention," such as the need to use an invention to protect public health.[157]

As this language suggests, few published judicial opinions decline to grant injunctions against adjudicated patent infringers. The usually cited exception is the1934 decision in *City of Milwaukee v. Activated Sludge*,[158] where the Court of Appeals for the Seventh Circuit refused to enjoin infringement of a patented method for sewage treatment. Had the city of Milwaukee been prevented from using the patented invention, it would have been required to dump large quantities of raw sewage into Lake Michigan. Observing that "the health and the lives of more than half a million people are involved,"[159] the court denied the requested injunction. Because the patentee still obtained judicially determined monetary remedies against the city of Milwaukee, this outcome essentially amounted to an award of a compulsory license.

Another notable case, the 1944 decision in *Vitamin Technologists, Inc. v. Wisconsin Alumni Research Foundation*,[160] involved a patent claiming a method of irradiating foods to increase Vitamin D content. This treatment helped eliminate the debilitating Vitamin D deficiency disease called rickets. The availability of Vitamin D-enhanced margarine was particularly important to the poor, who were better able to afford margarine as compared to butter. The patent proprietor had nonetheless refused to license the patent to margarine producers. The Court of Appeals for the Ninth Circuit ultimately held the asserted patents invalid or unenforceable on conventional grounds. However, the court also discussed the concept that injunctions should be refused where they act against public health interests.[161]

Other courts have taken a different route by delaying the effective date of a permanent injunction rather than refusing it altogether. For example, in *Schneider (Europe) AG v. SciMed Life Systems, Inc.*,[162] the adjudicated infringer marketed a rapid-exchange catheter used by surgeons. Although the court concluded that no evidence of record supported a finding that the infringing product was more safe or objectively superior to other catheters on the market, the court recognized that some

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[157] MercExchange, L.L.C. v. eBay, Inc., 401 F.3d 1323, 1338 (Fed. Cir. 2005) (select citations omitted).

[158] 69 F.2d 577 (7th Cir. 1934).

[159] *Ibid.* at 593.

[160] 146 F.2d 941 (9th Cir. 1944).

[161] *Ibid.* at 943-44.

[162] 852 F. Supp. 813 (D. Minn.1994).

physicians did strongly prefer the infringing product.[163] The court opted to grant a permanent injunction with a delay of one year from the entry of judgment. The court reasoned that this year-long transition period would allow surgeons to switch from the infringing product with a minimum of disruption, at least in comparison with the immediate imposition of an injunction. The court further provided that the patentee would receive an escalating royalty during the transition period.[164]

Some commentators have expressed concerns over the current state of the law. It has been observed that although the patent statute directs courts to "grant injunctions in accordance with the principles of equity,"[165] in practice courts issue injunctions in favor of victorious patent proprietors "virtually automatically."[166] In the view of some observers, this rule has encouraged strategic behavior by speculators. These speculators do not themselves market goods or services, and thus do not acquire patents in order to protect their own markets. Rather, they are said to use patents to threaten manufacturers and service providers. Because such speculators may legitimately threaten to halt use of the patented invention entirely, accused infringers may enter into a license on even a dubious patent in the face of losing the company business. This practice is sometimes termed "trolling," after creatures from folklore that would emerge from under a bridge in order to waylay travelers.[167]

In response, some commentators have observed that not all patentees that chose not to market their patented inventions are fairly characterized as opportunistic speculators. Particular individuals or firms may lack the expertise or resources to produce a patented product, or otherwise have sound business reasons not to do so. In addition, as the Federal Circuit explained a decade ago:

> A patent is granted in exchange for a patentee's disclosure of an invention, not for the patentee's use of the invention. There is no requirement in this country that a patentee make, use, or sell its patented invention.[168]

Still other observers view patents as time-limited property rights.[169] Under this view, infringers are properly enjoined so that the patent owner's exclusive rights may be preserved. Failing to enjoin infringements may also diminish the incentives needed for innovators to develop patentable inventions in the first instance.

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[163] *Ibid.* at 850 — 51.

[164] *Ibid.* at 862.

[165] 35 U.S.C. § 283.

[166] W. David Westergard, Remedying the Growing Abuse of the Patent System Through Targeted Legislation, *in Conference Papers on International Intellectual Property Law & Policy* (Fordham Law School March 31, 2005).

[167] *See* Lorraine Woellert, "A Patent War Is Breaking Out on the Hill," *BusinessWeek* 45 (July 4, 2005).

