

Patent Reform in the 112th Congress: Innovation Issues

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Summary

Congressional interest in patent reform has increased as the patent system becomes more significant to U.S. industry. Patent ownership is perceived as an incentive to the technological advancement that leads to economic growth. Yet, this augmented attention to patents has been accompanied by persistent concerns about the fairness and effectiveness of the current system. Several studies, including those by the National Academy of Sciences and the Federal Trade Commission, recommended reform of the patent system 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 adapt, and is adapting, to technological progress.

The patent reform proposal introduced in the 112th Congress, S. 23, originally titled the Patent Reform Act of 2011, amended to the America Invents Act, would make significant changes to the patent system. As originally introduced, S. 23 would have adopted a first-inventor-to-file priority system, made substantive and procedural modifications to the doctrine of willful infringement, introduced procedural and evidentiary reforms to patent damage calculations, allowed for assignee filing, altered venue principles in patent cases, established USPTO fee-setting authority, and provided for post-grant review proceedings.

Following several amendments and as passed by the Senate on March 8, 2011, S. 23 no longer addresses damages for patent infringement or willful infringement, and its provisions regarding venue in patent infringement cases were removed. Other amendments to S. 23 introduced several additional reforms, including a transitional post-grant review proceeding for the review of the validity of certain business method patents, the possibility of USPTO satellite offices, priority examination for technologies important to American competitiveness, and the establishment of a USPTO Public Enterprise Fund. Several of these proposals have been the subject of discussion within the patent community for many years, but others present more novel propositions.

While the provisions of the proposed legislation would arguably institute the most sweeping reforms to the U.S. patent system since the nineteenth century, many of these proposals, such as pre-issuance publication and prior user rights, 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 post-grant review proceedings, also reflect the decades-old patent practices of Europe, Japan, and our other leading trading partners.

Some observers are nonetheless concerned that certain of these provisions would weaken patent rights, thereby diminishing incentives for innovation. Other experts 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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Introduction

Congressional interest in patent reform is evidenced by sustained legislative activity over the last four congresses.[1] There is broad agreement that more patents are sought and enforced than 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.[2] 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.

Expanded attention to patents has been accompanied by persistent concerns about the fairness and effectiveness of the current system. The American Inventors Protection Act, passed in the 106th Congress, mandated several changes to the patent laws, including U.S. Patent and Trademark Office (USPTO) publication of certain patent applications prior to grant and patent term restoration for delays caused by the USPTO during grant proceedings.[3] Several studies completed since the enactment of that legislation, including those by the National Academy of Sciences and the Federal Trade Commission, have recommended additional legal reforms to address perceived deficiencies in the operation of the patent regime.[4] Other experts maintain that major alterations in existing law are unnecessary and that the patent process can adapt, and is adapting, to technological progress.

Legislation introduced in the 112th Congress attempts to respond to current concerns about the functioning of the patent process. S. 23, originally titled the Patent Reform Act of 2011, now the America Invents Act, was introduced on January 25, 2011. S. 23 was reported, amended, from the Senate Committee on the Judiciary on February 3, 2011. Consideration of the bill on the Senate floor commenced on February 28, 2011; S. 23 passed the Senate, as amended, on March 8, 2011.

S. 23 proposes significant legal reforms to the patent system. As originally introduced, S. 23 would have adopted a first-inventor-to-file priority system, made substantive and procedural modifications to the doctrine of willful infringement, introduced procedural and evidentiary reforms to patent damage calculations, allowed for assignee filing, altered venue principles in patent cases, established USPTO fee-setting authority,

[1] This report is based substantially on three predecessor reports on patent reform issues in the 111th, 110th, and 109th Congresses: CRS Report R40481, *Patent Reform in the 111th Congress: Innovation Issues*, by Wendy H. Schacht and John R. Thomas; CRS Report RL33996, *Patent Reform in the 110th Congress: Innovation Issues*, by John R. Thomas and Wendy H. Schacht; and CRS Report RL32996, *Patent Reform: Innovation Issues*, by John R. Thomas and Wendy H. Schacht.

[2] Statistics from the United States Patent and Trademark Office (USPTO) support this account. In 1980, 104,329 utility patent applications were received at the U.S. Patent and Trademark Office (USPTO); by 2009, this number had more than quadrupled to 456,106 applications. During the same time period, the number of U.S. utility patents granted grew from 61,819 to 167,349. U.S. Patent and Trademark Office, *U.S. Patent Statistics, Calendar Years 1963-2009*, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

[3] The American Inventors Protection Act of 1999, P.L. 106-113, was part of the Intellectual Property and Communications Omnibus Reform Act of 1999, attached by reference to the Consolidated Appropriations Act for Fiscal Year 2000. President Clinton signed this bill on November 29, 1999.

[4] 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.

and provided for post-grant review proceedings. Following several amendments, the Senate-passed version of S. 23 no longer addresses damages for patent infringement or willful infringement, and its provisions regarding venue in patent infringement cases were removed. Other amendments to S. 23 introduced several additional reforms, including a transitional post-grant review proceeding for the review of the validity of certain business method patents, the possibility of USPTO satellite offices, priority examination for technologies important to American competitiveness, and the establishment of a USPTO Public Enterprise Fund. Several of these proposals have been the subject of discussion within the patent community for many years, but others present more novel propositions.

Two additional bills in the 112th Congress are directed to a single topic that is addressed within the more comprehensive provisions of S. 23. The Patent Lawsuit Reform Act of 2011, H.R. 243, would also limit the currently available cause of action for false patent marking. As well, S. 139 (not yet titled) would place restrictions upon the availability of patents on tax strategies and is comparable to section 14 of S. 23. Appropriate sections of this report review H.R. 243 and S. 139. In the event additional bills are introduced, this report will be updated to address them.

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 specific components of this legislation are then identified and reviewed in greater detail. The report closes with a review of some of the broader issues and concerns, including patent quality, the high costs of patent litigation, international harmonization, and speculation in patents, which have motivated these diverse legislative reform proposals.

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,[5] 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.[6] USPTO officials known as examiners then assess whether the application merits the award of a patent.[7] The patent acquisition process is commonly known as "prosecution."[8]

In deciding whether to approve a patent application, a USPTO examiner will consider whether the submitted application fully discloses and distinctly claims the invention.[9] In addition, the application must disclose the "best mode," or preferred way, that the applicant knows to practice

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

[6] 35 U.S.C. § 111.

[7] 35 U.S.C. § 131.

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

[9] 35 U.S.C. § 112.

the invention.[10] The examiner will also determine whether the invention itself fulfills certain substantive standards set by the patent statute. To be patentable, an invention must consist of a process, machine, manufacture, or composition of matter that is useful, novel and nonobvious. The requirement of usefulness, or utility, is satisfied if the invention is operable and provides a tangible benefit.[11] To be judged novel, the invention must not be fully anticipated by a prior patent, publication or other state-of-the-art knowledge that is collectively termed the "prior art."[12] A nonobvious invention must not have been readily within the ordinary skills of a competent artisan at the time the invention was made.[13]

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.[14] 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.[15] 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."[16]

The maximum term of patent protection is ordinarily set at 20 years from the date the application is filed.[17] 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.[18] The U.S. Court of Appeals for the Federal Circuit (Federal Circuit) possesses national jurisdiction over most patent appeals from the district courts.[19] The U.S. Supreme Court enjoys discretionary authority to review cases decided by the Federal Circuit.[20]

Innovation Policy

Most experts agree that patent ownership is an incentive to innovation, the basis for the technological advancement that contributes to economic growth. It is through the

[10] *Ibid.*

[11] 35 U.S.C. § 101.

