3. The America Invents Act, patent priority, and supplemental examination

Robert C. Bird*

Patent reform in the United States has been long overdue. Ignored decades ago as an obscure backwater of the law, the advancement of patent law was not seen as an important initiative. As recently as the late 1970s, patent law was perceived as weak, ineffective and unable to keep pace with rapid technological changes (Rooklidge & Barker, 2009, p. 154). Until the previous year, the most recent significant substantive amendment by Congress was the Patent Act of 1952 (Patent Act, 1952).

That perception has now fully matured into a rich and robust understanding of the value of intellectual assets. The competitive advantage of new technological innovations relies heavily on the protection and enforcement of intellectual property rights. Patent law enforcement was no longer a technicality left to lawyer-scientists, but developed into a high-stakes game of corporate survival.

As the perceived value of patents increased, so predictably did the increase of patent applications. The United States Patent and Trademark Office (PTO) is the entity before which all applicants must file their inventions to apply for patent protection in the United States. Unfortunately, the PTO is simply overwhelmed with applications (Aste, 2012). Only 6,000 patent examiners are employed to purge a backlog of over 700,000 patent applications that now languish before the PTO (Love, 2012). The amount of patent applications will only increase each year, potentially extending the already sluggish three-to-four-year process even further into the future (Ackerman, 2011).

Cumbersome rules, expensive processes and an overwhelmed government bureaucracy all but compelled Congress to act. On 8 September 2011, Congress passed the Leahy-Smith America Invents Act (AIA) (America Invents Act, 2011). The AIA was no mere technical amendment, but a significant revision and update of US patent law. Hopes were high that the AIA would substantially impact the patent filing process.

According to one government report, the AIA "arguably makes the most significant changes to the patent statute since the 19th century" (Schacht & Thomas, 2012). Other sources are less laudatory, merely calling the AIA the most important revision of the last 50 years (Perkins, 2012). Regardless of the time, there is little argument that the AIA represents a major shift in patent policy and administration that has not been witnessed in decades.

With any major shift in the law, the question remains whether the changes in the AIA are uniformly for the better. The bill received widespread support from a normally fractured and politicized Congress, earning overwhelming margins of 304–117 and 89–9 in the House and Senate respectively (Congressional Record, 2011; Congressional Record, 2011a). President Obama praised the AIA as "much-needed reform [that] will speed up the patent process so that innovators and entrepreneurs can turn a new invention into a business as quickly as possible" (White House, 2011).

With much publicity presaging its passage and the Act's obvious importance, scholars and commentators have been quick to analyze its provisions. By far the most popular subject, indeed one that "scholars and policymakers have focused with an almost laser-like exclusivity" (Rantanen & Petherbridge, 2011) has been the imposition of a first-to-file system for determining patent priority (e.g., Abrams & Wagner, 2012). This system, which awards a patent to whomever first filed an application for an invention, replaces giving priority to the first to invent, a 200-year-old tradition in the United States. A second system comprising a new supplemental examination process also merits attention. The supplemental examination process enables patentees to correct certain errors and omissions subsequent to the issuance of the patent. One purpose of the subsequent examination is to reduce the number of legal challenges based on the inequitable conduct rule, a contentious doctrine that commentators believe generates excessive litigation and uncertainty. This chapter will examine both the impact of the first-to-file system and the impact of the supplemental examination rule.

Part I introduces the major provisions of the AIA. Part II examines the impact of the newly adopted first-to-file system of patent priority on various interest groups in the patent system. Part III discusses the impact of the patent priority system in a global context. Part IV highlights concerns with another significant and new innovation arising from the AIA, a supplemental examination system of patents. Part V concludes.

I. AN INTRODUCTION TO THE AIA

The AIA was the culmination of several years of debate about the future direction of the US patent system and several failed attempts by Congress to reach consensus (Gutterman, 2011, § 26:13.30). Various issues were of significant concern in the legislative debates preceding the AIA. The difference between US and global patent laws might increase the difficulty of domestic inventors to acquire rights abroad. There was also an interest in improving patent quality and decreasing unnecessary litigation costs. Legislators also expressed concern over whether universities, individual inventors and small businesses were playing a sufficient role in US economic growth through patenting. The result was an Act that attempted to address these and other issues (Schacht & Thomas, 2012). The AIA, through a variety of mechanisms, modified standards for patent applicants, introduces new rules for potential patent litigants, and reinforces funding to the beleaguered PTO. A summary of significant, though by no means all, changes made by the AIA follows.