[168] Rite-Hite Corp. v. Kelley Co., Inc., 56 F.3d 1538, 1547 (Fed. Cir. 1995).

[169] *See, e.g.,* Frank H. Easterbrook, "Intellectual Property is Still Property," 13 *Harvard Journal of Law and Public Policy* (1990), 108.

On the other hand, scholarly commentary concludes that the term "intellectual property" is one of relatively recent vintage, and that patents can just as readily be analogized as arising under the tort law, or as constituting a government-granted subsidy.[170] Although viewing a patent as a property right arguably suggests that an injunction is a suitable remedy for a violation of that right, these alternative conceptions of the patent grant do not so strongly imply that courts should enjoin adjudicated infringers as a matter of course. It should also be noted that even traditional properties, such as real estate, are prospectively subject to numerous limitations, including easements, zoning restrictions, servitudes, and other obligations.[171]

Limitation Upon Damages

Pending legislation would also address the award of damages where the patented invention forms but one component of the infringer's larger commercial product or process. In the wording of H.R. 2795:

> In determining a reasonable royalty in the case of a combination, the court shall consider, if relevant and among other factors, the portion of the realizable profit that should be credited to the inventive contribution as distinguished from other features of the combination, the manufacturing process, business risks, or significant features or improvements added by the infringer.[172]

This proposed reform appears to be directed towards perceived concerns about overly generous damages awards in this context. As one commentator asserted:

> [I]nventors have learned to abuse the patent system and increase leverage against manufacturers by pursuing "system claims" in the [USPTO]. These clever claims insert the crux of the predator's "innovation" into much larger contexts than that to which the inventor is rightfully entitled. For example, the abuser may actually have invented a hinge mechanism, but draws the patent claim to a door including the hinge mechanism. In this example, the door is well known to, and long in use by, the public but in subsequent litigation, the patent predator claims entitlement to, and the court awards, damages based on the entire value of the door rather than on the value of the innovative hinge.[173]

Several observations may be made about this proposed reform. First, the Federal Circuit has explained that:

> Virtually *all* patents are "combination patents," if by that label one intends to describe patents having claims to inventions formed of a combination of elements. It is difficult to visualize, at least in the mechanical-structural arts, a

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[170] *See* Mark A. Lemley, "Property, Intellectual Property, and Free Riding," 83 *Texas Law Review* (2005), 1031.

[171] *See* Michael A. Carrier, "Cabining Intellectual Property Through a Property Paradigm," 54 *Duke Law Journal* (2004), 1.

[172] H.R. 2795, § 6.

[173] Westergard, *supra*, at 7.

> "non-combination" invention, i.e., an invention consisting of a *single* element. Such inventions, if they exist, are rare indeed.[174]

Under this view, this legislative proposal is of potentially broad application. Further, the required assessment of the "inventive contribution" of a patented combination — rather than base its damages determination upon the claims themselves — would mark a notable change in U.S. patent law. As the Federal Circuit recently stated:

> It is well settled that "there is no legally recognizable or protected 'essential' element, gist or 'heart' of the invention in a combination patent." Rather, "'[t]he invention' is defined by the claims."[175]

Finally the language of H.R. 2795 expressly applies only to an award of a reasonable royalty. However, the patent statute also authorizes the courts to award damages equal to the lost profits of the patentee,[176] provided the patentee can make the necessary showing. It is unclear why this proposal is limited to damages awards based upon reasonable royalties, rather than upon both forms of damages awards available under the patent laws.

Willful Infringement

Pending legislation would also reform the law of willful infringement. The patent statute currently provides that the court "may increase the damages up to three times the amount found or assessed."[177] An award of enhanced damages, as well as the amount by which the damages will be increased, is committed to the discretion of the trial court.[178] Although the statute does not specify the circumstances in which enhanced damages are appropriate, the courts most commonly award them when the infringer acted in blatant disregard of the patentee's rights. This circumstance is termed "willful infringement."[179]

Courts will not ordinarily enhance damages due to willful infringement if the adjudicated infringer did not know of the patent until charged with infringement in court, or if the infringer acted with the reasonable belief that the patent was not infringed or that it was invalid. Federal Circuit decisions emphasize the duty of someone with actual notice of a competitor's patent to exercise due care in determining if his acts will infringe that patent. A common way to fulfill this

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[174] Stratoflex, Inc. v. Aeroquip Corp., 713 F.2d 1530, 1540 (Fed. Cir. 1983).