[12] 35 U.S.C. § 102.

[13] 35 U.S.C. § 103.

[14] 35 U.S.C. § 271(a).

[15] 35 U.S.C. § 283.

[16] 35 U.S.C. § 284.

[17] 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.

[18] 35 U.S.C. § 282.

[19] 28 U.S.C. § 1295(a)(1).

[20] 28 U.S.C. § 1254(1).

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.[21] The patent system corrects this market failure problem by providing innovators with an exclusive interest in their inventions for a period of time, thereby allowing them to capture the innovation's 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.[22] At the close of the patent's 20-year term,[23] 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.[24]

The patent system has also been identified by legal observers as a facilitator of markets. Absent patent rights, an inventor may have scant tangible assets to sell or license. In 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.[25]

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

[22] 35 U.S.C. § 112.

[23] 35 U.S.C. § 154.

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

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

Through these mechanisms, the patent system can provide more socially desirable results 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.[26]

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. From this perspective, the desire to obtain a lead time advantage over competitors, as well as the recognition that technologically backward firms lose out to their rivals, can provide sufficient inducement to invent without the need for further incentives.[27] Other commentators believe that the patent system encourages industry concentration and presents a barrier to entry in some markets.[28] 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.[29]

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 not persuaded by their internal logic.

Proposed Legislative Initiatives

S. 23 has been subject to several amendments, including a title change from the Patent Reform Act of 2011 to the America Invents Act. This section discusses provisions of S. 23 as originally introduced, as reported from the Senate Committee on the Judiciary, and as passed by the Senate.

First Inventor to File

In a significant change to the patent process, S. 23 would shift the U.S. patent priority rule from the current "first-to-invent" principle to the "first-inventor-to-file" principle. 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.[30] Under

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

[27] *See* Jonathan M. Barnett, "Private Protection of Patentable Goods," 25 *Cardozo Law Review* (2004), 1251.

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

[29] *Ibid.*

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

current U.S. law, 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.[31] Within this "first-to-invent" system,[32] 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.[33] 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, 2010, and files a patent application on November 1, 2010, claiming that compound. Suppose further that Inventor B independently invents the same compound on September 1, 2010, and files a patent application on October 1, 2010. 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.

Under the current U.S. first-to-invent rule, priority disputes may be resolved via "interference" proceedings conducted at the USPTO.[34] An interference is a complex administrative proceeding that may result in the award of priority to one of its participants. These proceedings are not especially common. One estimate concludes that less than one-quarter of one percent of patents are subject to an interference.[35] This statistic may mislead, however, because the expense of interference cases may result in their use only for the most commercially significant inventions. A shift to a first-inventor-to-file priority rule would eliminate the need for interference proceedings. Instead, the applicant with the earliest filing date, rather than the first individual to have created the invention, would be eligible for the patent.

The relative merits of the first-to-invent and first-inventor-to-file priority principles have been the subject of a lengthy debate within the patent community. 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.[36]

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[31] 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).

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

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

[34] 35 U.S.C. § 135.

[35] *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), 405.

[36] *See* Brad Pedersen & Vadim Braginsky, "The Rush to First-to-File Patent System in the United States: Is a Globally Standardized Patent Reward System Really Beneficial to Patent Quality and Administrative Efficiency?," 7 *Minnesota Journal of Law, Science & Technology* (2006), 757.

Supporters of the first-inventor-to-file principle in part argue 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.[37]

The debate over a shift to the first-inventor-to-file rule and its impact on individual inventors, small firms, and universities is contentious. 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,[38] 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 USPTO, also suggested that the first-to-invent rule neither advantaged nor disadvantaged small entities vis-à-vis larger enterprises.[39]

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.[40] In order to police this requirement, S. 23 would provide for "derivation proceedings" that would allow the USPTO to determine which applicant is entitled to a patent on a particular invention.

Grace Period

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 a patent from issuing.[41] 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 activities.[42]

[37] *See* Whitney E. Fraser Tiedemann, "First-to-File: Promoting the Goals of the United States Patent System as Demonstrated Through the Biotechnology Industry," 41 *University of San Francisco Law Review* (2007), 477.

[38] 35 U.S.C. § 111(b).

[39] 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), 425.

[40] 35 U.S.C. § 101.

[41] 35 U.S.C. § 102(b).

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

Suppose, for example, that an electrical engineer files a patent application claiming a new capacitor on February 1, 2010. While reviewing the application, a USPTO examiner discovers an October 1, 2008, journal article by any author disclosing the identical capacitor. Because the article was published prior to the critical date of February 1, 2009, that publication will prevent or "bar" the issuance of a patent on that capacitor.

If a relevant reference is first publicly disclosed during the one-year grace period—that is to say, after the critical date but prior to the filing date—the legal situation is more complex. Under current law, patent applicants may "antedate" such a reference by demonstrating that they had actually invented the subject matter of their application prior to the date of the reference. If the applicant can make such a showing, then the reference cannot ordinarily be used to defeat the patentability of the invention.

As an illustration of this procedure, suppose that an inventor files a patent application directed to a polymer on February 1, 2008. Suppose further that the USPTO examiner discovers that a textbook published on January 1, 2008, describes the same polymer that is claimed in the application.[43] Because the textbook was published subsequent to the critical date of February 1, 2007, it does not absolutely bar the application. In order to obtain a patent, however, the applicant must nonetheless demonstrate that he invented the polymer prior to January 1, 2008, the date the textbook was published. The applicant might submit copies of his laboratory notebook, for example, or submit a sworn declaration in order to make this showing.[44]

S. 23 would modify the current grace period by causing it only to apply to patent applicants themselves. Under this proposal, a disclosure "made by the inventor or joint inventor or by another who obtained the subject matter disclosed directly or indirectly from the inventor or a joint inventor" would not be patent-defeating, provided it was made "1 year or less before the effective filing date of a claimed invention." In contrast, disclosures qualify as prior art, and are therefore potentially patent-defeating, if they were made either by (1) the inventors and their associates more than one year before the patent application's filing date; or (2) anyone else prior to the filing date, provided that such a disclosure occurred prior to the inventor's own disclosure. These amendments would, in essence, protect the patent positions of individuals who disclosed their inventions up to one year before they filed a patent application. The grace period would no longer shield inventors from earlier disclosures made by unrelated individuals, however.

Marking

The Patent Act encourages patent proprietors that manufacture their patented inventions to notify the public of their patent rights.[45] Section 287(a) provides that patent owners should place the word "patent," or the abbreviation "pat.," along with the number of the patent, on patented goods. If the nature of the article does not allow this notice to be placed directly upon it, then a label may be placed on the article or its packaging. This practice is commonly termed "marking."[46]

[43] In addition, the textbook must be attributable to someone other than the patent applicant. *See* 35 U.S.C. § 102(a).

[44] 37 C.F.R. § 1.131.

[45] For further discussion of current patent marking issues and proposed legislation, see CRS Report R41418, *False Patent Marking: Litigation and Legislation*, by Brian T. Yeh.

[46] *See* Schechter & Thomas, *supra*, at § 9.2.3.

