U.S. Patent Reform Act of 2011 ("America Invents Act"): The Transition from First-to-Invent to First-to-File Principle

by Shuba Haaldodderi Krishnamurthy

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A. Introduction

1 In September 2011, the America Invents Act – an extensive and wide-ranging patent reform law – was enacted in the United States of America. The adoption of these reforms was an attempt to (i) improve the efficiency of the patent system itself and the patent protection offered by it, and (ii) harmonize and bring the patent system of the United States into closer proximity with the systems of the rest of the world. Consistent with this objective of harmonization, the America Invents Act introduced a major change by replacing the existing "first-to- invent" principle with the "first-(inventor)-to-file" principle.

2 This article will begin with a brief overview of the history of patent reform in the United States leading up to the America Invents Act in section II. Section III will describe the two systems of first-to-invent and first-to-file in view of their merits and flaws. Section IV will focus on the first-inventor-to-file principle that has been adopted with the America Invents Act. In section V, this article will discuss the reasons rendering the transition necessary and the grounds of opposition to it. Section V reviews what the transition to first-inventor-to-file entails and the possible impacts and repercussions. Other main areas of change will be mentioned and outlined in section VI. The last section of the article, section VIII, contains the conclusion.

B. A Brief History of Patent Reform in the United States

I. Pre-20th century

3 The first patent laws in the United States were enacted in 1790 by President George Washington and constitute the basis of the US patent system. The statute was titled "An Act to Promote the Progress of Useful Arts" and is significant for pioneering, in the United States, the conferment by law of rights of inventors to their creations. It established a Patent Board, whose members were given absolute authority to grant a patent.[1]

4 The years leading up to 1836 saw several changes in the system (1793, 1800 and 1832) and culminated in a revision of the patent laws, subsequently requiring applications to be examined for novelty before a patent could be granted. The latter part of the 19th century saw many developments, including (i) in the patent law itself, owing to the establishment of international organizations like the Paris Convention for the Protection of Industrial Property of 1883,[2] which the US joined in 1887;[3] and (ii) also indirectly, due to the creation of the Circuit Courts of Appeals in 1893 after which "appeals from the Patent Office were transferred to the newly created Court of Appeal for the District of Columbia".[4] In 1952, major amendments were made, laying down the foundation for contemporary law and the patent system

of the last six decades. This was the last significant change prior to the adoption of the US Patent Reform Act of 2011.

II. 21st century

5 In recent years, especially since the year 2000, there have been repeated attempts to improve and harmonize patent law, e.g. the Patent Reform Acts of 2005, 2007 and 2009. The Reform Act of 2005 was in part based on and supported by reports by the Federal Trade Commission in 2003 and the National Academy of Sciences in 2004. Though the overall system was thought to work well, several modifications were considered necessary in light of the granting of questionable business-method patents, complications regarding the scope and impact of software patents, increasing and expensive patent litigation and the lack of harmonization on international levels.[5]

6 Among other changes, the Act also proposed a shift from the first-to-invent system.[6] However, any change in the patent system would have various far-reaching impacts on most industries, owing to the technical, economic and legal significance of patents. This ensured the existence of intense scrutiny from many industry giants, undeniably looking to protect their interests.[7] Accordingly, heavy lobbying, an absence of consensus and the existing socio-political setting all led to a failure to enact the proposed reform. The bulk of the amendments contained in the 2005 proposal were carried over into the Reform Act of 2007 when another attempt at changing the patent system was initiated.[8]

7 Although the bill passed the House of Representatives, it failed to clear the Senate and met with an end similar to its predecessors as a result of heavy opposition from various sectors and influential lobbying.[9] The last amendment endeavour prior to the America Invents Act was the Reform Act of 2009. While closely resembling the previous proposals, the institution of derivation proceedings was also recommended for the first time. In a culmination of the efforts and attempts of the previous decade, in 2011 the latest Patent Reform Act – known as the Leahy-Smith America Invents Act or, popularly, the America Invents Act – was passed by the United States Congress and signed into law on 16 September 2011 by President Barack Obama.[10] One very significant change brought about by the Act was the cessation of the first-to-invent system in favour of the first-to-file system, as a step towards being "consistent with patent laws throughout most of the world".[11] Other major changes include the authority accorded to the United States Patent and Trademark Office to determine fee structure and an overhaul of opposition and review proceedings after grant.[12]

8 The America Invents Act stipulates that the provisions will be effective upon expiration of a one-year period unless otherwise provided in the Act. Some changes were effective immediately, e.g. the Pro-Bono Program and the Human Organism Prohibition. Many provisions had already come into effect by 16 September 2012, e.g. inventor's oath or declaration, third-party submission of prior art in a patent application and post-grant review. All changes, including the significant first-inventor-to-file, will be effective as of 16 March 2013.[13]

C. First-to-Invent and First-to-File

I. First-to-invent

9 Now obsolete, this is arguably the one change which has generated the most controversy and attracted the most opposition and criticism. In this context, it is crucial to understand the concept underlying the first-to-invent rule in order to competently evaluate the impact and ramifications of the changes brought about by the America Invents Act.

10 The United States previously upheld the date of an invention as a rule of priority to determine the rights to a patent over the date of filing of the patent application. First-to-invent is a rule that deals with solving the key question of entitlement or ownership of the property rights to an invention. If the first person to develop an invention is given priority or precedence over all others, it may be described as a first-to-invent system. This fundamental rule shaped the nature and workings of the patent system in the United States.

> Example 1: For instance, Inventor A invents product P on 1 March and files a patent application on 10 March. Inventor B independently invents the same product P on 1 February, develops it and files a patent application on 20 March. Under the first-to-invent principle, Inventor B gets the patent.

11 Although not a *prima facie* right to the grant of a patent, when multiple parties or individuals claimed the right to the same invention, the dispute would be investigated under interference proceedings, and the first-to- invent would be the factor that determined precedence and priority over other parties involved. In other words, it was possible to rely on the date of invention to eliminate prior art. A significant point to be understood is that the right of the first inventor under first-to-invent is not a *prima facie* or an absolute right to the grant of a patent. There is no onus on the issuing authority, here the United States Patent and Trademark Office, to verify whether an applicant is the first inventor. In the event that more than one person claimed the right to the same invention, an investigation was conducted and the per-

son proven to be the first inventor of the invention would be given priority over the others even if the first inventor was not the first to file the patent application, subject, of course, to all patenting requirements being met.[14] In reality, this can be problematic and it involves expensive and long-drawn-out administrative proceedings.[15] The party claiming the right to the invention or claiming to be the first inventor is required to substantiate this claim by producing evidence of (i) 'conception' of the invention or the mental act of envisaging the invention and its application and (ii) its 'reduction to practice' or the subsequent efforts put into the actual implementation and fulfillment of the intended purpose of the conceived invention.[16] This could also alternatively be proven by the filing of a patent application.[17] Hence, it is very important to maintain meticulous records at every step, stage and process, beginning with the mental act of conceiving the invention and leading up to the final working of the invention as intended. The dates, times and circumstances surrounding the invention all take on influential or even crucial significance in the first-to-invent system.

12 However, it is also pertinent to note that as established by judicial precedent and United States case law, instances where the first inventor failed to obtain rights to the patent exist. There are court rulings which state that if an inventor initially sought prolonged protection of his invention as a trade secret, this act could be construed as abandonment, concealment or suppression and lacking due diligence on the part of the inventor. Consequently, the second inventor may be conferred with the rights to the patent. The rationale behind such a ruling is that the patent statute encourages prompt public disclosure, and in case of failure to do so, favours the other party who accomplishes what is intended by law.[18]

13 It may be concluded that the first-to-invent system assures protection to the first inventor and therefore allows the inventor time to develop the invention and conduct further research. However, in most cases it imposes no obligation of quick disclosure; this somewhat defeats the purpose of the patenting system, which is to provide protection in exchange for revealing technical developments. This can be seen as frustrating the objective of and the rationale behind the patent system.[19] And although the system may seem simple and straightforward, its application can be complicated, or at least difficult.[20]

II. First-to-file

14 Most industrialized nations and all major countries across the world (other than the United States) – including European countries, Japan and Canada – apply the 'first-to-file' rule of priority. Contrary to the first-to-invent rule, when patent rights to an invention are granted to the person who filed a patent application ahead of all other contenders, it falls under the 'first-to-file' system. The date of the application, by default, determines which person is entitled to the grant of a patent to an invention. Using the same example, a different outcome is achieved.