[175] Allen Eng'g Corp. v. Bartell Indus., Inc., 299 F.3d 1336, 1345 (Fed. Cir. 2002).

[176] 35 U.S.C. § 284.

[177] *Ibid.*

[178] *See* Read Corp. v. Portec, Inc., 970 F.2d 816, 826 (Fed. Cir. 1992).

[179] *See* Beatrice Foods Co. v. New England Printing & Lithographing Co., 923 F.2d 1576, 1578 (Fed. Cir.1991).

obligation is to obtain competent legal advice before commencing, or continuing, activity that may infringe another's patent.[180]

Prior to 2004, the Federal Circuit held that when an accused infringer invoked the attorney-client or work-product privilege, courts should be free to reach an adverse inference that either (1) no opinion had been obtained or (2) an opinion had been obtained and was contrary to the infringers's desire to continue practicing the patented invention.[181] However, in its decision in *Knorr-Bremse Systeme fuer Nutzfahrzeuge GmbH v. Dana Corp.*,[182] the Federal Circuit expressly overturned this principle. The Court of Appeals further stressed that the failure to obtain legal advice did not occasion an adverse inference with respect to willful infringement either. Following the *Knorr-Bremse* opinion, willful infringement determinations are based upon "the totality of circumstances, but without the evidentiary contribution or presumptive weight of an adverse inference that any opinion of counsel was or would have been unfavorable."[183]

Patent law's willful infringement doctrine has proven controversial. Some observers believe that this doctrine ensures that patent rights will be respected in the marketplace. Critics of the policy believe that the possibility of trebled damages discourages individuals from reviewing issued patents. Out of fear that their inquisitiveness will result in multiple damages, innovators may simply avoid looking at patents until they are sued for infringement. To the extent this observation is correct, the law of willful infringement discourages the dissemination of technical knowledge, thereby thwarting one of the principal goals of the patent system. Fear of increased liability for willful infringement may also discourage firms from challenging patents of dubious validity. Consequently some have argued that the patent system should shift to a "no-fault" regime of strictly compensatory damages, without regard to the state of mind of the adjudicated infringer.[184]

H.R. 2795 would add several clarifications and changes to the law of willful infringement. First, a finding of willful infringement would be appropriate only where (1) the infringer received specific written notice from the patentee and continued to infringe after a reasonable opportunity to investigate; (2) the infringer intentionally copied from the patentee with knowledge of the patent; and (3) the infringer continued to infringe after an adverse court ruling. Second, willful infringement cannot be found where the infringer possessed an informed, good faith belief that its conduct was not infringing. Finally, a court may not determine willful

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[180] *See, e.g.,* Jon E. Wright, "Willful Patent Infringement and Enhanced Damages — Evolution and Analysis," 10 *George Mason Law Review* (2001), 97.

[181] *See, e.g.,* Fromson v. Western Litho Plate & Supply Co., 853 F.2d 1568, 1572 (Fed. Cir. 1988).

[182] 383 F.3d 1337 (Fed. Cir. 2004).

[183] *Ibid.* at 1341.

[184] *See generally* Schechter & Thomas, *supra*, at § 9.2.5.

infringement before the date on which a determination is made that the patent is not invalid, enforceable, and infringed.[185]

Post-Issuance Opposition Proceedings

Pending legislation would introduce post-issuance opposition proceedings into U.S. patent law. Oppositions, which are common in foreign patent regimes, are patent revocation proceedings that are usually administered by authorities from the national patent office. Oppositions often involve a wide range of potential invalidity arguments and are conducted through adversarial hearings that resemble courtroom litigation.

Although the U.S. patent system does not currently include oppositions, the U.S. patent system has incorporated a so-called reexamination proceeding since 1981. Some commentators have viewed the reexamination as a more limited form of an opposition. Under the reexamination statute, any individual, including the patentee, a competitor, and even the USPTO Director, may cite a prior art patent or printed publication to the USPTO. If the USPTO determines that this reference raises a "substantial new question of patentability" with respect to an issued patent, then it will essentially reopen prosecution of the issued patent.

Traditional reexamination proceedings are conducted in an accelerated fashion on an *ex parte* basis. Following the American Inventors Protection Act of 1999, an *inter partes* reexamination allows the requester to participate more fully in the proceedings through the submission of arguments and the filing of appeals. Either sort of reexamination may result in a certificate confirming the patentability of the original claims, an amended patent with narrower claims or a declaration of patent invalidity.