A. Change to First-inventor-to-file System of Patent Priority

Prior to the passage of the AIA, the United States was the last industrialized nation to follow a first-to-invent priority system. Under the first-to-invent system, the patent office establishes priority by determining which applicant was the first to actually conceive of the invention. If two inventors filed applications for the same invention, the later applicant could challenge the earlier applicant through what is known as an interference proceeding. A rebuttable presumption would exist in favor of the first applicant, and the challenger would be tasked with offering evidence to show that her invention was conceived of prior to the first applicant (Recent Legislation, 2012).

The AIA changes this rule, which was once well established in the United States. Under the AIA, the US patent system joins the rest of the world in using a first-inventor-to-file system of priority. Under this system, the date on which the invention was actually invented is not dispositive when determining patent priority between two applicants. Instead, the inventor who first files an application with the patent office will be deemed to have first priority for the patent (Schacht & Thomas, 2012). The AIA also contains a grace period during which inventors have one year to decide whether to file patent application after a disclosure of the invention is made to the public (Perkins, 2012).

B. Expansion of Prior Commercial Use Defense

The commercial use defense under the AIA is not entirely new, but rather an enlargement of a defense that was only applicable under limited circumstances. The commercial use defense originates from the American Inventors Protection Act of 1999 (AIPA, 1999). If an inventor obtained a patent, this defense allows an earlier commercial user to have a defense against patent infringement. Under the AIPA, this defense was only available to business method patents (AIPA, 1999). The AIA expands this defense to be available for any type of patentable invention. The prior commercial use must have occurred at least one year prior to the inventor's public disclosure of the invention, or the inventor's filing date, whichever is earlier. A successful defense does not invalidate the patent, is transferrable only under limited circumstances, and must be proven by clear and convincing evidence (Perkins, 2012; Herrington, Ilan, Jedrey & Prunella, 2011).

C. Expansion of Inter Partes Proceedings and Modification of Post-grant Review Proceedings

The AIA introduces a new proceeding called a "post-grant review." This review allows challengers to contest the validity of a patent on a wide variety of grounds by filing a petition with the PTO. The petition must be filed within nine months of the issuance of the patent. If the PTO finds a novel question of law or concludes that it is more likely than not that one of the challenged claims against patentability would succeed, the challenge escalates to a post-grant review (Schneider, 2011). The review, heard by the Patent Trial and Appeal Board (PTAB), reviews the claim with full participation of both parties. The PTO must act quickly, making a final decision within one year of the commencement of the review with a six-month extension if the PTO can show good cause for the delay (Schacht & Thomas, 2012, p. 11). The losing party can appeal the decision to the United States Court of Appeals for the Federal Circuit (Diebner, 2011).

The challenger need only marshal a preponderance of the evidence to show unpatentability, a standard that is lower than patent challenges in court, which must be proven by clear and convincing evidence. However, the challenger must consider carefully when it is appropriate to file a post-grant review challenge. Under the AIA, the challenger must raise patentability issues known to it in that proceeding, or else it risks being prevented from doing so at a later time (Herrington et al., 2011).

In addition to introducing new post-grant review proceedings, inter partes proceedings have been expanded. Formerly known as inter partes

reexamination proceedings, the AIA introduces a new system called "inter partes review." This system is procedurally similar to the post-grant review proceedings previously described, but with some important distinctions. The inter partes review can only occur after the post-grant review period (nine months) has concluded. Furthermore, the scope of any challenge is limited. Inter partes review only allows challenges to prior art involving patents or printed publications, meaning in effect only challenges to novelty or obviousness in the requirement of patentability. Patent challenges under these proceedings, however, can be made throughout the entire patent term (Schacht & Thomas, 2012; Herrington et al., 2011).