> Example 2: Inventor A invents product P on 1 March and files a patent application on 10 March. Inventor B independently invents the same product P on 1 February, develops it and files a patent application on 20 March. Unlike the previous scenario, Inventor A gets the paten under first-to-file.

15 Hence, there is the provision of an objective, clear means of determining priority which dispenses with any obligation on the part of the patent office to conduct time-consuming and cumbersome investigations to establish facts revolving around the invention. In addition, scope for dispute and litigation, or seeking redress in courts is narrow and reduced, owing to the clear method of determining priority.[21]

16 Most first-to-file patent systems also follow absolute prior art rules which stipulate that any disclosure before the date of filing, even by the inventors themselves, is to be considered prior art and would essentially be a bar to obtaining a patent.[22] The Japanese Patent Office is a notable exception to this practice and provides for a six-month window of disclosure in aid of universities and research institutions.[23]

17 The first-to-file system spurs early disclosure and contributes to the development of technology. It provides the applicant with an incentive to apply as soon as possible and thereby 'disclose' the invention on the one hand, and also simultaneously acts as a deterrent to hiding or keeping the invention secret.[24] However, it acts a disincentive to undertake research or to spend time developing the invention prior to filing or disclosing it. In the same vein, first-to-file can be considered more favourable and advantageous to large corporations which possess manifold resources to bring an invention faster from the inventor's table to the patent office in comparison to individual inventors and small businesses that mostly lack financial and manpower support.[25]

18 However, with the adoption of the America Invents Act, the United States has now adopted a first-inventor-to-file regime, which will be discussed in the next section of this article.

D. First-Inventor-to-File under the America Invents Act

19 With the passage of the America Invents Act into law, the patent system in the United States has figuratively undergone a tectonic shift. This law endorsed

the conversion to a first-inventor-to-file regime, bidding adieu to the two-century-old first-to-invent tenure. Most countries of the world currently conform to the first-to-file principle. The United States was one of the last countries that still adhered to the first-to-invent system.[26]

20 Although the first-inventor-to-file system is not identical to other systems around the world – in fact, it is claimed to be superior to the other first-to-file systems of other countries –[27] it is an advance towards harmonization. Prior to this recent development, this rule had consistently been successful in resisting attempts towards change and revision.[28] In fact, this has been one of the main focal points, if not the focal point, of the censure and opposition that was directed at the America Invents Act during its journey through the United States Senate and the House of Representatives before being signed into law by the President.

21 With the shift to first-inventor-to-file, the date of filing of a patent application assumes primary importance, though not to the exclusion of other patentability requirements. Consequently, fast disclosure and filing of an application after an invention has been conceived is of paramount importance. The effective filing date is the earliest priority date or the actual filing date in the absence of a priority claim to an earlier application.[29]

Example 3: For instance, Inventor A invents product P on 1 March and files a patent application on 10 March. Inventor B independently invents the same product P on 1 February, develops it and files a patent application on 20 March. Under the new system, Inventor A gets the patent.

22 However, as has been mentioned above, the patent system of the United States has shifted to what is now known as a first-inventor-to-file system and not a strict first-to-file regime. The presence of certain features and exceptions has led to the majority opinion that it concerns a hybrid system with aspects borrowed from both existing concepts, but nevertheless identical to neither the previously followed first-to-invent nor the globally dominant first-to-file.[30]

23 *Grace period*: First, it is pertinent to note the exception under the so- called grace period provided for under 35 U.S.C. § 102(b)(1), for disclosures of own inventions made during the first year prior to the effective filing date. § 102(b)(1) states

"Disclosures made 1 year or less before the effective filing date of the claimed invention - A disclosure made 1 year or less before the effective filing date of a claimed invention shall not be prior art to the claimed invention under subsection (a)(1) (...)"[31]

Example 4: To illustrate, Inventor A invents product P on 1 October and files a patent application on 10 October. Inventor B independently invents the same product P on 1 January, publishes in a scientific journal on 10 January, and files a patent application on 20 October. The publication of 10 January is prior art for Inventor A and takes away novelty of the invention. However, B's own disclosure is exempt because of the grace period and Inventor B gets the patent in spite of a later filing date.

24 Hence, the retention of the one-year grace period still affords a measure of protection to inventors in the form of a gestation period. The establishment of such a concept seems to be an attempt to look out for the interests of the academic world – research institutions, scientific publications and universities. The provision of this grace period distinguishes the first-inventor-to-file that has now been adopted in the United States from other strict first-to-file systems, e.g. the European system.

25 Derivation proceedings: Another distinct feature of the first-inventor-to- file system is the institution of derivation proceedings to cover an exception for cases where the first party to file unauthorizedly derived the invention from the second party.[32] § 135. states

"Derivation proceedings -

(a) INSTITUTION OF PROCEEDING - An applicant for patent may file a petition to institute a derivation proceeding in the Office. The petition shall set forth with particularity the basis for finding that an inventor named in an earlier application derived the claimed invention from an inventor named in the petitioner's application and, without authorization, the earlier application claiming such invention was filed (...)"[33]

26 Example 5:- Inventor A invents product P and files a patent application on 10 October. Inventor B, who works with A in the same room, has already filed a patent application for the same product P on 1 October. Inventor A alleges and proves that Inventor B derived product P from A, without authorization. Inventor A gets the patent despite having a later filing date.

27 "Thus, the second party may nonetheless obtain a patent on the invention despite the first party's earlier filing date".[34] Derivation proceedings supplant the former interference proceedings. The objective behind the formulation of such a hybrid system is suggestively to ensure a balance between the interests of all the affected parties across an array of fields and industries.[35]

E. From the United States' Perspective: Support for Change and Opposition to Change

I. Why first-inventor-to-file?

28 During its pendency, the America Invents Act had been subject to considerable criticism from various sectors of society. Nevertheless, the necessity for reform was not the point of contention. In fact, it was almost uniformly acknowledged as imperative for the following reasons.

29 The most important factor under consideration was harmonization. Modifying the US patent system to keep abreast of other international patent systems was deemed to be the key to global collaboration. This would result in mitigation of burdens straining all intellectual property systems because of the existence of disparate systems. Harmonized systems would also enhance job growth and encourage innovation by opening up business avenues in new markets and simultaneously enabling the possibility of protection across jurisdictions. As a combined consequence, this would ensure the prevention of devaluation of the currency of innovation.[36] Consequently, a shift from the first-to-invent rule to the first-inventor-to-file rule was considered essential.

30 Another important factor under consideration was that the patent system prior to the adoption of the America Invents Act, i.e. the first-to-invent system, was not considered to have kept pace with the astounding growth and development of technology. An outdated system implies inefficiency, and proponents of the Act argued that this was reflected in the workings of the United States Patent and Trademark Office, which perpetually combated excessive backlogs and furthermore resulted in inordinate amounts of delay in the granting of patents.[37] The need to change to an efficient patent system which would aid in expediting the patent examination and grant processes was therefore considered imperative.

31 Supporters of this reform also contended that inequities and uncertainties in the patent system act as threats to the growth of innovation and may have devastating consequences on the economy. Shielding innovators against economic and other exploitation of their inventiveness and efforts is one of the main functions of a patent system. But these uncertainties in the system were leading to the exploitation of the system, and inappropriate use of said protection for financial gain. Said flaws were also alleged to have increased the risk and cost of litigation–for instance, by fostering qualitatively inferior patents and encouraging speculators and patent 'trolls'.[38] The positive changes addressing these issues in the reform act lead to establishment of new, inexpensive and fast procedures to deter and defeat weak patents.[39] Also, uncertainties would be avoided and questions regarding the rightful entitlement to a patent would no longer rise under the first-inventor-to-file system.

II. Why not?

32 On the other hand, as previously mentioned above, the America Invents Act was also on the receiving end of vehement opposition. Although the need for reform in specific areas was recognized, the proposed nature of the amendments was extensively debated upon in an unfavourable light.