There is no absolute duty to mark. If a patent proprietor fails to mark in the specified manner, however, then it may receive damages only for infringing acts that occur after the infringer receives actual notice of infringement.[47] Filing an infringement lawsuit is considered to provide such actual notice. Less severely, a patent owner may issue a specific charge of infringement, commonly by sending a cease and desist letter to the infringer. The marking statute is said "to give patentees the proper incentive to mark their products and thus place the world on notice of the existence of the patent."[48]

The marking statute does not apply in some situations. Obviously, if the patent owner does not sell products that embody the patented invention, then there is no obligation to mark. In addition, "[t]he law is clear that the notice provisions of section 287 do not apply where the patent is directed to a process or method."[49] Because these types of patent concern inchoate behavior, rather than a discrete physical product, the courts have reasoned that there is no tangible item on which to place a patent marking.[50]

The Patent Act also addresses the issue of "false marking." Section 292 prohibits marking a product with the number of another's patent, the name of another patent owner, or a patent or application number where no such patent or application exists. Prohibited marks also include the number of expired patents and patents that do not cover the marked product, provided such marks were affixed for the "purpose of deceiving the public."

The Patent Act mandates a maximum fine of $500 for "every such" offense. According to the statute, "any person may sue for the penalty, in which event one-half shall go to the person suing and the other to the use of the United States."[51] In its decision in *The Forest Group, Inc. v. Bon Tool Co.*,[52] the Federal Circuit construed that provision to require imposition of that fine with respect to each item that was falsely marked. In so doing the Court of Appeals specifically rejected an interpretation that would assess the fine on the basis of the offender's single decision to mark an entire line of products. A false patent marking on one million identical products would therefore generate a maximum fine of not $500, but rather $500 million. Although the Federal Circuit acknowledged that "interpreting the fine of § 292 to apply on a per article basis would encourage 'a new cottage industry' of false marking litigation by plaintiffs who have not suffered any direct harm," the court explained "that in the case of inexpensive mass-produced articles, a court has the discretion to determine that a fraction of a penny per article is a proper penalty."[53]

S. 23 proposes to alter the Patent Act's false marking provision by stipulating that the statute may only be privately enforced by a "person who has suffered a competitive injury as a result of the violation...." Damages in such cases would also be limited to those "adequate to compensate for the injury." This amendment would change current law, which allows any private person to bring a civil action for false marking, whether or not they have been negatively affected. These provisions do not apply to the U.S. government. Under the provisions of S. 23, the U.S.

[47] It should be further appreciated that under 35 U.S.C. § 286, "no recovery shall be had for any infringement committed more than six years prior to the filing of the complaint or counterclaim for infringement in the action."

[48] Laitram Corp. v. Hewlett-Packard Co., 806 F. Supp. 1294, 1296 (E.D. La. 1992).

[49] American Med. Sys., Inc. v. Medical Eng'g Corp., 6 F.3d 1523, 1538 (Fed. Cir. 1993).

[50] *See* State Contracting & Eng'g Corp. v. Condotte Am., Inc., 346 F.3d 1057, 1074 (Fed. Cir. 2003).

[51] 35 U.S.C. § 292(b). This sort of proceeding is termed a *qui tam* action.

[52] 590 F.3d 1295 (Fed. Cir. 2009).

[53] *Ibid.* at 1303-04.

government would continue to bring false marking suits without regard to competitive injury, and also would retain the ability to recover a maximum fine of $500 per falsely marked article.

In addition, S. 23 would allow for "virtual marking." Under this proposal, the marking standard would be fulfilled if the product or its packaging included the word "patent" or the abbreviation "pat.," together with an Internet address that provided the number of the patent associated with the patented article.

A stand-alone bill, H.R. 243, also addresses false marking. Titled the Patent Lawsuit Reform Act of 2011, this legislation would also limit entitlement to bring suit to those who have suffered direct economic harm as a result of the false marking.[54] In addition, H.R. 243 would limit the damages available for false marking violations to a single fine, in the aggregate, of not more than $500.[55]

Inventor's Oath and Assignee Filing

Under current U.S. law, a patent application must be filed by the inventor—that is, the natural person or persons who developed the invention.[56] 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. In particular, Section 115 of the Patent Act obliges each applicant must also submit an oath or declaration stating that he believes himself to be the "original and first inventor" of the subject matter for which he seeks a patent. Section 118 of the Patent Act allows a 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 the patent application in place of the inventor.

S. 23 would modify these rules by incorporating the exceptions found in current Section 118 into Section 115 of the Patent Act. This proposal appears to be primarily technical in nature, although a few differences between the proposed statute and present law exist. First, S. 23 requires inventors to declare only that they are the "original inventor"—rather than the "original and first inventor"—in keeping with the proposed shift to a first-inventor-to-file priority system. Second, S. 23 allows an "individual who is under an obligation of assignment for patent [to] include the required statements ... in the assignment executed by the individual, in lieu of filing such statements separately." This provision comports with the allowance of the filing of patent applications by employers and other assignees of patent rights.

S. 23 further stipulates that a "person to whom the inventor has assigned or is under an obligation to assign the invention may make an application for patent." 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 S. 23, 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."

[54] H.R. 243, § 2(a)(2).

[55] *Id.* at § 2(a)(1)(C).

[56] 35 U.S.C. § 111.

Legal reforms allowing assignee filing of patent applications have been discussed for many years. Two well-known commissions encouraged this shift, albeit some years ago. A 1966 Report of the President's Commission on the Patent System recommended the allowance of assignee filing as a way to simplify formalities of application filing and to avoid delays caused by the need to identify and obtain signatures from each inventor.[57] 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."[58] 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 file patent applications more promptly.

The 1992 Commission also explained that adoption of assignee filing may have some negative consequences. The Commission noted that patent applications filed by assignees may lack the actual inventor's personal guarantee that the application was properly prepared. 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.[59]

Damages

The initial version of S. 23 included provisions addressing monetary remedies for patent infringement. These provisions were subsequently removed from the bill and were not included in the version passed by the Senate.

Marketplace realities often render the determination of an appropriate damages award a difficult affair in patent litigation. In some cases, the product or process that is found to infringe may incorporate numerous additional elements beyond the patented invention. For example, the asserted patent may relate to a single component of an audio speaker, while the accused product consists of the entire stereo system. In such circumstances, a court may apply "the entire market value rule," which "permits recovery of damages based upon the entire apparatus containing several features, where the patent-related feature is the basis for consumer demand."[60] On the other hand, if the court determines that the infringing sales were due to many factors beyond the use of the patented invention, the court may apply principles of "apportionment" to measure damages based upon the value of the patented feature alone.[61]

Some observers believe that courts have sometimes been overly generous in assessing damages in patent cases. As one commentator asserted:

> [B]road application of the entire market value rule appears to broaden the practical scope of a remedy for patent infringement beyond the legal scope of the patent and despite careful attention to a precise and proper construction of claim terms. Further, although the entire market value rule was conceived to ensure a proper level of damages for the infringement by recognizing a patent's value that went beyond sales of a single product, the courts'

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

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

[59] *Id.*

[60] State Indus., Inc. v. Mor-Flo Indus., Inc., 883 F.2d 1573, 1580 (Fed. Cir. 1989).

[61] Dowagiac Mfg. Co. v. Minn. Moline Plow Co., 235 U.S. 641 (1915).