D. Reform of Patent Marking Rules

Patent marking is the physical labeling of an item with the patent identification numbers associated with it. The purpose of such marking is to prevent innocent infringement and to deliver constructive notice that the listed patents protect the product. Although no duty to mark exists, entities that improperly mark their products with inaccurate patent identification numbers could be held liable under false marking statutes. A patentee can receive for each offense a fine of up to $500 (McCaffrey, 2011; Crudo, 2011).

The AIA sustains the false marking statute, but modifies it such that no longer can any person privately enforce the statute. Instead, only individuals who have suffered a "competitive injury" that arises from the false marking can sue and such individuals will only receive damages sufficient to compensate for the injury. False marking cases based on expired patents are eliminated (Yoches et al., 2011). In spite of these rules, the US government can continue to bring false marking suits without competitive injury and recover the maximum fine (Schacht & Thomas, 2012).

E. Introduction of a New Supplemental Examination Procedure

The AIA establishes a new procedure after the issuance of a patent called a "supplemental examination" (America Invents Act, 2011, section 12). The patent owner, not a challenger, commences a supplemental examination proceeding. Such a request asks the PTO to "consider, reconsider, or correct information believed to be relevant in the patent." The purpose of the examination is to enable owners to correct omissions or misstatements made through inadvertence or negligence during the course of the underlying patent application.

A patent owner requests the procedure, and if the PTO believes that the new information would raise a substantial new question of patentability, it

will order a reexamination. The reexamination provides protection to the patent owner from subsequent challenges. The AIA states 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 corrected during a supplemental examination procedure (America Invents Act, 2011, §12).

Congress recognized that the rule might encourage patent holders to simply wait until a challenger raises the inequitable conduct claim before requesting a supplemental examination. Toward that end, the AIA does not permit parties to request the examination after an inequitable conduct challenge has already been raised in a judicial dispute. The PTO also has the ability to cancel a patent claim if it concludes that "material fraud on the [Patent] Office may have been committed in connection with the patent that is the subject of the supplemental examination" (America Invents Act, 2011, §12).

F. Prohibition of Tax Strategy and Human Organism Patents

In recent years, there has been the rise of tax strategy patents, in which the inventor patents a financial structure or product that is supposedly used in a strategy or process to reduce an entity's tax burden. Such patents have come under increasing criticism for denying taxpayers equal access to the laws and interpretations of the Internal Revenue Code and increase the difficulty for tax advisors to render advice to clients (Chumney, 2009). The AIA eliminates the possibility of such patents, stating that any strategy for avoiding tax liability is insufficient to differentiate a claimed invention from prior art.

Patents claiming human beings have long been criticized, with claims that such patents could represent a badge of slavery that violates the Thirteenth Amendment to the US Constitution (Bagley, 2003). The PTO has similarly denied such patent applications (Halewood, 2008), and the AIA gives statutory footing to this prohibition. The AIA specifically states that no patent can be issued from a claim directed to or encompassing a human organism.

G. Filing and Oaths by Assignee of the Inventor

Under prior law, only the inventor could file a patent application, even if the inventor developed the invention as an employee with a contractual obligation to assign the invention to an employer. Under the AIA, an assignee of the right can now file the patent application instead. Inventors

must still be named on the patent application and submit required oaths that the individual is the original inventor. However, a patent assignee who is filing can submit a substitute statement justifying the absence of such oaths when the inventor is unwilling or unable to make the oath for various reasons (Herrington et al., 2011).

H. PTO Funding and Fee-setting

Funding of the PTO was traditionally determined by Congress. The AIA now gives the PTO the authority to set and adjust its fee schedule without congressional approval. Fees will then be placed in a reserve fund that is available to the PTO and may only be used for PTO operations.

Funding changes go beyond PTO flexibility. The AIA establishes a new category of applicants called a "micro-entity." Small entities, a classification that has already existed in patent law, must only pay one-half of the usual fee in many cases. The PTO defines small entities as individual inventors, non-profits, and businesses with fewer than 500 employees, among other requirements (Chien, 2011; Business Credit and Assistance, 2012, §121.802; Patents, Trademarks and Copyrights, 2012, §1.27(a)-(b)). Micro-entities need only pay one-quarter of the full fee assessed by the PTO. A filer can qualify as a micro-entity if it already qualifies as a small entity, has not been an inventor on more than four previous applications, lacks an income less than three times the median household income in the prior year, and has no obligation to assign to an entity with the aforementioned income (Ahmann & Rodewald, 2012).