33 One of the major grounds of opposition was the prospective change from the unique first-to-invent system of the United States to the first-to file system followed by most countries of the world. This was mostly seen as the result of lobbying by giant corporations and alleged to favour "large businesses and in particular, well-financed, large foreign businesses over innovators",[40] individual inventors and small businesses in particular.[41] The competence and efficiency of the 'first-to file' system was questioned in light of revealing and unfavourable results upon comparison with the first-to-invent practiced in the United States.[42]

34 Furthermore, claims as to the unconstitutional nature of the change were propounded, and its constitutionality has been subsequently challenged in court.[43] In the United States, the first-to-invent has long been considered and regarded as an ideology as opposed to a mere rule that has been applied to determine priority. Its origins are considered directly traceable to the Constitution of the United States.[44] The "natural law theory of rights" and "the need to accommodate the dual sovereignty of states and federal government"[45] influenced the adoption of this system in the 18th century. As early as 1793, the United States Congress amended the Patent Act to state in Sec 3 as follows:

> *"(...)that every inventor, before he can receive a patent, shall swear or affirm that he does verily believe, that he is the true inventor or discoverer of the art, machine, or improvement, for which he solicits a patent (...)"*[46]

35 Since then, the law has consistently been interpreted as requiring very specifically "that patents be granted only to first inventors".[47] It has therefore long been considered an integral part of the patent system, and even believed to be one of the principal reasons enabling and realizing innovation in the United States. The withdrawal of the first-to- invent in favour of the first-inventor-to-file has therefore been vehemently opposed.

36 Opponents also took issue with the claimed creation of jobs,[48] and expressed scepticism, especially since the majority opinion was that the reform would favour large corporations which outsource jobs against small businesses and start-ups, which are one of the major employment generators.[49]

37 Another reason for resistance against harmonization was the resulting loss of the occasional edge that domestic applicants wielded over foreign applicants. This was seen as a justifiable and equitable measure that helped balance the economic and resource dominance of large corporations over small businesses and individual inventors.[50] In addition, general concerns about the cost effectiveness, the weakness of protection and the continued existence of sufficient incentive to innovate subsisted among individual inventors and small companies.

F. Impact of the Transition

38 This section will discuss the potential impact of the transition from the first-to-invent to the first-inventor-to-file system and the patent reforms from various perspectives. The transition of the United States patent system is set to happen in less than two months. At this point, 'educated guesses' may be made on the ramifications; this is 'polite-speak' to say that the actual impacts of the transition can only be speculated upon.

I. On inventors

39 The segment of society that is mostly affected by the changes in the patent system and the transition to first-inventor-to-file is the inventor or the patent applicant. As the effects on different sectors are divergent, this segment has been further classified into (i) individual inventors and small businesses, (ii) corporations and (iii) foreign applicants.

1. Individual inventors and small businesses: Negative

40 There has been very significant opposition to the shift to first-inventor- to-file by small businesses. The prevalent perception among these inventors is that abandoning the first-to-invent rule puts them at a distinct disadvantage when compared to larger corporations. The presumption is that in a race to the patent office, the tortoise would never win against the hare in the real world. To be able to judge whether and to what extent this is true, a direct comparison between the two systems is required.

41 Time: The contention is that the first-inventor-to-file does not allow an inventor sufficient time to develop his invention to a patentable stage. Seen on a stand-alone basis, this may seem untrue. However, the concept of time is relative, and in light of the practice followed up to now under the first-to-invent regime, the claim takes on realistic and high significance. Since individual inventors and small businesses have lesser manpower and lesser financial and technical resources at their disposal, it is logical to conclude that in actuality, they require more time to bring the invention to completion and file a patent application on it. Nevertheless, with the transition, two avenues in the form of the grace period and the provisional application will be available to inventors to grant an extended window of time to facilitate completion of their invention. Although not identical to the previous procedure, it does negate the protestations with regard to the provision of sufficient time.

42 Money: Another important area that is affected is money. Small businesses and especially single inventors are dependent on investors to fund their inventions and applications. Since timing is crucial under the first-inventor-to-file, there is not much scope for exploring investment possibilities.

43 Although not directly relevant, the fact that the transition is accompanied by significant fee reductions for micro entities is noteworthy and should at least be considered as a step to help offset the disadvantage borne by the 'little guy'.

44 Considering the above, it would be realistic to imagine that it would be hardest to cope with any change in the system for the people running a one-man show and for small businesses. However, whether the percentage it represents is large enough to justify change or resist it, as in this case, is another question.

45 Awareness about the transition and what it means to the inventor, adopting a policy of early filing, abandoning and amending practices that are now rendered obsolete and utilizing any available fee exemptions or financial advantages would contribute to mitigating the disadvantages and ensuring a smoother transition.[51]

2. Corporations and Co.: Positive

46 This is the sector that has a lot riding on this transition and patent reform. For big companies, patents today are less about innovation and more about other things, including legal defence and certainty, market dominance, negotiating power and, of course, monetary value. Pharmaceutical companies and, in the last decade and a half, technology corporations are the companies which most aggressively build and defend their patent portfolios. It is not uncommon for a company's patent portfolio to

be valued higher than the company itself. Hundreds of millions of dollars have been spent on lobbying the America Invents Act and this transition through the United States Congress. At first glance, the transition indeed seems suggestive of being beneficial to large companies. Upon reflection, this impression is reinforced.

47 Harmonization: Considering that most of the companies mentioned above are multi-national giants with a literal presence all over the globe, a harmonized system would make allowance for convenient internal coordination to strengthen or maintain their patents. Similar patent laws and patent systems would make strategies for investment in inventions and patents easier to plan and implement. Having said that, it is also pertinent to note that most big corporations already pursue practices that are geared to maximum optimization, and will be the sector least inconvenienced by the need to overhaul the existing procedural framework.[52]

48 Legal certainty: The transition to first-inventor-to-file can also be expected to benefit companies in another significant manner. Due to the high monetary investments and the economic significance of patents to companies, the legal certainty that the first-inventor-to-file brings with it is highly welcome. The priority rule of determination is now the date of filing the application – a straightforward, easily proven fact. In fact, a measure like this that helps avoid or at least narrow down the scope for litigation was desired and actively pushed for.

49 Prior art: The impact of the post-transition prior art provisions actually has dual connotations. One, it may have a restrictive, if not really negative impact from the perspective of such large multi-national companies. Previously, prior use or disclosure outside the United States was not a bar to patentability inside the United States. Therefore, companies must now follow up applications based on foreign inventions or products in a timely manner to avoid being barred from patenting their own inventions or products. However, there is a second, positive effect of the new prior art rules. Domestic companies or other competitors can no longer exploit foreign inventions or products of another company since any prior art or usage, foreign or not, may now be novelty-destroying and a bar to patentability. In the context of disclosure, the transition will demand complex strategies to be put in place. Companies would be inclined to pre-empt competitors' disclosure by resorting to 'defensive disclosures'. However, they must be cognizant of the effect of this disclosure as a bar to patenting in some strict first-to-file systems.[53]

50 Security concerns: One impact of the transition to first-inventor-to-file that is less evident and unlikely to be positive is an increase in the threat to intellectual property security. With the option of swearing behind or proving the origins of the invention now eliminated, there is an increased risk of intellectual property theft. This risk is elevated, especially in the case of big corporations where correspondence of a sensitive or valuable nature is exchanged across the globe.[54]

51 Hence, it is quite apparent that corporations will mostly reap benefits and be subject to impacts of a positive nature from the transition. In a lighter vein, it would not be surprising to shortly see a Wikileaks publication of 'money well spent' emails exchanged between these corporations.