Congress intended reexamination proceedings to serve as an inexpensive alternative to judicial determinations of patent validity.[186] Reexamination also allows further access to the legal and technical expertise of the USPTO after a patent has issued.[187] However, some commentators believe that reexamination proceedings have been employed only sparingly and question their effectiveness.[188]

Some analysts have expressed concern that potential requesters are discouraged from commencing *inter partes* reexamination proceedings due to a statutory provision that limits their future options. In order to discourage abuse of these proceedings, the *inter partes* reexamination statute provides that third-party participants may not later assert that a patent is invalid "on any ground that [they]

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[185] H.R. 2795, § 6.

[186] Mark D. Janis, "Inter Partes Reexamination," 10 *Fordham Intellectual Property, Media & Entertainment Law Journal* (2000), 481.

[187] Craig Allen Nard, "Certainty, Fence Building and the Useful Arts," 74 *Indiana Law Journal* (1999), 759.

[188] *See* Schechter & Thomas, *supra*, at § 7.5.4.

raised or could have raised during the inter partes reexamination proceedings."[189] Some observers believe that this potential estoppel effect disinclines potential requesters from use of this post-issuance proceeding. In apparent response to this concern, H.R. 2795 would delete the phrase "or could have raised" from the statute.[190] As a result, *inter partes* reexamination requesters would be limited only with respect to arguments that they actually made before the USPTO.

In addition to reforming the reexamination statute, H.R. 2795 would create an additional post-issuance proceeding termed an "opposition." Under this bill, any person could commence an opposition either within nine months after the issuance of the patent, or six months after receiving notice from the patent holder alleging infringement. The opposition may relate to a wide range of patentability issues, including double patenting, statutory subject matter, novelty, nonobviousness, enablement, and definite claiming. The commencement of the opposition is conditioned upon the USPTO Director's determination that the opponent has raised a substantial question of patentability with respect to at least one claim in the patent.

H.R. 2795 further provides that opposition proceedings will be tried before a panel of three administrative patent judges. In the event that the patentee files an infringement suit within nine months of patent issuance, or six months of notifying the alleged infringer, the opposition will be stayed upon the request of the patent owner. The patent owner may amend its claims during an opposition, provided that those amendments do not broaden the scope of the claims. The opposition must conclude within one year of its commencement, although one six-month extension is possible. The results of opposition proceedings may be appealed to the courts.

Many observers have called for the United States to adopt an opposition system in order to provide more timely, lower cost, and more efficient review of issued patents.[191] Such a system could potentially improve the quality of issued patents by weeding out invalid claims. It might also encourage innovative firms to review issued patents soon after they are granted, thereby increasing the opportunity for technology spillovers.[192] Concerns have arisen over oppositions because they too may be costly, complex, and prone to abuse as a means for harassing patent owners.[193] A successful opposition proceeding would require a balancing of these concerns.

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[189] 35 U.S.C. § 315(c).

[190] H.R. 2795, § 9(d).

[191] *See* National Research Council of the National Academies, *A Patent System for the 21st Century* (2004), 96.

[192] *Ibid.* at 103.

[193] *See* Mark D. Janis, "Rethinking Reexamination: Toward a Viable Administrative Revocation System for U.S. Patent Law," 11 *Harvard Journal of Law and Technology* (1997), 1.

Concluding Observations

Pending legislation would arguably work the most sweeping reforms to the U.S. patent system since the nineteenth century. However, many of these proposals, such as pre-issuance publication, prior user rights, and oppositions, have already been implemented in U.S. law to a more limited extent. These and other proposed modifications, such as the first-inventor-to-file priority system and elimination of the best mode requirement, also reflect the decades-old patent practices of Europe, Japan, and our other leading trading partners. As well, many of these changes enjoy the support of diverse institutions, including the Federal Trade Commission, National Academies, economists, industry representatives, attorneys, and legal academics.

Other knowledgeable observers are nonetheless concerned that certain of these proposals would weaken the patent right, thereby diminishing needed incentives for innovation. Some also believe that changes of this magnitude, occurring at the same time, do not present the most prudent course for the patent system. Patent reform therefore confronts Congress with difficult legal, practical, and policy issues, but also with the apparent possibility for altering and potentially improving the legal regime that has long been recognized as an engine of innovation within the U.S. economy.

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