> abandonment of a meaningful "basis of consumer" demand test requires an infringer to pay damages for an entire system, despite that the patent has been issued on only a narrow piece that has little market impact on sales of unpatented components. Similarly, failing to provide subsequent inventors with clear notice of their potential liability by uneven application of the entire market value rule may chill innovation and interfere with the public notice requirements on which the patent laws depend. Overcompensating initial inventors and over-deterring subsequent inventors interferes with the balance sought to be struck by proper claim interpretation.[62]

Other commentators disagree, believing that current case law appropriately incorporates apportionment principles. These commentators also believe that the proposed reforms would diminish the value of the patent right to the detriment of the innovation environment of the United States. One observer states:

> Courts have had little difficulty applying the current law on apportionment and the entire market value rule to reach just and reasonable findings on assessment of damages....
>
> Patent infringement damages ... are the culmination of the courts' long and careful efforts to adhere to the statutory requirement to provide damages adequate to compensate for the infringement of an inventor's patent. Apportionment recognizes the reality that consumer demand for an infringing product or process may in part spring from contributions from the infringer, and to reward the inventor for those contributions is inappropriate. On the other hand, the entire market value rule recognizes the reality that even complex assemblies may owe their marketability to a patented feature—a feature that drives consumer demand for the overall assembly. In those cases, it is entirely appropriate to reward the inventor according to the worth of her invention. To do otherwise would only encourage those who trespass and discourage inventors from making their intellectual efforts available to the public. The courts can be and are flexible in assessing each case on its merits, and they can reliably determine the correct royalty base and rate that will award "damages adequate to compensate for the infringement."[63]

In order to address concerns over damages in patent cases, S. 23 originally required courts to "identify the methodologies and factors that are relevant to the determination of damages" and to consider only that subject matter when assessing damages. Litigants were afforded an opportunity to request that the court consider whether a party's damage contentions lack "a legally sufficient evidentiary basis." In the earlier version, S. 23 also provided that "sequencing," or separate trials of substantive and remedial issues, shall be permitted "absent good cause to reject such a request." Subsequently, the damages section was removed by amendment to the bill by a vote on the Senate floor, and was not included in the version passed by the Senate.

Views differ on the appropriateness of legislative damages reform. Some believe that current damages standards have resulted in the systemic overcompensation of patent owners. Such overcompensation may place unreasonable royalty burdens upon producers of high technology products, ultimately impeding the process of technological innovation and dissemination that the patent system is meant to foster. Others believe that current case law appropriately accounts for apportionment concerns. These observers are concerned that this reform might overly restrict

[62] Amy L. Landers, "Let the Games Begin: Incentives to Innovation in the New Economy of Intellectual Property Law," 46 *Santa Clara Law Review* (2006), 364-65.

[63] William C. Rooklidge, "Reform of the Patent Laws: Forging Legislation Addressing Disparate Interests," 88 *Journal of the Patent and Trademark Office Society* (2006), 17-18, 20 (quoting 35 U.S.C. § 284).

damages in patent cases, thereby discouraging voluntary licensing and promoting infringement of patent rights. Limited damage awards for patent infringement might prevent innovators from realizing the value of their inventive contributions, a principal goal of the patent system.

Willful Infringement

As originally introduced, S. 23 proposed to reform the law of willful infringement as discussed below. However, in the version of S. 23 reported from the Senate Committee on the Judiciary, this section was deleted by amendment and is absent from the Senate-passed bill.

The patent statute currently provides that a court "may increase the damages up to three times the amount found or assessed."[64] 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. Although the statute does not specify the circumstances in which enhanced damages are appropriate, the Federal Circuit recently explained that "a patentee must show by clear and convincing evidence that the infringer acted despite an objectively high likelihood that its actions constituted infringement of a valid patent."[65] This circumstance is termed "willful infringement."[66]

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. Prior to the 2007 decision in *In re Seagate Technology*, Federal Circuit decisions emphasized 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.[67] In *Seagate Technology*, however, the Federal Circuit opted to "abandon the affirmative duty of due care."[68] The court of appeals instead explained that "proof of willful infringement permitting enhanced damages requires at least a showing of objective recklessness."[69]

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 infringer's desire to continue practicing the patented invention.[70] However, in its decision in *Knorr-Bremse Systeme fuer Nutzfahrzeuge GmbH v. Dana Corp.*,[71] 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

[64] 35 U.S.C. § 284.

[65] *In re Seagate Technology*, 497 F.3d 1360 (Fed. Cir. 2007) (in banc).

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

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

[68] *Seagate Technologies*, *supra.*

[69] *Id.*

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

[71] 383 F.3d 1337 (Fed. Cir. 2004).

circumstances, but without the evidentiary contribution or presumptive weight of an adverse inference that any opinion of counsel was or would have been unfavorable."[72]

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.[73]

The original version of S. 23 would have added several clarifications and changes to the law of willful infringement. The bill stipulated that infringement was not willful unless "the claimant proves by clear and convincing evidence that the accused infringer's conduct with respect to the patent was objectively reckless." Knowledge of the patent, by itself, would not have constituted willful infringement. Further, damages were not to be increased if there is a close case as to infringement, validity, or enforceability. These provisions were removed in the amended version of S. 23 reported from the Senate Committee on the Judiciary, and are not included in the bill passed by the Senate.

Inter Partes and Post-Grant Reviews

S. 23 mandates changes to the options available for post-grant USPTO review proceedings by (1) replacing the existing *inter partes* reexamination system with *inter partes* review proceedings; and (2) introducing a new proceeding titled "post-grant review." Both *inter partes* and post-grant reviews are patent revocation proceedings administered by the USPTO. They would operate similarly to the existing reexamination system, which has been part of U.S. law since 1981. The USPTO currently administers two types of reexamination proceedings, termed *ex parte* and *inter partes*.

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,[74] 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

[72] *Ibid* at 1341.

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

[74] The American Inventors Protection Act of 1999, P.L. 106-113, was part of the Intellectual Property and Communications Omnibus Reform Act of 1999, attached by reference to the Consolidated Appropriations Act for Fiscal Year 2000. President Clinton signed this bill on November 29, 1999.

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.[75] Reexamination also allows further access to the legal and technical expertise of the USPTO after a patent has issued.[76] However, some commentators believe that reexamination proceedings have been employed only sparingly and question their effectiveness.[77]

S. 23 would establish a new proceeding termed a "post-grant review." Unlike current reexamination proceedings, petitioners may challenge validity based upon on any ground of patentability in a post-grant review. A post-grant review must be filed within nine months of patent issuance, and must be completed within one year of its commencement, with an extension of six months possible for good cause shown. As well, the individual who commenced the proceeding, along with his privies, are barred in the future from raising issues that were "raised or reasonably could have been raised" during the post-grant review.

S. 23 also replaces existing *inter partes* reexamination proceedings with a similar system termed "*inter partes* review." A notable difference between the existing and proposed proceedings is that the USPTO would be required to complete the proceeding within one year of its commencement, with an extension of six months possible for good cause shown. In broad outline, the bill would allow a person who is not the patent owner to file a petition requesting *inter partes* review nine months after a patent issues or reissues, or the conclusion of any post-grant review, whichever occurs later. The petitioner bears the burden of proving a proposition of unpatentability by a preponderance of the evidence.

In contrast to the proposed post-grant review, the basis for requesting an *inter partes* review is restricted to patents or printed publications. As a result, patent challenges under *inter partes* review are limited to the patentability issues of novelty and nonobviousness.[78] Post-grant reviews would allow a patent challenger to raise additional patentability issues, such as unpatentable subject matter or lack of enablement, that are not based upon a patent or printed publication. Under the time frames established by S. 23, the effective result is that a patent may be challenged on any basis of any patentability issue within nine months from the date it issued (via post-grant review), and thereafter on the grounds of novelty and nonobviousness (via *inter partes* review).