3. Foreign inventors: Positive

52 The first-inventor-to-file has mostly been predicted to benefit multinational and non-US companies,[55] by virtue of moving a step closer to the foreign patent systems. International companies and investors will definitely need to acquaint themselves with the new patent laws and system in order to facilitate smooth navigation. In particular, the prior art provisions will be highly relevant. Mostly, non-US companies may choose to seek an expansion of protection internationally, subsequent to pursuit or acquisition of domestic patent protection.[56]

53 Although the transition will benefit such overseas entities by bringing clarity and higher certainty, it cannot claim to singlehandedly result in dramatic consequences. Other factors such as the efficient working of the Patent and Trademark Office and external economic factors may be expected to play a bigger role on such a level.[57]

II. Academic world: Open

54 An atypical entity in the patenting sphere is the world of academia – universities, scholars and research bodies – since the dissemination and interchange of research findings and information is a fundamental objective of their vocation. In the post-transition United States, publishing or disclosing materials – for instance, at academic gatherings and conferences – will not be lent with immunity against a patentability bar.[58]

55 Nevertheless, the first-inventor-to-file continues to furnish armour in the form of a one-year grace period. And there is something to be said for defensive disclosure as a deterrent to third parties procuring protection. Only, the problem here will be the possibility of complications ensuing divergent interpretations of what exactly constitutes prior art and what disclosures are covered by exemptions from the Patent and Trademark Office, courts and the universities themselves.[59]

56 Furthermore, it is relevant to record that in the pre-transition world, overseas rights would have been jeopardized anyway under the above- mentioned circumstances. From that perspective, it has always been prudent to precede such disclosures with patent applications.

57 It is probably unlikely that the level of restriction imposed by the new system on this sector of patenting society will have enough of an intimidating effect as to actually be an insurmountable impediment or hindrance.

III. United States Patent and Trademark Office and courts: Positive and Dual

58 The United States Patent and Trademark Office has been publicly endorsing the patent reforms and, in particular, the adoption of the first-inventor-to-file principle. To an organization bogged down by tremendous backlogs – as of September 2012, over 600,000 unexamined patent applications were in pendency –[60] any changes that bring forth a possible ease in administrative requirements and complexities would be highly welcome, and rightly so.

59 A caveat must be added that it would be incorrect to deduce that the previous first-to-invent system was the sole or even primary reason for this sorry state of affairs. Ergo, any expectations that the shift to first-inventor-to-file would magically eliminate the problems faced by the Patent and Trademark Office would be highly flawed and misinformed. In fact, the opposite is true, at least initially. Patent examiners will be forced to simultaneously juggle both systems over several years, a situation that is certain to be fraught with complexity.

60 But the important thing is that the transition proffers something long term – the laying of a policy and legislative foundation that changes the trend and can be built upon or added to.

61 The transition to the first-inventor-to-file indeed provides a higher level of certainty by removing subjective elements, and this can reasonably be expected to result in achieving higher efficiency levels and a lower scope for disputes at the Patent and Trademark Office.

62 The same can be said of courts in a manner. The certainty brought by the institution of objective factors to determine patent priority can be expected to be received favourably by courts. However, the United States is a nation of court precedent. Unlike the Patent and Trademark Office, the courts will be dealing with the interpretation of highly complex and intricate questions of both the old and the new laws for an extended period. This could prove costly, especially in light of the fact that a reduction in litigation was a much desired consequence expected from the transition.

63 It is therefore presently unclear whether the positive impacts will outweigh the accompanying necessary evils.

G. Other changes

64 The transition to first-inventor-to-file will not be able to singlehandedly render all the desired changes possible. A supporting framework dealing with other aspects of patent process and litigation is necessary. Accordingly, the range of policy and statutory changes effected by the America Invents Act is extensive. Some important changes are mentioned below.

65 Prior art changes: Previously, third-party use or foreign sales did not automatically preclude patent protection in the United States. However, novelty provisions in the America Invents Act have been broadened to implicitly include foreign public use, foreign sales and foreign offers for sale as prior art by effectively abolishing the so-called Hilmer doctrine.[61] "The Hilmer doctrine disadvantaged non-U.S. inventors who filed an application in their home country prior to filing in the U.S. under the Paris Convention, because the foreign application was not effective prior art against any other U.S. application under § 102(e) as it was not 'filed in the U.S.'"[62]

66 USPTO authority Re. Fees: "Subject to public hearings and Congressional oversight",[63] the USPTO may now fix its own fee schedule. The America Invents Act does not give the United States Patent and Trademark Office either full control of its funds or full immunity from fee diversion. Instead, a Patent and Trademark Fee Reserve Fund has been established to collect excess fees.[64]

67 Filing by other than inventor: With the adoption of the first-inventor-to- file, the patent system now permits an assignee, for instance, an employer, to file and prosecute a patent application, i.e. to be the applicant. "The term 'applicant' is no longer synonymous with 'inventor'".[65]

68 Pre-issuance Submissions of prior art may be made by third parties during prosecution. Restrictions which were imposed previously on the number and nature of such submissions have now been amended to make such filings more viable and attractive.[66]

69 Reexamination: Previously, *ex parte* and *inter partes* re-examination and litigation upon infringement were the avenues for challenging validity of patents. *Ex parte* re-examination procedures have

mostly been retained, but *inter partes* re-examination has been replaced by the new *Inter Partes*[67] Review as a way of providing parties with enhanced tools.

70 Addition of Post-Grant Review as a new mechanism to challenge a patent. These proceedings are similar to opposition proceedings in other countries and have a broader scope in comparison to re-examination proceedings. Post-Grant Review may only be triggered in the nine-month window after the grant of a patent.[68] Any person other than the patent owner may initiate the petition by raising any premise of invalidity, but this action may only be initiated if no redress in the form of a civil action has been sought.[69]

71 Supplemental Examination is another new addition. The America Invents Acts has furnished patent owners with the opportunity for consideration and correction of errors or omissions.[70]

72 Patent Trial and Appeal Board replaces the existing Board of Patent Appeals and Interferences. Its duties will include "reviewing decisions and appeals of re-examinations, conducting derivation proceedings and inter partes- and post grant reviews".[71]

73 Other changes:

- No tax strategy patents deemed to be within prior art.[72]
- Human organisms not patentable.[73]
- Best-Mode no longer constitutes basis for invalidity, albeit remaining a technical requirement.[74]
- Significant amendments made to patent marking law – requirements for lawsuits aimed at limiting qui tam cases; also, "only the United States may sue for penalty".[75]
- Prior commercial use: prior use rights as a defence to infringement have been expanded in scope under Sec. 5 of the America Invents Act.[76]

H. Conclusion

74 The America Invents Act has introduced extensive and long overdue changes to the patent system of the United States. As is common to the introduction of any major legislation, it has simultaneously been acclaimed as the change that will drive economic growth in the 21st century and denounced as being the downfall of innovation.

75 The purpose of introducing sweeping changes to the patent system was the stimulation of 'economic growth' – two words which take on a whole new meaning in current times, considering that 'stagnation' and 'slump' are possibly the most positive adjectives being used to describe the condition of economies the world over. The implementation of the first-inventor-to-file rule was expected to contribute to and act as a stimulus to growth in multiple ways: accelerate the patent process, help innovators commercialize their inventions faster and thereby generate employment opportunities, prevent needless and expensive dispute and litigation and primarily shift the focus from procedural red-tape to innovation.[77] A tall order indeed for any legislation.

76 There has been continuous and ongoing speculation as to the ramifications since the first-inventor-to-file is yet come into effect.

77 The purpose is laudable, but it is evident that transitioning the system to a first-inventor-to-file regime will neither be able to satisfy all the different parties affected by it nor will it alone suffice to fulfil the ambitious aims that effected the change. It requires additional fortification and support in the form of a robust legal framework that provides

- additional certainty – e.g. in the form of a predictable damages award,
- improved patent quality rendered possible by continued court assistance and regulation,
- and an efficient Patent and Trademark Office to enforce and implement the above.[78]

78 However, it is premature to conclude that the transition is doomed to disappoint. At present, the transition promises to pave the way for more objectivity in patent law.[79] It is also reasonable to be optimistic about the predictions as to the positive impacts the change is hoped to bring about. Together with the other supporting changes brought about by the America Invents Act, the change to first-inventor-to-file may be expected to make significant inroads towards progress.

79 In conclusion, it is justifiable to describe this transition as a historical milestone for the United States. As a cog in the patent wheel, it is sure to roll the patent world into interesting or shall we say, innovative times.

I. Bibliography

I. I. Literature:

David S. Abrams and R. Polk Wagner, Poisoning the Next Apple: How the America Invents Act Harms Inventors (28 Feb 2012). Stanford Law Review, Vol. 65, 2012; U of Penn, Inst for Law & Econ Research Paper No. 11-29, http://ssrn.com/ abstract=1883821, accessed 30 Jan 2013.