II. THE AIA AND THE PATENT PRIORITY DEBATE

One of the most high-profile reforms the AIA brings is the change of patent priority system. The United States has traditionally utilized a "first-to-invent" system. Under this system, the PTO grants patent rights to the inventor who can prove the earliest date of invention of the new idea. Evidence is submitted to the PTO regarding the steps in the invention process and timing to support a particular invention date (Perkins, 2012). America has held on to the first-to-invent system with the most tenacity of any nation. Since 1998, when the Philippines decided once and for all to depart from a first-to-invent patent priority regime, the United States has stood virtually alone in using this method of patent priority (Sedia, 2007).

By far the more common approach has been the "first-to-file" patent priority system. Under this regime, the first inventor to file her application receives the patent. This priority system generally occurs without regard to

the date that the invention was actually created (Perkins, 2012). The first-to-file approach is used virtually everywhere else in the world.

A. Patent Priority, Empirical Research and the Uncertain Impact of First-to-file

The beneficial impact of the first-to-file system may be less certain than some predict. Relevant analyses and empirical evidence lean toward the AIA's first-to-file regime being less helpful to innovation and competitiveness than some might expect. The AIA's impact may even be negative. As with any new statute, however, the expected benefit and harm may vary according to one's perspective.

One important perspective is the differential impact of the filing regime on small firms and individual inventors. The focus on small entities is of no minor importance. Small inventors arguably have a disproportionally beneficial effect on the innovation ecosystem. Small firms and individual inventors, while not benefitting from the significant resources of large corporations, are also not bound by its potentially restraining norms, bureaucracy and groupthink. Small inventors can create outside the proverbial box and therefore be more disruptive to the culture of innovation, hastening the process of technological change. Furthermore, small inventors have an important role to play in certain industries. In high technology and pharmaceuticals, for example, small firms and individual inventors serve as innovation inputs to larger enterprises (Abrams & Wagner, 2012). Small firms should be made an important consideration in the overall welfare effects of the AIA.

Leading the way on this issue is a key empirical study by Abrams and Wagner (2012), which shrewdly exploited Canada's switch in 1989 from a first-to-invent to a first-to-file system. Canada was the last major industrialized nation to do so. Using patent data available in Canada from 1978 to the present, the authors compared the patenting behavior of individual inventors before and after the 1989 change. The authors found a statistically significant decline in patenting behavior by individual inventors relative to firms after the adoption of the first-to-file system.

Abrams and Wagner speculate a variety of reasons why individual inventors patent less. One reason may be that the first-to-file system places a premium on marshaling the resources necessary, and performing the requisite inventive steps, to filing a patent. This could include a better understanding of the complex patent laws, access to skilled legal assistance, and the institutionalized resources to prepare patent filings more quickly. The result could be that firms that have invented second or third may still receive patent protection because they have won the race to the

Patent Office due to their bureaucratic competence and legal expertise. As Rantanen and Petherbridge state in their debate with Jay Kesan, "[a] firm with resources—and a large potential book of business—can get its patent applications drafted more quickly than a firm without them" (Rantanen, Petherbridge & Kesan, 2012, p. 232).

In addition, Abrams and Wagner note that individual inventors may become demoralized due to the perception that first-to-file favors companies with resources or appears to be more based on luck or bureaucracy than inventive creation. Finally, individual investors might join firms after the first-to-file rule is implemented to take advantage of collected resources. The individual inventors that join firms might already be the ones sophisticated enough to know that bureaucratic expertise is necessary for quick filing. Their movement to firms might amplify the remaining pool of more vulnerable or unknowledgeable individual inventors.

While the authors express appropriate caution regarding implications of their findings, other earlier works modestly challenge their result. Mossinghoff (2005) found that small firms do not receive an advantage from the first-to-invent system of patent priority and there may be some small disadvantage under certain conditions. Though reporting mixed evidence, Lemley and Chien (2003) conclude that small entities do not necessarily benefit from the first-to-invent system. Both of these studies use data gathered from interference proceedings that determine the priority rules for multiple patent applications.