Under S. 23, an accused infringer may not seek *inter partes* review if he has already filed a lawsuit challenging the patent or more than six months have passed since the date the accused infringer was served with a complaint alleging infringement of that patent. S. 23 affords the patent proprietor a single opportunity to amend its patent during the proceeding, with further opportunities available with good cause shown. Should the patent survive the *inter partes* review

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

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

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

[78] Notably, the proposed restriction of *inter partes* review to patents and printed publications limits the grounds on which a patent challenger may request such a review. Once a patent is subject to *inter partes* review, the USPTO may potentially consider other pertinent patentability issues, such as claim definiteness.

proceeding, the individual who commenced the proceeding, along with his privies, are barred in the future from raising issues that were "raised or reasonably could have been raised."

Many observers have called for the United States to adopt a more effective post-grant administrative revocation system in order to provide timelier, lower cost, and more efficient review of issued patents.[79] 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.[80] However, concerns have arisen over oppositions because they too may be costly, complex, and prone to abuse as a means for harassing patent owners.[81] A successful post-grant review proceeding will require a balancing of these issues.

Transitional Program for Covered Business-Method Patents

As amended, S. 23 creates a transitional post-grant review proceeding for the review of the validity of certain business method patents. This transitional proceeding would be limited to patents that claim "a method or corresponding apparatus for performing data processing operations utilized in the practice, administration, or management of a financial product or service, except that the term shall not include patents for technological inventions." Only individuals who have been either sued for infringement or charged with infringement of a business method patent may petition the USPTO to commence such a proceeding. The transitional program would apply to all business method patents issued before, on, or after the date of enactment of the legislation. S. 23 stipulates that a party may seek a stay of litigation related to the transitional proceeding, and that the district court's decision may be subject to an immediate interlocutory appeal to the Federal Circuit. This transitional program is subject to a sunset provision that would repeal the program after four years.

Citation of Prior Art

The ability of members of the public to cite to the USPTO information that may be pertinent to the validity of a granted patent would be augmented under the provisions of S. 23. Section 301 of the Patent Act currently allows any person at any time to cite "patents or printed publications" that person believes "have a bearing on the patentability of any claim of a particular patent."[82] That person may also optionally include a written statement explaining his views. The USPTO then places these "prior art citations" in the patent's official file, where they are accessible to the public. The name of the person who files a prior art citation may be kept confidential by request.

S. 23 expands the sorts of documents that may be cited under section 301. The bill would allow the citation of written statements that the patent owner has filed before a federal court or the USPTO regarding the scope of the patent's claims. Under the bill, citations could consist of "prior art consisting of patents or printed publications [believed] to have a bearing on the patentability of any claim of a particular patent."

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

[80] *Ibid.* at 103.

[81] *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.

[82] 35 U.S.C. § 301.

Preissuance Submissions

The ability of members of the public to submit information to the USPTO that is pertinent to pending applications would be increased under S. 23. 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.[83]

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."[84] 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.[85] 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.[86]

The possibility for preissuance submissions would be expanded by S. 23. Under the bill, any person may 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 first rejection of any claim by the USPTO examiner. Such a submission must include "a concise description of the asserted relevance of each submitted document."

Most observers agree that ideally, the USPTO should 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

[83] 37 C.F.R. § 1.291.

[84] 35 U.S.C. § 122(c).

[85] 37 C.F.R. § 1.99.

[86] U.S. Dept. of Commerce, U.S. Patent & Trademark Off., Manual of Patent Examining Procedure § 1134.01 (8th ed. July 2008).

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 ultimately delay examination. The proposals attempted 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.

Venue

As originally introduced, S. 23 would have altered the venue provisions that apply to patent infringement trials and to appeals from the USPTO. Amendments to S. 23 following debate on the Senate floor struck those provisions concerning patent infringement litigation. Modifications to venue for USPTO appeals have been retained, however, in the version passed by the Senate.

The requirement of venue complements the more fundamental requirement of jurisdiction in federal litigation. The venue statute provides for which court, out of those that possess personal and subject matter jurisdiction, may most conveniently hear the specific lawsuit in question.[87] Congress has enacted a specialized venue statute that applies only to patent cases. 28 U.S.C. § 1400(b) provides that in patent litigation, venue is proper either: (1) in the judicial district where the defendant resides, or (2) where the defendant has committed acts of infringement and has a regular and established place of business. An important question under this provision is where a corporation is deemed to "reside." Prior to 1988, a corporation was viewed as residing in its state of incorporation.[88] Commentators have explained that during this period, the patent venue statute was fairly restrictive, tending to move infringement litigation into the defendant's seat of operations.[89]

Congressional amendments subsequently liberalized venue concepts in patent litigation. In 1988, Congress adopted a new definition of "reside" as it applies to venue for corporate defendants.[90] Under the new definition, a corporation is presumed to reside in any judicial district to which it could be subject to personal jurisdiction at the time the litigation commences. Congress codified this change in a separate provision found at 28 U.S.C. § 1391. Although there is no evidence that Congress contemplated that these reforms would hold consequences for the specialized patent venue statute, the Federal Circuit nonetheless held that this amendment should also be read into § 1400(b).[91]

The result of the 1988 amendments has been significant for corporate defendants, which constitute the majority of defendants in patent litigation. Although § 1400(b) still governs venue in patent cases, few if any plaintiffs rely upon the restrictive second prong of that section. Instead they base venue upon the "residence" requirement of the first prong—which now is entirely conterminous with personal jurisdiction, and which for larger corporations is likely to include every federal district in the country. For corporate defendants, then, the venue statute has

[87] *See* Wachovia Bank v. Schmidt, 546 U.S. 303 (2006).

[88] *See* Fourco Glass Co. v. Transmirra Prods. Corp., 353 U.S. 222 (1957).

[89] *See* Schechter and Thomas, *supra*, at § 10.1.3.

[90] Judicial Improvements and Access to Justice Act, P.L. 100-702, tit. X, § 1013(a), 102 Stat. 4642, 4669 (1988).

[91] VE Holding Corp. v. Johnson Gas Appliance Co., 917 F.2d 1574 (Fed. Cir. 1990).

essentially become superfluous, for the same standards governing personal jurisdiction also dictate whether a court may provide an appropriate venue or not.

Some observers allege that the liberal venue statute promotes forum shopping, allowing patent proprietors to bring suit in courts that they believe favor patent owners over accused infringers. One such "magnet jurisdiction" is said to be the rural Eastern District of Texas, and in particular the Marshall, TX, federal court. According to one account, many observers "wonder how an East Texas town of 25,000—even if it was named after Supreme Court Justice John Marshall—came to harbor an oversized share of intellectual property disputes."[92] In addition, reportedly "many of the local lawyers who once specialized in personal injury cases are turning their attention to intellectual property law."[93] Others believe that the existence of a single appellate court for patent cases, the Federal Circuit, minimizes forum shopping concerns, and that certain district courts attract patent cases due to their expertise and timeliness, rather than an inherent favoritism for patent holders.[94]

As originally introduced, S. 23 succinctly provided that "[f]or the convenience of parties and witnesses, in the interest of justice, a district court shall transfer any civil action arising under any Act of Congress relating to patents upon a showing that the transferee venue is clearly more convenient than the venue in which the civil action is pending." This provision was removed from the bill by amendment. S. 23 retains a provision that would alter the venue of suits where the USPTO is a party from the District Court for the District of Columbia to the District Court for the Eastern District of Virginia.