Robert Armitage: The America Invents Act: One Year Later, http://ip.law.indiana.edu/wp-content/uploads/2012/10/Indiana-University-Center-for-Intellectual-Property-Research-The-Ameri-

ca-Invents-Act-One-Year-Later-Armitag1.pdf, accessed 30 Jan 2013.

Erika H. Arner, Esther H. Lim, Rebecca M. McNeill, Christopher S. Schultz, Linda J. Thayer, and E. Robert Yoches, How Will Patent Reform Affect the Software and Internet Industries?, The Computer & Internet Lawyer, Dec 2011, http://www.finnegan.com/resources/articles/articlesdetail.aspx?news-=345b9502-13f7-4dbe-b40d-dcb671ff3c44, accessed 30 Jan 2013.

Emily Berger, Richard Esguerra, Patent Reform Act Stalls in the Senate, Electronic Frontier Foundation, 2 May 2008, https://www.eff.org/deeplinks/2008/05/patent-reform-act-stalls-senate, accessed 29 Jan 2013.

David Boundy, Esq. Cantor Fitzgerald, COMMENTARY: Why the America Invents Act Is Bad for Entrepreneurs, Startups and for America, Westlaw Journal Expert Commentary Series, http://www.mofo.com/files/Uploads/Images/120206-Patents-21st-Century.pdf, accessed 30 Jan 2013.

Art Brodsky, Consumer Groups Ask Senate to Take Up Patent Bill, http://www.publicknowledge.org/news-blog/press-release/consumer-groups-ask-senate-take-patent-bill, accessed 30 Jan 2013.

Dan L. Burk, From "First to Invent" to "First to File": Changing Lanes in U.S. Patent Procedure?, IIC 2011.

Mark Chandler, The America Invents Act: One Year Later, What Did The AIA Accomplish? What Did It Omit?, Indiana University Maurer School of Law, http:// ip.law.indiana.edu/wp-content/uploads/2012/10/The-America-Invents-Act-One-Year- Later-CHANDLER-AND-ZADO.pdf, accessed 30 Jan 2013.

Ned L. Conley, First-to-Invent: A Superior System for the United States, 22 St. Mary's L.J. 779 (1990-1992).

CQPress, First Street Report: Lobbying The America Invents Act, http:// firststreetresearch.files.wordpress.com/2011/11/first-street-report-lobbying-the-america- invents-act.pdf, accessed 29 January 2013.

Dennis Crouch, Library of Congress Issues Report on Proposed Patent Reform, 19 July 2005, http://patentlaw.typepad.com/patent/2005/07/library_of_cong.html, accessed 29 Jan 2013.

The Economist, Many patents, still pending: Congress tweaks, but does not overhaul, America's patent system, 10 Sep 2011, http://www.economist.com/node/21528643, accessed 30 Jan 2013.

European Patent Convention as revised 13 Dec 2007, http://www.epo.org/law-practice/legal-texts/html/epc/1973/e/contents.html, accessed 30 Jan 2013.

Federal Trade Commission, Oct 2003, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy, A Report by the Federal Trade Commission, http://www.ftc.gov/os/2003/10/innovationrpt.pdf, accessed 29 Jan 2013.

Marian T. Flattery and William B. Raich of Finnegan, Henderson, Farabow, Garrett & Dunner LLP, Strategic planning in the wake of the new prior art provisions in the America Invents Act, L e x o l o g y, 1 D e c 2 0 11, http://www.lexology.com/library/detail.aspx?g=2d49fa8a-95b9-4ee4-95a4-1b3d82adfb94, accessed 30 Jan 2013.

Michael A. Glenn and Peter J. Nagle, Article i and the First Inventor to File: Patent Reform or Doublespeak?, IDEA, The Intellectual Property Law Review, vol. 50, no. 3, http://docs.piausa.org/Article%20I%20and%20the%20First%20Inventor%20to%20File-%20Patent%20Reform%20or%20Doublespeak_%20=%20IDEA-vol50-no3-glenn-nagle.pdf, accessed 30 Jan 2013.

Gary L. Griswold and F. Andrew Ubel, "Prior User Rights: A Necessary Part of a First-to-File System", 26 John Marshall Law Review, 1993.

Carl E. Gulbrandsen, Wisconsin Alumni Research Foundation, http://www.warf.org/uploadsmediaWARFHR_1249_DisfavorsInnovators_06-01-11.pdf, accessed 30 Jan 2013.

Higher Education Associations, Comments to USPTO, 5 Oct 2012, http://www.uspto.gov/patents/law/comments/hea_20121005.pdf, accessed 30 Jan 2013.

Ron D. Katznel, Downhill Patent Law Harmonization with What? Presentation at The Overhaul of U.S. Patent Forum, 30 Aug 2011, http://www.lauderpartners.com/PatentReform/RonKatznelson-Pres-PatentReform110830.pdf, accessed 30 Jan 2013.

Ron D. Katznelson, Much Patent Reform Has Already Taken Place. Any Further Reforms Must Be Directed At U.S. Patent Office Operations, Presented at "The Perfect Storm of Patent Reform?" Fenwick & West Lecture Series Inaugural Symposium, UC Davis School of Law, 7 Nov 2008, http://works.bepress.com/cgi/viewcontent.cgi? article=1053&context=rkatznelson, accessed 30 Jan 2013.

Kauffman Foundation, The Importance of Startups in Job Creation and Job Destruction, July 2010, http://www.kauffman.org/what-we-do/research/firm-formation-and-growth-series/the-importance-of-startups-in-job-creation-and-job-destruction accessed 30 Jan 2013.

Thomas J. Kowalski, Deborah L. Lu, Vedder Price, Leahy-Smith America Invents Act, The National Law Review, 19 Sep 2011, http://www.natlawreview.com/article/leahy-smith-america-invents-act, accessed 30 Jan 2013.

Ladas & Parry LLP, A Brief History of the Patent Law of the United States, http://www.ladas.com/Patents/USPatentHistory.html, accessed 30 Jan 2013.

Gary Lauder, New Patent Law Means Trouble For Tech Entrepreneurs, 20 Sep 2011, http://www.forbes.com/sites/ciocentral/2011/09/20/new-patent-law-means-trouble-for-tech-entrepreneurs/, accessed 30 Jan 2013.

Letter from Gary Locke, The Secretary of Commerce to Senator Patrick Leahy, 2009, http://www.uspto.gov/aia_implementation/locke-letter-oct-05-2009.pdf, accessed 30 Jan 2013.

Letters from Unions to senate opposing patent reform bill, http://www.bustpatents.com/unions.pdf, accessed 29 Jan 2013.

Shih-tse Lo and Dhanoos Sutthiphisal, Does it Matter Who Has the Right to Patent: First-to-Invent or First-to-File? Lessons From Canada, National Bureau of Economic Research, Working Paper No. 14926, April 2009, http://www.nber.org/papers/w14926, accessed 30 Jan 2013.

Steve Lohr Inventor Challenges a Sweeping Revision in Patent Law, New York Times, 26 Aug 2012, http://www.nytimes.com/2012/08/27/technology/mark-stadnyk-challenges-sweeping-revision-in-patent-law.html?pagewanted=all&_r=0, accessed 30 Jan 2013.

Deborah L. Lu, Smitha B. Uthaman, Ph.D., Thomas J. Kowalski, Summary of the America Invents Act, The National Law Review, 12 Apr 2012 http:// www.natlawreview.com/article/summary-america-invents-act, accessed 30 Jan 2013.

Michael F. Martin, The End of the First-to-Invent Rule: A Concise History of Its Origin, IDEA, The Intellectual Property Law Review, vol. 49, no. 3, http://www.fed- soc.org/docLib/20110707_Inventrulemartin.pdf, accessed 30 Jan 2013.

Ann McCrackin, Stephen Brodsky, and Amrita Chiluwal, Comparison of the Current U.S. First-to-Invent System with the First-Inventor-To-File System Proposed in the Patent Reform Act of 2011 (S.23), PatentlyO, 2 Mar 2011, http://www.patentlyo.com/patent/2011/03/mccrackinpatentreform.html, accessed 30 Jan 2013.