Mitigating such harm might be the AIA's provisions directed squarely at small businesses. The AIA establishes a new microcategory of small applicants. As noted earlier, this category reduces fees for qualified applications by as much as 75 percent (Patent Act of 1952, § 123). In addition, the AIA establishes an ombudsman to manage the concerns of small business (America Invents Act, 2011, § 28) as well as requires a study examining international patent protection for small businesses (America Invents Act, 2011, § 31).

While such measures may be helpful, they are not likely to counteract broader challenges of limited resources and lack of patenting expertise. Regarding the micro-category exception, section 123(e) of Title 35 of the United States Code empowers the Director of the PTO to limit micro-entity qualification as needed to "avoid an undue impact on other patent applicants" and as "otherwise reasonably necessary and appropriate" (Patent Act of 1952, § 123(e)). Thus, reduced fees for micro applicants, to the extent they convey an advantage now, can potentially be eroded if future PTO policy changes.

The small business ombudsman provision and the study regarding international patent protection, while potentially helpful, have uncertain

benefits. They do not deliver concrete changes to patent practice nor require any action taken as a result of the study or the appointment. As Rantanen and Petherbridge argue in their debate with Jay Kesan, these provisions pay "little more than lip service to the interests that are likely be trampled by the legislation" (Rantanen et al., 2012).

III. PATENT PRIORITY AND ITS GLOBAL IMPACT

While empirical evidence studying patent priority is important, it is also helpful to discuss the values that underlie a switch to first-to-file. One such value is that the change in patent priority to first-to-file may impact competitiveness of US companies relative to their foreign counterparts. The most obvious global impact may be the harmonization of the US patent filing system with the rest of the world. Patent laws have remained diversified across jurisdictions for three reasons: the legacy of the centuries-old principle of territoriality, the use of patent laws as a policy tool for economic growth, and varying cultural characteristics (Chun, 2011).

Harmonization of patent law has been the subject of discussion in the international arena for decades. Treaties such as the Agreement on Trade-Related Aspects of Intellectual Property Rights, better known as TRIPS (TRIPS, 1994), and the Patent Cooperation Treaty (PCT, 1970) are examples of such successful harmonization efforts. Yet, as a general rule, a lack of success in harmonization has been due to the inability to reconcile different perspectives on the objective of the global patent system (Kappos, 2011).

Adoption of the first-to-invent system by the United States is a significant step toward harmonization, especially because of the disproportionately large impact US patent rules have on global patent filers. The purported harmonization established by the US first-to-invent system is unfortunately not as complete as it could be. The AIA does not eliminate a one-year "grace period" whereby inventors can decide whether to disclose patent protection after disclosing the invention to the public (America Invents Act, 2011; 35 U.S.C § 102(b), 2012). This allows inventors time to decide whether patenting is even desirable and, if so, to complete the application. Publication in a journal, as well as sales and other technical disclosures, will commence the one-year grace period (Schacht & Thomas, 2012).

This limitation has encouraged criticism from commentators that the AIA's revision is not a true adoption of a first-to-invent system. As one explains, "[c]ontrary to the perception of US lawyers that [the AIA's revision] is a first to file [system], [it] is in fact a revised version of a

first to invent. . . . [T]he period that the inventor can rely on the first to invent is limited to the 12 months from the filing date and the evidence to establish the first to invent is limited to a disclosure" (Takenaka, 2011, p. 5). Another author claims that the AIA's grace period in effect creates a "first to publish" rule. The grace period enables inventors to publicly disclose the nature of the invention, and because it qualifies as prior art for other applicants, in effect causes competitors to be locked out (Recent Legislation, 2012, p. 1292).

In addition to harmonization effects, or lack thereof, the change from first-to-invent to first-to-file may impose transition costs on domestic filers. Domestic filers may need to expend resources in order to understand and navigate the new system. The transition cost for foreign filers, by contrast, might be less than their domestic counterparts because of their already present familiarity with the first-to-file patent system in their home country. This disadvantage, such that it might exist, would be most prominent for small organizations and individual inventors that focus mainly or exclusively on domestic patenting operations. Their experience with first-to-file would be limited, thus requiring a learning curve.