USPTO Fee-Setting Authority

The USPTO enjoys certain rulemaking authority provided by law. The USPTO may establish regulations that "govern the conduct of proceedings" before it, for example, as well as regulations that "govern the recognition and conduct" of patent attorneys.[95] However, the fees charged by the USTPO currently are determined by Congress. S. 23 proposes that the USPTO be granted the additional authority "to set or adjust by rule any fee established or charged by the Office" under certain provisions of the patent and trademark laws. This proposal appears to provide the USPTO with greater flexibility to adjust its fee schedule absent congressional intervention. S. 23 would require that "patent and trademark fee amounts are in the aggregate set to recover the estimated cost to the Office for processing, activities, services and materials relating to patents and trademarks, respectively, including proportionate shares of the administrative costs of the Office."

The amended version of S. 23, as passed by the Senate, establishes within the Treasury of the United States a "United States Patent and Trademark Office Public Enterprise Fund." Most fees collected by the USPTO would be placed into this Fund. The USPTO would then be allowed to access this Fund to cover its administrative and operating expenses without fiscal year limitation.

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[92] Allen Pusey, "Marshall Law: Patent Lawyers Flood to East Texas Court for Its Expertise and 'Rocket Docket'," *Dallas Morning News* (March 26, 2006), 1D.

[93] *Ibid.*

[94] *See* Xuan-Thao Nguyen, "Justice Scalia's 'Renegade Jurisdiction': Lessons for Patent Law Reform," 83 *Tulane Law Review* (2008), 111.

[95] 35 U.S.C. § 2(b)(2). It should be appreciated that "Congress has not vested the [USPTO] with any general substantive rulemaking power.... " Cybor Corp. v. FAS Techs, Inc., 138 F.3d 1448, 1479 (Fed. Cir. 1998) (en banc) (Newman, J., additional views).

Not later than 60 days after the end of each fiscal year, the USPTO would be required to submit a report to Congress that summarizes previous operations and provides a detailed plan for the upcoming fiscal year.

Under current law, patent applicants that qualify as "small entities"[96] are entitled to a 50% discount of many USPTO fees. S. 23 establishes a new "micro entity" category of applicants. A micro entity must make a certification that it qualifies as a small entity, has not been named on five previously filed patent applications, does not have a gross income exceeding three times the average gross income, and has not conveyed an interest in the application to another entity with an income exceeding that threshold. The Senate-passed bill also includes any employee of a "State public institution of higher education" within the definition of a micro entity (without having to make the preceding certifications). Micro entities would be entitled to a 75% discount of many USPTO fees. The USPTO Director is given authority to limit those who qualify as a micro entity if such limitations "are reasonably necessary to avoid an undue impact on other patent applicants or owners and are otherwise reasonably necessary and appropriate." The USPTO must inform Congress at least three months in advance of imposing such limitations.

Supplemental Examination

A new post-issuance administrative proceeding termed "supplemental examination" is created by S. 23. This proceeding appears to be based upon a need to address concerns over the legal doctrine of inequitable conduct, a topic that bears some explanation. 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.[97] As a result, the patent system relies to a great extent upon the applicant's 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 might 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.[98] 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.[99] Second, such nondisclosure or misrepresentation must have been intentional.[100]

[96] "Small entities" consist of "with respect to their application to any small business concern as defined under section 3 of the Small Business Act, and to any independent inventor or nonprofit organization as defined in regulations issued by the Director." 35 U.S.C. § 41(h).

[97] 35 U.S.C. § 122(a) (stating the 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.... ").

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

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

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

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. Some observers have expressed concerns 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 motives and conduct of the patentee's personnel to intense scrutiny, and provides an avenue for discovery of attorney-client and work product documents....[101]

The Federal Circuit has stated that "the habit of charging inequitable conduct in almost every major patent case has become an absolute plague."[102] 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.[103]

Due to these perceived burdens upon patent litigation, some experts have proposed that the inequitable conduct defense be eliminated.[104] 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.[105]

S. 23 would permit patent owners to request a "supplemental examination" in order to "consider, reconsider, or correct information believed to be relevant to the patent." If the USPTO Director believes that this information raises a substantial new question of patentability, then a reexamination will be ordered. S. 23 provides that a "patent shall not be held unenforceable ... on the basis of conduct relating to information that had not been considered, was inadequately considered, or was incorrect in a prior examination of the patent if the information was considered, reconsidered, or corrected during a supplemental examination of the patent." The

[101] 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.

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

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

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

[105] 1992 Advisory Commission, *supra*, at 114.

supplemental examination request and resulting reexamination must be concluded prior to the start of litigation for the patent to obtain this benefit.

The proposed supplemental examination serves a similar goal as the existing reissue procedure—correction of an issued patent that may be inoperative or invalid.[106] A significant distinction between supplemental examination and reissue is that the latter proceeding only applies to patents that are defective due to an "error without any deceptive intention." As a result, patent proprietors must identify an error, such as the existence of a highly relevant journal article that qualifies as prior art, in order to reissue a patent. In addition, reissue may not be used to rehabilitate a patent that was procured through inequitable conduct.[107] In contrast, supplemental examination is not limited to situations where an error occurred. The proposed proceeding would also allow a patent that had been acquired through inequitable conduct to be rendered enforceable under the stipulated conditions.

Residency of Federal Circuit Judges

Under current law, each Federal Circuit jurist must "reside within fifty miles of the District of Columbia" while in active service.[108] S. 23 would eliminate this requirement.

Liberalization of the residency requirement would potentially broaden the pool of individuals eligible for service on the Federal Circuit. This reform may also be appropriate for a court that enjoys jurisdiction over patent appeals that arise across the United States.[109] No other federal appellate court is subject to a similar residency requirement.[110] On the other hand, because the Federal Circuit courthouse is located in Washington, DC, the current residency rule might promote greater interaction among its jurists.

Tax Strategy Patents

In recent years, the USPTO has issued patents on financial, investment, and other methods that individuals might use in order to minimize their tax obligations.[111] The so-called "SOGRAT" patent, U.S. Patent No. 6,567,790, has been identified as one such "tax planning method" patent. The SOGRAT patent is titled "[e]stablishing and managing grantor retained annuity trusts funded by nonqualified stock options." The patent's abstract explains that it concerns:

> An estate planning method for minimizing transfer tax liability with respect to the transfer of the value of stock options from a holder of stock options to a family member of the holder. The method comprises establishing a Grantor Retained Annuity Trust (GRAT) funded with nonqualified stock options. The method maximizes the transfer of wealth from the grantor of the GRAT to a family member by minimizing the amount of estate and gift taxes paid. By

[106] *See* 35 U.S.C. §§ 251-252.

[107] Aventis Pharma S.A. v. Amphastar Pharmaceuticals, Inc., 525 F.3d 1334, 1341 n.6 (Fed. Cir. 2008).

[108] 28 U.S.C. § 44(c).

[109] 28 U.S.C. § 1295(a)(1).

[110] Marcia Coyle, "Court's Residency Rule May Fall: Federal Circuit Rule Limits Bench Talent," 29 *National Law Journal* no. 44 (July 9, 2007), 1.

[111] *See* CRS Report RL34221, *Patents on Tax Strategies: Issues in Intellectual Property and Innovation*, by John R. Thomas.

> placing the options outside the grantor's estate, the method takes advantage of the appreciation of the options in said GRAT.