Rebecca C.E. McFadyen, The "First-to-File" Patent System: Why Adoption is NOT an Option!, 14 RICH. J.L. & TECH. 3 (2007), http://law.richmond.edu/jolt/v14i1/article3.pdf, accessed 30 Jan 2013.

John Merline, Patent Reform A Jobs Plan? Not So Fast, 25 Aug 2011, http://news.investors.com/082511-582790-will-patent-reform-spark-jobs-.aspx, accessed 30 Jan 2013.

Stephen A. Merrill, Richard C. Levin, and Mark B. Myers, Editors, A Patent System for the 21st Century, 2004, http://judiciary.house.gov/hearings/pdf/NASSummary070906.pdf, accessed 29 Jan 2013.

Kyle Meziere, The "America Invents Act" to Improve and Harmonize the U.S. Patent Filing System, http://smiplaw.wordpress.com/2012/06/20/the-america-invents-act-to- improve-and-harmonize-the-u-s-patent-filing-system/#_ednref4, accessed 30 Jan 2013.

Gerald J. Mossinghoff, The U.S. First-To-Invent System Has Provided No Advantage to Small Entities, 84 Journal of the Patent & Trademark Office Society, 2002.

Thomas R. Nicolai, First-to-File vs. First-to-Invent: A Comparative Study Based on German and United States Patent Law, 3 IIC 103, 1972.

Douglas Norman, Vice President -General Patent Counsel Eli Lilly and Company, THE AMERICA INVENTS ACT: One Year Later Corporate Practice Impact, http:// ip.law.indiana.edu/wp-content/ uploads/2012/10/AIA_One_Year_Later-_Indiana- University_Norman_14Sep2012.pdf, accessed 30 Jan 2013.

Brad D. Pedersen, US Patent Reform: What Really Changes? A Patterson Thuente IP White Paper, http://www.ptslaw.com/PatentReformSummaryOverviewWhitepaper.pdf, accessed 30 Jan 2013.

Brad Pedersen and Justin Woo, The "Matrix" for changing first-to-invent: An experimental investigation into proposed changes in U.S. patent law, http://web.wmitchell.edu/cybaris/wp-content/ uploads/2010/05/01.Pedersen.05-12-10-vFINAL.WITHAPPENDIX.pdf, accessed 30 Jan 2013.

Wendy H. Schacht and John R. Thomas, Patent Reform: Innovation Issues, CRS Report for Congress, The Library of Congress, 15 Jul 2005, http://patentlaw.typepad.com/patent/RL32996.pdf, accessed 29 Jan 2013.

J.C. Stedman, The First-to-Invent Concept in United States, International Review of Intellectual Property and Competition Law 2.

John R. Thomas and Wendy H. Schacht, Patent Reform in the 110th Congress: Innovation Issues, CRS Report for Congress, The Library of Congress, 10 Jan 2008, http:// anticipatethis.files.wordpress.com/2008/01/crspatentreformrpt.pdf, accessed 29 Jan 2013.

John D. Vandenberg, Klarquist Sparkman LLP, Immediate and Near-Term Practical Impacts of the America Invents Act, p. 2, 7 Dec 2011, http://www.klarquist.com/Articles/28_Immediate%20and%20Near-Term%20Practical%20Impacts%20of%20the%20America%20Invents%20Act.pdf, accessed 30 Jan 2013.

John Villasenor, How Universities Can Protect Their Next Bright Idea Under the America Invents Act, 6 Nov 2011 http://www.brookings.edu/research/opinions/2011/11/06-patents-villasenor, accessed 30 Jan 2013.

John Villasenor, Untangling The Real Meaning Of "First-To-File" Patents, 6 Mar 2012, http://www.fastcompany.com/1822846/untangling-real-meaning-first-file-patents, accessed 30 Jan 2013.

The Washington Post, Editorial, How to encourage American innovation, 15 Aug 2011, http://www.washingtonpost.com/opinions/how-to-encourage-american-innovation/2011/08/05/gIQApACjFJ_print.html, accessed 30 Jan 2013.

II. The White House:

The White House: Office of the Press Secretary, 16 Sep 2011, http:// www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim, accessed 30 Jan 2013.

The White House, Press Release, 16 Sep 2011, http://www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim, accessed 30 Jan 2013.

III. USPTO:

David Kappos, WIPO Symposium of IP Authorities, 22 Sep 2011, http://www.uspto.gov/news/speeches/2011/kappos_wipo.jsp, accessed 30 Jan 2013.

David J. Kappos, A Patent System for the 21st Century, Indiana Maurer School of Law

2012 Patents Conference, 14 Sep 2012, http://ip.law.indiana.edu/wp-content/ uploads/2012/10/DK-Indiana-Maurer-School-of-Law-IP-Conference-September-14-2012.pdf, accessed 30 Jan 2013.

Memorandum from Robert W. Bahr, Tax Strategies are Deemed to Be Within the Prior Art, 20 Sep 2011, www.uspto.gov/aia_implementation/tax-strategies-memo.pdf, accessed 30 Jan 2013.

USPTO explains the America Invents Act, Webinar, 6 Sep 2012, http://www.oppedahl.com/cle/aia/20120904-presentation.pdf, accessed 30 Jan 2013.

USPTO Press Release, 9 Apr 2002, http://www.uspto.gov/news/pr/2002/02-26.jsp, accessed 30 Jan 2013.

USPTO, http://www.uspto.gov/aia_implementation/aia-effective-dates.pdf.

IV. WIPO:

WIPO, http://www.wipo.int/treaties/en/ip/paris/trtdocs_wo020.html, accessed 30 Jan 2013.

WIPO, http://www.wipo.int/treaties/en/ShowResults.jsp?

country_id=ALL&search_what=B&bo_id=5&bo_id=6, accessed 30 Jan 2013.

V. List of cases:

Eaton v. Evans, 204 F.3d 1094, 1097 (Fed. Cir. 2000).

Hyatt v. Boone, 146 F. 3d 1348 (Fed. Cir. 1998).

Del Mar Engineering Labs. v. United States, 524 F2d 1178 (Ct. Cl. 1975).

Brunswick Corp. v. United States, 34 532, 584 (Fed. CI. 1995).

USPTO press release, 9 Apr 2002, http://www.uspto.gov/news/pr/2002/02-26.jsp, accessed 30 January 2013.

WIPO, http://www.wipo.int/treaties/en/ip/paris/trtdocs_wo020.html, accessed 30 January 2013.

WIPO, http://www.wipo.int/treaties/en/ShowResults.jsp?country_id=ALL&search_what=B&bo_id=5&bo_id=6, accessed 30 January 2013.

A Brief History of the Patent Law of the United States, http://www.ladas.com/Patents/USPatentHistory.html, accessed 30 January 2013.

Federal Trade Commission, October 2003, To Promote Innovation: The Proper Balance of Competition and Patent Law and Policy, A Report by the Federal Trade Commission, http://www.ftc.gov/os/2003/10/ innovationrpt.pdf, accessed 29 Jan 2013. *See also* Stephen A. Merrill, Richard C. Levin, and Mark B. Myers, Editors, A Patent System for the 21st Century, 2004, http://judiciary.house.gov/hearings/pdf/NASSummary070906.pdf, accessed 29 Jan 2013.

Wendy H. Schacht, John R. Thomas, Patent Reform: Innovation Issues, CRS Report for Congress, The Library of Congress, 15 July 2005, http://patentlaw.typepad.com/patent/RL32996.pdf, accessed 29 Jan 2013. See also Dennis Crouch, Library of Congress Issues Report on Proposed Patent Reform, 19 July 2005, http://patentlaw.typepad.com/patent/2005/07/library_of_cong.html, accessed 29 Jan 2013.

CQPress, First Street Report: Lobbying The America Invents Act, http:// firststreetresearch.files.wordpress.com/2011/11/first-

street-report-lobbying-the-america-invents-act.pdf, accessed 29 Jan 2013.

John R. Thomas, Wendy H. Schacht, Patent Reform in the 110th Congress: Innovation Issues, CRS Report for Congress, The Library of Congress, 10 Jan 2008, http://anticipatethis.files.wordpress.com/2008/01/ crspatentreformrpt.pdf, accessed 29 Jan 2013.