The transition cost disadvantage, however, might be minimal when more sophisticated domestic and foreign filers are compared. Larger firms with greater market power may already be familiar with first-to-file rules in foreign patent systems. Accordingly, the transition from first-to-invent to first-to-file may be no greater than their non-US counterparts.

Once the transition period ends and firms of various sizes absorb the necessary costs to navigate a first-to-file system, the cost calculus might change. Assume that the first-to-file system creates administrative efficiencies for the PTO that the first-to-invent system would lack. If the PTO experiences such efficiencies, the PTO may be able to process more applications more quickly with the same resources. Amplifying this effect is the AIA's strengthening of resources usable by the PTO. The AIA allows the PTO to adjust its fees as necessary, thus potentially generating new revenues and the hiring of additional patent examiners.

The benefits of increased efficiency would be shared roughly equally amongst the patent applicants. For example, if the average time to process a patent declines from three years to two and one half years, the six-month benefit per patent is enjoyed equally by filers. With the largest number of filers to the PTO being of US origin, that would mean that the US filers would be the majority recipient of efficiency advantages over non-domestic competitors.

These advantages, however, can vary by context. As Hubbard (2012) notes, in fields where foreign inventors obtain more patents than their domestic counterparts, efficiencies will deliver the greatest surplus to

foreign inventors. As Hubbard laments in the context of improving competitiveness for US filers, "the U.S. patent office cannot save a sinking ship by speeding the rate at which it is taking on water" (Hubbard, 2012).

Sensitivity can also vary distribution of the efficiency benefit. Start-up firms may be more sensitive to the efficiency benefit as well as the harm caused by any delays due to the lack of resources that can sustain an entrepreneurial venture over time. Larger firms may be less sensitive to increased efficiency due to their improved ability to shoulder bureaucratic delays (Sichelman & Graham, 2010). Thus, the shift to first-to-file may impact different US firms in different ways according to size, industry and other variables.

Global changes made to the AIA, regardless of patent priority, may negate any disadvantage to US firms that might arise as a result of the shift to a first-to-file regime. For example, the PTO can streamline and improve the patent process in industries where the US has the greatest advantage.[1] Two programs pre-dating the AIA already hint at such a targeted expedite practice. An Accelerated Examination Program begun by the PTO in 2006 promised faster resolution if the invention improved the environment, contributed to the conservation of energy resources, or contributed to countering terrorism (Patents, Trademarks and Copyrights, 2012). Four years later, the PTO introduced a program to expedite the patenting of green technologies that would "create green jobs, and promote U.S. competitiveness in this vital sector" (Patent and Trademark Office, 2009). The latter program has now ended.

The AIA concretizes and broadens this PTO power. The AIA gives the PTO the authority to prioritize patent applications "for products, processes, or technologies that are important to the national economy or national competitiveness" (America Invents Act, 2011, § 25; Patent Act of 1952 § 2(b)(2)(G)). This departs from the targeted programs issued by the PTO and enables widespread patent reprioritization according to industry and technology. Such broad discretion presents significant discretion for the PTO to target competitiveness-enhancing measures, especially generated in the United States, for priority treatment.

However, granting the PTO such discretion is not without its pitfalls. There is no certainty that the PTO can skillfully identify products, processes, or technologies that generate a net gain to US filers if targeted for priority examination. No guarantee exists that the PTO has such expertise or that such targeting would not have the exact opposite effect of facilitating foreign filings at the expense of domestic ones. There is also a possibility that, if the benefits to expedited patenting are significant enough, foreign filers will reposition their patents such that they too receive the benefit of the facilitated review. To the extent that this is possible, it would

reduce the competitive advantage granted to domestic filers under a targeted program (Hubbard, 2012).