Tax planning method patents have been the subject of a spirited debate.[112] Some observers believe that such patents negatively impact social welfare. According to some experts, tax planning method patents may limit the ability of taxpayers to utilize provisions of the tax code, interfering with congressional intent and leading to distortions in tax obligations.[113] Others assert that tax planning method patents potentially complicate legal compliance by tax professionals and taxpayers alike.[114] Still others believe that the patent system should not provide incentives for individuals to develop new ways to reduce their tax liability.[115]

On the other hand, some commentators explain that patents concerning the broader category of "business methods" have been obtained and enforced for many years.[116] Legislation enacted in 1999 that accounted expressly for patents claiming "a method of doing or conducting business" arguably approved of such patents.[117] Some observers believe that tax planning method patents present a positive development offering taxpayers access to a variety of legal tax minimizing strategies. In addition, these patents may potentially improve the public disclosure of tax shelters for the attention of Congress and federal tax authorities.[118] Other experts assert that many kinds of patents, on subject matter ranging from automobile seat belts to airplane navigation systems, potentially involve legal compliance.[119]

Under S. 23, for purpose of evaluating whether an invention meets the requirements of novelty and nonobviousness, "any strategy for reducing, avoiding, or deferring tax liability, whether known or unknown at the time of the invention or application for patent, shall be deemed insufficient to differentiate a claimed invention from the prior art." Under this rule, unless a tax strategy patent claimed an additional component that met the novelty and nonobviouness requirements—such as new computer hardware—then the invention could not be patented. S. 23 stipulates that this provision does not apply to that part of an invention "used solely for preparing a tax or information return or other tax filing...." A stand-alone bill, S. 139, would act similarly to section 14 of S. 23.

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[112] *See, e.g.,* Jo-el J. Meyer, "Proliferation of Retirement Plan Patents Poses Problems for Practitioners," *Patent, Trademark, & Copyright Journal* (BNA June 8, 2007), 186; Wealth Transfer Group LLC v. Rowe, D. Conn., No. 3:06cv00024 (AWT), filed January 6, 2006.

[113] *See* Letter from Jeffrey R. Hoops, Chair, American Institute of Certified Public Accountants Tax Executive Committee, to Members of Congress (February 28, 2007) (available at http://tax.aicpa.org/Resources/Tax+Patents/AICPA+Urges+Congress+to+Address+Tax+Strategy+Patents.htm).

[114] *See* Letter from Kimberly S. Blanchard, Chair, New York State Bar Association Tax Section, to Members of Congress (August 17, 2006) (available at http://www.nysba.org/Content/ContentGroups/Section_Information1/Tax_Section_Reports/1115rpt.PDF).

[115] *See* William A. Drennan, "The Patented Loophole: How Should Congress Respond to This Judicial Invention?," 59 *Florida Law Review* (2007), 229.

[116] *See* Andrew F. Palmieri & Corinne Marie Pouliquen, "A Primer on Business Method Patents: What You Need to Know for Your Real Estate Practice," 21 *Probate and Property* (May/June 2007), 26.

[117] First Inventor Defense Act of 1999, P.L. 106-113, § 4302, 113 Stat. 1501 (codified at 35 U.S.C. § 273 (2006)).

[118] Drennan, *supra,* at 328 (noting this argument).

[119] Stephen T. Schreiner & George Y. Wang, "Discussions on Tax Patents Have Lost Focus," *IP Law 360* (available at http://www.hunton.com).

Best Mode

Currently, inventors are required to "set forth the best mode contemplated by the inventor of carrying out his invention."[120] Failure to disclose the best mode known to the inventor is a ground for invalidating an issued patent. The courts have established 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 she 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.[121]

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. Absent a best mode requirement, some observers say, patent proprietors may be able to maintain the preferred way of practicing their inventions as a trade secret. Members of the public are also said to be better able to compete with the patentee on equal footing after the patent expires.[122]

The best mode requirement has been the subject of ongoing discussion in recent years, however.[123] For example, a 1992 Presidential Commission recommended that Congress eliminate the best mode requirement. The Commission reasoned that patents also are 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."[124] This "enablement" requirement was believed to provide sufficient information to achieve the patent law's policy goals.[125]

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.[126]

[120] 35 U.S.C. § 112.

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

[122] *See* Dale L. Carlson *et al.*, "Patent Linchpin for the 21st Century? Best Mode Revisited," 87 *Journal of the Patent and Trademark Office Society* (2005), 89.

[123] *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), 125.

[124] 35 U.S.C. § 101.

[125] 1992 Advisory Commission Report, *supra,* at 102-03.

[126] *Id.* 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.[127] 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.

S. 23 would continue to apply the best mode requirement to all patents. However, violation of the best mode requirement would no longer form the basis for a defense to a charge of patent infringement during enforcement litigation or post-grant review proceedings. Compliance with the best mode requirement would remain subject to review by USPTO examiners during the initial prosecution of a patent, although USPTO rejection of applications based upon failure to comply with the best mode requirement is reportedly a rare circumstance.[128]

Clarification of Jurisdiction

S. 23 includes provisions governing which courts may hear patent cases. The bill, as passed by the Senate, confirms that state courts do not possess jurisdiction to hear claims for relief under the patent, plant variety protection, and copyright laws. S. 23 further provides that the Federal Circuit possesses jurisdiction over appeals relating to patent and plant variety protection cases.[129] In addition, cases are allowed to be removed from courts that do not possess jurisdiction and transferred to those that do.[130]

USPTO Satellite Offices

Under current law, the USPTO is required to maintain its principal office in the metropolitan Washington, DC, area. Current law further allows the USPTO to "establish satellite offices in such other places in the United States as it considers necessary and appropriate in the conduct of its business."[131] The USPTO recently announced it would open its first satellite office in Detroit, Michigan.[132]

Amendments to S. 23 included in the Senate-passed version of the bill would mandate the USPTO to establish three or more satellite offices in the United States subject to available resources. S. 23 explains that the satellite offices are intended to increase inventor outreach activities, enhance patent examiner retention, improve recruitment of patent examiners, decrease the number of unexamined patent applications, and improve the quality of patent examination. The USPTO is required to ensure the geographic diversity of its satellite offices. S. 23 would also designate the Detroit, Michigan satellite office as the "Elijah J. McCoy United States Patent and Trademark Office."

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[127] *Id.* at 102-03.

[128] Jerry R. Selinger, "In Defense of "Best Mode": Preserving the Benefit of the Bargain for the Public, 43 *Catholic University Law Review* (1994), 1099 ("Failure to comply with best mode ... is not something an examiner normally can evaluate when reviewing the application.... ").

[129] *Id.* at § 17(c).

[130] *Id.* at § 17(d), (e).

[131] 35 U.S.C. §1(b).

[132] U.S. Patent and Trademark Office, Press Release, *USPTO to Open First Ever Satellite Office in Detroit* (Dec. 16, 2010), available at http://www.uspto.gov/news/pr/2010/10_65.jsp.

Other USPTO Programs

As amended, S. 23 would provide for three additional reforms relating to the USPTO. First, S. 23 would create a patent ombudsman program for small business concerns. Second, the legislation would allow the USPTO to prioritize examination of patent applications relating to technologies that are "important to the national economy or national competitiveness." Finally, S. 23 would require the USPTO to disclose the length of time between the commencement of each *inter partes* and post-grant review and the conclusion of that review.

Current Issues and Concerns

A number of changes to diverse aspects of the patent system are proposed in S. 23. Although these reforms were 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.[133] As a result, different industries can be expected to espouse dissimilar 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.[134] 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.[135]

In contrast, poor patent quality is said to create 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

[133] *See* Dan L. Burk & Mark A. Lemley, "Is Patent Law Technology-Specific?," 17 *Berkeley Technology Law Journal* (2002), 1155. *See also* CRS Report RL33367, *Patent Reform: Issues in the Biomedical and Software Industries*, by Wendy H. Schacht.