Emily Berger, Richard Esquerra, Patent Reform Act Stalls in the Senate, Electronic Frontier Foundation, 2 May 2008, https://www.eff.org/deeplinks/2008/05/patent-reform-act-stalls-senate, accessed 29 Jan 2013. See also Letters from unions to senate opposing patent reform bill, http://www.bustpatents.com/unions.pdf, accessed 29 Jan 2013.

The White House: Office of the Press Secretary, 16 Sep 2011, http://www.whitehouse.gov/the-press- office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim, accessed on 30 Jan 2013.

Thomas J. Kowalski, Deborah L. Lu, Vedder Price, Leahy-Smith America Invents Act, The National Law Review, 19 Sep 2011, http://www.natlawreview.com/article/leahy-smith-america-invents-act, accessed 30 Jan 2013.

Brad D. Pedersen, US Patent Reform: What Really Changes? A Patterson Thuente IP White Paper, p. 3, http://www.ptslaw.com/PatentReformSummaryOverviewWhitepaper.pdf, accessed 30 Jan 2013.

USPTO, http://www.uspto.gov/aia_implementation/aia-effective-dates.pdf, accessed 30 Jan 2013.

Michael F. Martin, The End of the First-to-Invent Rule: A Concise History of Its Origin, IDEA, The Intellectual Property Law Review, vol. 49, no. 3, pp. 438-440, http://www.fed-soc.org/docLib/20110707_Inventrulemartin.pdf, accessed 30 Jan 2013.

Gerald J. Mossinghoff, The U.S. First-To-Invent System Has Provided No Advantage To Small Entities, 84 Journal of the Patent & Trademark Office Society, 2002, p. 428, http://heinonline.org/HOL/Page?handle=hein.journals/jpatos84&div=62&g_sent=1&collection=journals, accessed 30 Jan 2013.

Eaton v. Evans, Federal Circuit Court 2000.

Hyatt v. Boone, Federal Circuit Court 1998.

Del Mar Engineering Labs. v. United States. See also Brunswick Corp. v. United States Fed. CI. 1995. See also John R. Thomas, Wendy H. Schacht, Patent Reform in the 110th Congress: Innovation Issues, CRS Report for Congress, The Library of Congress, 10 Jan 2008, pp. 15-17, http:// anticipatethis.files.wordpress.com/2008/01/crspatentreformrpt.pdf, accessed 30 Jan 2013.

Shih-tse Lo and Dhanoos Sutthiphisal, Does It Matter Who Has the Right to Patent: First-to-Invent or First-to-File? Lessons From Canada, National Bureau of Economic Research, Working Paper No. 14926, April 2009, pp. 2-4, http://www.nber.org/papers/w14926, accessed 30 Jan 2013.

1 Stedman, J.C., The First-to-Invent Concept in United States, International Review of Intellectual Property and Competition Law 2, pp. 241-259, accessed 30 Jan 2013.

2 Thomas R. Nicolai, First-to-File vs. First-to-Invent: A Comparative Study Based on German and United States Patent Law, IIC 1972, p. 112.

3 Kyle Meziere, The "America Invents Act" to Improve and Harmonize the U.S. Patent Filing System, http:// smiplaw.wordpress.com/2012/06/20/the-america-invents-act-to-improve-and-harmonize-the-u-s-patent-filing- system/#_ednref4, accessed 30 Jan 2013. See also European Patent Convention Art. 55, 5 Oct 1973, 1065 U.N.T.S. 254 as revised 13 Dec 2007, http://www.epo.org/law-practice/legal-texts/html/epc/1973/e/contents.html, accessed 30 Jan 2013.

4 Tokkyo Ho [Japanese Patent Law], Law No. 121 of 1959, Arts. 29-30 (Japan). See also 22 above.

5 Thomas R. Nicolai, First-to-File vs. First-to-Invent: A Comparative Study Based on German and United States Patent Law, IIC 1972, p.108.

6 Shih-tse Lo and Dhanoos Sutthiphisal, Does it Matter Who Has the Right to Patent: First-to-Invent or First-to-File? Lessons From Canada, National Bureau of Economic Research, Working Paper No. 14926, April 2009, pp. 3-4, http://www.nber.org/papers/w14926, accessed 30 Jan 2013.

7 Shih-tse Lo and Dhanoos Sutthiphisal, Does it Matter Who Has the Right to Patent: First-to-Invent or First-to-File? Lessons From Canada, National Bureau of Economic Research, Working Paper No. 14926, April 2009, p. 2, http://www.nber.org/papers/w14926, accessed 30 Jan 2013.

8 David Kappos, WIPO Symposium of IP Authorities, 22 Sep 2011, http://www.uspto.gov/news/speeches/2011/kappos_wipo.jsp, accessed 30 Jan 2013.

9 Michael F. Martin, The End of the First-to-Invent Rule: A Concise History of Its Origin, IDEA, The Intellectual Property Law Review, vol. 49, no. 3, p. 437, http://www.fed-soc.org/docLib/20110707_Inventrulemartin.pdf, accessed 30 Jan 2013.

10 Brad Pedersen and Justin Woo, The "Matrix" for changing first-to-invent: An experimental investigation into proposed changes in U.S. patent law, p.15, http://web.wmitchell.edu/cybaris/wp-content/uploads/2010/05/01.Pedersen.05-12-10-vFINAL.WITHAPPENDIX.pdf, accessed 30 Jan 2013.

11 Dan L. Burk, From "First to Invent" to "First to File": Changing Lanes in U.S. Patent Procedure?, IIC 2011, p. 629.

12 35 U.S.C. § 102(b)(1).

13 35 U.S.C. § 135. See also Brad Pedersen and Justin Woo, The "Matrix" for changing first-to-invent: An experimental investigation into proposed changes in U.S. patent law, p. 15, http://web.wmitchell.edu/cybaris/wp- content/uploads/2010/05/01.Pedersen.05-12-10-vFINAL.WITHAPPENDIX.pdf, accessed 30 Jan 2013.

14 AIA Sec. 3 § 135(a).

15 Prof. Ann McCrackin, Stephen Brodsky, and Amrita Chiluwal, Comparison of the Current U.S. First-to-Invent System with the First-Inventor-To-File System Proposed in the Patent Reform Act of 2011 (S.23), PatentlyO, 2 Mar 2011, http://www.patentlyo.com/patent/2011/03/mccrackinpatentreform.html, accessed 30 Jan 2013.

16 See e.g. Letter from Gary Locke, The Secretary of Commerce, to Senator Patrick Leahy, 2009, http://www.uspto.gov/aia_implementation/locke-letter-oct-05-2009.pdf, accessed 30 Jan 2013.

17 David Kappos, WIPO Symposium of IP Authorities, 22 Sep 2011, http://www.uspto.gov/news/speeches/2011/kappos_wipo.jsp, accessed 30 Jan 2013.

18 The Washington Post , Editorial, How to encourage American innovation, 15 Aug 2011, http:// www.washingtonpost.com/opinions/how-to-encourage-american-innovation/2011/08/05/ gIQApACjFJ_print.html, accessed 30 Jan 2013.

19 Consumer Groups Ask Senate to Take Up Patent Bill, http://www.publicknowledge.org/node/1258, accessed 30 Jan 2013.

20 Many patents, still pending: Congress tweaks, but does not overhaul, America's patent system, The Economist, 10 Sep 2011, http://www.economist.com/node/21528643, accessed 30 Jan 2013.

21 Carl E. Gulbrandsen, Wisconsin Alumni Research Foundation, p. 1, para 3, http://www.warf.org/uploads/media/WARFHR_1249_Disfavors_Innovators_06-01-11.pdf, accessed 30 Jan 2013.

22 David S. Abrams and R. Polk Wagner, Poisoning the Next Apple: How the America Invents Act Harms Inventors, 28 Feb

2012, Stanford Law Review, Vol. 65, 2012; U of Penn, Inst for Law & Econ Research Paper No. 11-29, http://ssrn.com/abstract=1883821, accessed 30 Jan 2013.

23 Forbes.com, New Patent Law Means Trouble For Tech Entrepreneurs, 20 Sep 2011, http://www.forbes.com/sites/ciocentral/2011/09/20/new-patent-law-means-trouble-for-tech-entrepreneurs/, accessed 30 Jan 2013.