In addition, any attempt to deliver a benefit to US companies with the de facto exclusion of foreign filers would certainly raise claims of protectionism by foreign interests. There is nothing to stop foreign patent offices from enacting similar rules that disadvantage US filers to compensate for the protectionist advantage granted by PTO rules. Such targeting may even violate the TRIPS agreement. Article 27.1 of TRIPS requires member states to provide uniform patent rights across technologies (TRIPS, art. 27.1; Rose, 2012). The targeting of preference measures by the PTO may be just the type of behavior that the TRIPS agreement was intended to prevent, and may encourage other countries to see sanctions before the WTO (Hubbard, 2012).

While receiving significant attention with the passage of the AIA, the debate over first-to-file versus first-to-invent might be a less significant issue over the long run. Lemley and Chien (2003) were skeptical of whether such a change might have a real impact, concluding that no systematic bias exists in favor of one group or another in a first-to-file system. The AIA shift to a first-to-file system may not change this calculus, or at least the shift may not definitively define the allocated benefits in one direction or the other.

Furthermore, as explained, global changes made under the AIA may generate long-term benefits that overshadow costs related to patent priority. The micro-patent program offers reduced costs to small filers, though such discounts are by no means guaranteed. The targeted prioritization power given to the PTO by the AIA could, if used tactically, amplify any competitive advantages to domestic filers. This does not necessarily mean that advantages or disadvantages generated by a new first-to-file regime no longer exist. Rather, the impacts of other provisions under the AIA, while not generating as much academic discussion, might be the source of greater welfare effects than the change in patent priority. To say that adoption of a first-to-file system is "much ado about nothing" is probably not accurate. The system will change behavior and result in real impact. Instead, the adoption of a first-to-file system may be "much ado about less than we think" as other factors exert greater influence and underlying structures of patent protection that do significantly favor large firms over small remain firmly intact.

IV. THE POTENTIAL AND RISK OF SUPPLEMENTAL EXAMINATION

The supplemental examination procedure appears on initial review to be relatively benign. A patent filer is able to correct good faith mistakes in the patent document without fear that third parties in litigation at a later date will exploit such errors. The AIA introduced the supplemental examination procedure mainly to address concerns over the doctrine of inequitable conduct, well established in patent law. When an inventor files for a patent, the prosecution of that patent involves an interaction between the applicant and the PTO. The public does not participate. The patent system thus substantially relies on candor and honesty by the patent filer, and filers have "a duty of candor and good faith ... to disclose to the [Patent] Office all information known to that individual to be material to patentability" (37 C.F.R. § 1.56(a), 2011). Breach of this duty constitutes inequitable conduct and renders all claims of the patent unenforceable for the life of the patent (Cotter, 2011).

The power of the doctrine of inequitable conduct is that an accused infringer can raise it during patent infringement litigation. The tactical advantages of raising such a defense are significant, as it places the patent owner on the defensive and subjects the motives of the patent filer to scrutiny. The result is that patent defendants have been charging inequitable conduct in almost every case, causing the doctrine to become, in the words of at least one court, an "absolute plague" (*Burlington Indus. Inc. v. Dayco, Corp.*, 1988). The supplemental examination procedure attempts to reduce the overuse of the defense.

The critique of the supplemental examination procedure is that it might suppress claims of inequitable conduct too much. The doctrine serves the policy purpose of protecting the integrity of the patent system. Patent owners who receive patent protection, though under improper pretenses, are subject to challenge throughout the life of the patent protection. This incentivizes the patent owner to carefully submit information in support of a prospective patent that is accurate and justifiable. Giving the power to assert the claim to a third party provides a potentially self-interested and aggressive enforcement mechanism. In spite of the plague cited by courts and commentators, inequitable conduct does actually happen and serious breaches of the duty of candor can occur. It can potentially mitigate, though by no means eliminate, questions of patent quality in the US patent system (Dolak, 2010).

Rantanen and Petherbridge (2011) claim that supplemental examination offers nothing less than "patent amnesty." According to these authors, it encourages applicants to engage in strategies that it would have

never considered under the pre-AIA system. Information about prior art may not be disclosed in the initial patent application because of the opportunity to fix that disclosure (or avoid it altogether) through the supplemental examination and do so without risk of consequence. Such lack of disclosure or careless disclosure could weaken the patent system overall.

Two significant exceptions do exist to the blanket protection offered by supplemental examination.[2] The exceptions are present to prevent the previously mentioned advantage-taking behavior by the patentee. These exceptions, however, in practice appear to provide little disincentive for the patentee to reduce the quality or accuracy of its patent submission.