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

[135] *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.

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 arrangements, or perhaps decide not to market its product at all, rather than contest the patent proprietor's claims.[136]

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.[137] 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, patentees 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.[138]

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.[139]

S. 23 addresses the patent quality issue in part by allowing for increased public participation in USPTO decision-making through a pre-issuance submission procedure. This bill also permits post-issuance review proceedings, which would potentially allow interested parties to "weed out" invalid patents before they are the subject of licensing or infringement litigation.

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.[140] One study published in 2000 concluded that the average cost of patent enforcement was $1.2 million.[141] These expenses appear to be increasing, with one more

[136] *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.

[137] *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.

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

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

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

[141] Dee Gill, "Defending Your Rights: Protecting Intellectual Property is Expensive," *Wall Street Journal* (September
(continued...)

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."[142] Higher stakes litigation is even more costly according to a 2008 American Intellectual Property Law Association study: for patent suits involving damages claims of more than $25 million, expenses reportedly increased in 2007 to $5 million.[143]

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.[144] The Intel Corporation has recently been estimated to spend $20 million a year on patent litigation.[145]

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. S. 23 endeavors to make patent litigation less costly and complex through adoption of an administrative post-issuance review proceeding that could serve as a less expensive alternative to litigation, the introduction of supplemental examination, and modification of the best mode requirement.

International Harmonization

In the 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. Inventors who desire intellectual property protection in a particular country must therefore take specific steps to procure a patent within that jurisdiction.[146]

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. S. 23 addresses 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 more robust post-issuance review system, and assignee filing.

(...continued)

25, 2000), 6.

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

[143] *See* Bart Showalter, *Cost of Patent Litigation*, AIPLA Mid-Winter Conference, January 25, 2008, available at http://www.aipla.org/Content/ContentGroups/Speaker_Papers/Mid-Winter1/20083/Showalter-slides.pdf.

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

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

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

Potential Abuses by 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.[147] Patent speculators are sometimes termed "trolls," after creatures from folklore that would emerge from under a bridge in order to waylay travelers.[148] 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 total revenue of the Lemelson estate's patent licensing program has been reported as in excess of $1.5 billion.[149] But as explained by journalist Michael Ravnitzky, "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."[150] 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.[151]

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 assert its own claims of patent infringement against the plaintiff. Because patent speculators do not otherwise participate in the marketplace, however, the defendant is unable to counter with its own patent infringement charges. This asymmetry in litigation positions reportedly reduces the bargaining power of manufacturers and service providers, potentially exposing them to harassment.[152]

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.[153] 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, nonobvious invention to the public.[154]

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[147] *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.

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

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

[150] Michael Ravnitzky, "More Lemelson Suits," *The National Law Journal* (December 17, 2001), B9.

[151] James Pooley, "Opinion: U.S. Patent Reform—A Good Invention," *Electronic Business* (January 1, 2000), 72.

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

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

[154] 35 U.S.C. § 112.

Concerns over "trolling" are addressed in S. 23 by the introduction of post-issuance review procedures.

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.[155] Several studies commissioned by U.S. federal agencies have concluded that individuals and small entities constitute a significant source of innovative products and services.[156] Studies 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.[157] 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.[158]

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,[159] a federal statute that allowed universities and other government contractors to retain patent title to inventions developed with the benefit of federal funding.[160] In recent years there has reportedly "been a dramatic increase in academic institutions' investments in technology licensing activities."[161] 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.[162]

The U.S. patent system has long acknowledged the role, and particular needs, of independent inventors, small firms, and universities. For example, the patent statute calls for each of these

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[155] CHI Research Inc., *Small Firms and Technology: Acquisitions, Inventor Movement, and Technology Transfer*, report for the Office of Advocacy, U.S. Small Business Administration, January 2004, 2-3, available at http://www.sba.gov/advo/research/rs233tot.pdf. *See also* CRS Report RL30216, *Small, High Tech Companies and Their Role in the Economy: Issues in the Reauthorization of the Small Business Innovation Research (SBIR) Program*, by Wendy H. Schacht.

[156] 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 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.

[157] *See* Barnett, *supra*.

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

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

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

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

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

entities to receive a 50% discount on many USPTO fees.[163] As the USPTO is currently entirely funded by the fees it charges its users,[164] this provision effectively calls for larger institutions to subsidize the patent expenditures of their smaller competitors.

Beyond potentially diminished financial resources vis-à-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. For example, with respect to the proposed system of "prior user rights,"[165] some observers state that such rights would particularly benefit small entities, which may often lack a sophisticated knowledge of the patent system.[166] 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.[167] 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.

A number of provisions in S. 23 appear to be of particular interest to independent inventors, universities, and small businesses, including a shift to a first-inventor-to-file priority system, post-grant review procedures, and reduced fees for "micro entities."

Differing Patent Values 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 encounter the patent system in different ways, however. As a result, it can be expected that particular industries will react differently to the various patent reform proposals currently before Congress.[168]

Studies suggest that different industries attach widely varying values to patents. For example, one analysis 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.[169] In contrast,

[163] 35 U.S.C. § 41(g).

[164] CRS Report RS20906, *U.S. Patent and Trademark Office Appropriations Process: A Brief Explanation*, by Wendy H. Schacht.

[165] 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.

[166] *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.

[167] *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).

[168] For additional discussion on this issue see CRS Report RL33367, *Patent Reform: Issues in the Biomedical and Software Industries*, by Wendy H. Schacht.

[169] 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), 254.

members of the drug and chemical industries attach a higher value to patents where patents are considered the most effective method to protect inventions, particularly when biotechnology is included.[170] Among the reasons for these divergent assessments are "the cost of research and development (especially in relation to imitation costs), the technological risk associated with such research, and the availability of effective non-patent means of protection."[171]

Although broad generalizations should be drawn with care, two industries widely perceived as using 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, therefore "the relative value per patent is much higher in the life sciences."[172] Patents are also judged to be crucial to the pharmaceutical sector because of the large R&D investments associated with bringing a drug to market, as well as 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.[173]

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.[174]

This situation may be augmented by the multiplicity of patents often associated with a finished computer product that uses 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 general, 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. The differing valuation of patents among sectors leads to the expectation that distinct industries may react differently to the various patent reform proposals presently being considered by Congress, particularly the assessment of damages.

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[170] Wesley M. Cohen, Richard R. Nelson, and John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (or Not)*, NBER Working Paper 7552, Cambridge, National Bureau of Economic Research, February 2000, available at http://www.nber.org/papers/w7552.

[171] *See* Peter S. Menell, "A Method for Reforming the Patent System," 13 *Michigan Telecommunications & Technology Law Review* (2007), 487.

[172] California Healthcare Institute, *Impact of Patent Law Changes on Biomedical Investment and Innovation*, available at http://www.chi.org/uploadedFiles/CHI%20Patent%20Law%20changes%20paper.pdf.

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

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

Concluding Observations

As introduced in the 112th Congress, S. 23 arguably would work the most sweeping reforms to the U.S. patent system since the nineteenth century. However, many of the provisions in the bill, such as preissuance submissions and post-issuance proceedings, 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 assignee filing, also reflect the decades-old patent practices of Europe, Japan, and our other leading trading partners. As well, many of the suggested 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 experts 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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