The first exception prohibits a patentee from utilizing a supplemental examination when an inequitable conduct allegation is already pled in a civil action. This is apparently intended to prevent patentees from using supplemental examination as a tactical and last-minute defense against inequitable conduct litigation. A patent applicant's own internal files, however, are not publicly accessible. It is therefore arguably unlikely that the factual basis will be uncovered before the discovery process in a civil action. Thus, patentees retain control of whether to immunize themselves before a challenger has an opportunity to learn about the inequitable contact and plead it (Rantanen & Petherbridge, 2011).

The second exception allows for criminal prosecution if "material fraud ... may have been committed in connection with the patent that is the subject of the supplemental examination" (America Invents Act, 2011, § 25). The possibility of criminal prosecution can no doubt be worrying, but in practice such prosecution is unlikely to occur. Federal law already prohibits willfully making a false statement to a branch of government in many circumstances punishable by fines or up to five years in prison (18 U.S.C. § 1001, 2006). However, assessment of fines and imprisonment has been rare in the patent context (Schneck, 2004–05), and thus threat of its application is unlikely to occur in a post-AIA world.

In sum, the supplemental examination appears to be a non-adversarial mechanism by which patentees can correct inaccurate information in their applications without fear of sanction or litigation. The risk, however, is that the new procedure may have the opposite effect in practice. Patentees, emboldened by the amnesty, may have little incentive to avoid obfuscation in their patent applications.

The result might be an increase in low-quality or invalid patents granted by the PTO. This could suppress innovation by deterring inventors from patenting or popularizing new discoveries for fear of infringement liability or the inability to secure a license (Ackerman, 2011). Rantanen and Petherbridge (Rantanen, Petherbridge & Kesan, 2012) go as far as to say that "in the view of the AIA, a firm might obtain a patent containing

claims it knows or strongly suspects are unpatentable by not providing the Patent Office with the facts giving rise to that knowledge or suspicion" (p. 231). Such a result may be a lamentable, though unintended, consequence of the AIA that may require future revision if dire predictions such as this one come to pass in practice.

V. CONCLUSION

The AIA represents the most significant change in patent law in over 50 years. An increasing backlog of applications before the PTO, the emergence of troubling new types of patents, and deficits in administrative proceedings made reforms to patent law long overdue. The result has been a revision that was intended to modernize the US patent system, increase its effectiveness, and improve its fairness to all participants.

Two changes merit particular attention. First, the change from a first-to-invent to a first-to-file system of patent priority has the potential to bring the United States in line with the patent systems of the rest of the world. Although promising, the harmonization with foreign patent systems is incomplete and the benefit to various US interests uncertain. Second, the supplemental examination procedure, while mitigating the excess of the inequitable conduct doctrine, has the potential to create problems of its own. The procedure can potentially encourage applicants to obtain patents using suspect means, and if the applicant feels the threat of being caught later, it can use the supplemental examination procedure to immunize itself from harm.

Although it has been some time since the previous major change in patent law, this does not necessarily mean that the patent community will need to wait another half century for further revision. The stakes for patent protection are as high as they have ever been. Increasingly greater value is found in patent protection, and firms are willing to spend even greater resources to protect their patent portfolios. As one attorney skeptically speculates, the AIA will not satisfy business and legal practitioners for long. "Within two or three years," one partner at a large intellectual property law firm predicts, "we will be talking about patent reform again. You can bank on it" (Seidenberg, 2011). This prediction is likely too optimistic, or perhaps pessimistic, depending on one's point of view. Nonetheless, if the AIA revisions do not generate their promised benefits to various patent interests, it will only be a matter of time before still new revisions are advocated to improve the patent process in the United States.

NOTES

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1. Regardless of any targeted programs, patent law may already be heterogeneous and perhaps beneficially so (Burk & Lemley, 2002; 2003).
2. A third exception exists regarding actions filed by the patent holder that involve the prohibition of unfair methods of competition and other unfair acts related to importation to the United States. The exception operates in a substantially similar fashion to the litigation defense mentioned in the text.

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