24 Inventor Challenges a Sweeping Revision in Patent Law, New York Times, 26 Aug 2012, http:// www.nytimes.com/2012/08/27/technology/mark-stadnyk-challenges-sweeping-revision-in-patent-law.html? pagewanted=all, accessed 30Jan 2013.

25 Rebecca C.E. McFadyen, The "First-to-File" Patent System: Why Adoption is NOT an Option!, 14 RICH. J.L. & TECH. 3 (2007), http://law.richmond.edu/jolt/v14i1/article3.pdf, accessed 30 Jan 2013. See also US CONST. Art. 1, § 8, cl. 8. See also Michael A. Glenn and Peter J. Nagle, Article I and the First Inventor to File: Patent Reform or Doublespeak?, IDEA, The Intellectual Property Law Review, vol. 50, no. 3, p. 443, http://docs.piausa.org/Article%20I%20and%20the%20First%20Inventor%20to%20File-%20Patent%20Reform%20or%20Doublespeak_%20=%20IDEA-vol50-no3-glenn-nagle.pdf, accessed 30 Jan 2013.

26 Michael F. Martin, The End of the First-to-Invent Rule: A Concise History of Its Origin, IDEA, The Intellectual Property Law Review, vol. 49, no. 3, p. 440, http://www.fed-soc.org/docLib/20110707_Inventrulemartin.pdf, accessed 30 Jan 2013.

27 §3, Patent Act of 1793, http://ipmall.info/hosted_resources/lipa/patents/Patent_Act_of_1793.pdf, accessed 30 Jan 2013.

28 Ned L. Conley, First-to-Invent: A Superior System for the United States, 1991, p. 781, http:// heinonline.org/HOL/Page?handle=hein.journals/stmlj22&div=33&g_sent=1&collection=journals, accessed 29 Jan 2013.

29 Patent Reform Problems Presentation, 30 Aug 2011, p. 3, http://www.lauderpartners.com/PatentReform/ RonKatznelsonPres-PatentReform110830.pdf, accessed 30 Jan 2013. See also Patent Reform A Jobs Plan? Not So Fast, 25 Aug 2011, http://news.investors.com/082511-582790-will-patent-reform-spark-jobs-.aspx, accessed 30Jan 2013.

30 Job Growth in U.S. Driven Entirely by Startups, Kauffman Foundation Study, 7 Jul 2010, http://www.kauffman.org/newsroom/u-s-job-growth-driven-entirely-by-startups.aspx, accessed 30 Jan 2013.

31 Gary L. Griswold & F. Andrew Ubel, "Prior User Rights - A Necessary Part of a First-to-File System", 26 John Marshall Law Review 1993, p. 568.

32 Marian T Flattery and William B. Raich of Finnegan, Henderson, Farabow, Garrett & Dunner LLP, Strategic planning in the wake of the new prior art provisions in the America Invents Act, Lexology, 1 Dec 2011, http://www.lexology.com/library/detail.aspx?g=2d49fa8a-95b9-4ee4-95a4-1b3d82adfb94, accessed 30 Jan 2013.

33 Douglas Norman, Vice President, General Patent Counsel Eli Lilly and Company, THE AMERICA INVENTS ACT: One Year Later Corporate Practice Impact, http://ip.law.indiana.edu/wp-content/uploads/2012/10/AIA_One_Year_Later-_Indiana-University_Norman_14Sep2012.pdf, accessed 30 Jan 2013.

34 JOHN VILLASENOR, Untangling The Real Meaning Of "First-To-File" Patents, 6 Mar 2012, http://www.fastcompany.com/1822846/untangling-real-meaning-first-file-patents, accessed 30 Jan 2013.

35 See 53 above.

36 David Boundy, Esq. Cantor Fitzgerald, COMMENTARY: Why the America Invents Act is Bad for Entrepreneurs, Startups and for America, Westlaw Journal Expert Commentary Series, http:// www.mofo.com/files/Uploads/Images/120206-Patents-21st-Century.pdf, accessed 30 Jan 2013. See also Gary L. Griswold & F. Andrew Ubel, "Prior User Rights: A Necessary Part of a First-to-File System", 26 John Marshall Law Review, 1993, p. 568.

37 John Villasenor, Untangling The Real Meaning Of "First-To-File" Patents, 6 Mar 2012, http://www.fastcompany.com/1822846/untangling-real-meaning-first-file-patents, accessed 30 Jan 2013.

38 Ron D. Katznelson, Much Patent Reform Has Already Taken Place. Any Further Reforms Must Be Directed At U.S. Patent Office Operations, Presented at "The Perfect Storm of Patent Reform?" Fenwick & West Lecture Series Inaugural Symposium, UC Davis School of Law, November 7, 2008 - http://works.bepress.com/cgi/viewcontent.cgi?article=1053&context=rkatznelson, accessed 30 Jan 2013.

39 John Villasenor, How Universities Can Protect Their Next Bright Idea Under the America Invents Act, 6 Nov 2011, http://www.brookings.edu/research/opinions/2011/11/06-patents-villasenor, accessed 30 Jan 2013.

40 Higher Education Associations, Comments to USPTO, 5 Oct 2012, http://www.uspto.gov/patents/law/comments/hea_20121005.pdf, accessed 30 Jan 2013.

41 David J. Kappos, A Patent System for the 21st Century, Indiana Maurer School of Law 2012 Patents Conference, 14 Sep 2012, http://ip.law.indiana.edu/wp-content/uploads/2012/10/DK-Indiana-Maurer-School-of-Law-IP-Conference-September-14-2012.pdf, accessed 30 Jan 2013.

42 AIA Sec 3 (b)(1).

43 Marian T Flattery and William B. Raich of Finnegan, Henderson, Farabow, Garrett & Dunner LLP, Strategic planning in the wake of the new prior art provisions in the America Invents Act, Lexology, 1 Dec 2011, http://www.lexology.com/library/detail.aspx?g=2d49fa8a-95b9-4ee4-95a4-1b3d82adfb94, accessed 30 Jan 2013.

44 Brad D. Pedersen, US Patent Reform: What Really Changes? A Patterson Thuente IP White Paper, p. 3, http://www.ptslaw.com/PatentReformSummaryOverviewWhitepaper.pdf, accessed 30 Jan 2013.

45 AIA Sec 22.

46 USPTO explains the America Invents Act - Webinar - September 6, 2012 - slide 5 - slides retrieved from http://www.oppedahl.com/cle/aia/20120904-presentation.pdf, accessed 30 Jan 2013.

47 Erika H. Arner, Esther H. Lim, Rebecca M. McNeill, Christopher S. Schultz, Linda J. Thayer, and E. Robert Yoches, How Will Patent Reform Affect the Software and Internet Industries?, The Computer & Internet Lawyer, December 2011, http://www.finnegan.com/resources/articles/articlesdetail.aspx?news=345b9502-13f7-4dbe-b40d-dcb671ff3c44, accessed 30 Jan 2013.

48 Deborah L. Lu, Smitha B. Uthaman, Ph.D., Thomas J. Kowalski, Summary of the America Invents Act, The National Law Review, 12 Apr 2012, http://www.natlawreview.com/article/summary-america-invents-act, accessed 30 Jan 2013.

49 Brad D. Pedersen, US Patent Reform: What Really Changes? A Patterson Thuente IP White Paper, p. 4, http://www.ptslaw.com/PatentReformSummaryOverviewWhitepaper.pdf, accessed 30 Jan 2013.

50 See 67 above. See also AIA Chapter 32 / 35 U.S.C. § 321.

51 See 67 above. See also AIA Sec 12.

52 AIA Sec 7 / 35 U.S.C. § 6 (b).

53 Brad D. Pedersen, US Patent Reform: What Really Changes? A Patterson Thuente IP White Paper, p. 9, http://www.ptslaw.com/PatentReformSummaryOverviewWhitepaper.pdf, accessed 30 Jan 2013. See also AIA Sec. 14. See also Memorandum from Robert W. Bahr, Tax Strategies are Deemed to be

Within the Prior Art, 20 Sep 2011, www.uspto.gov/aia_implementation/tax-strategies-memo.pdf, accessed 30 Jan 2013.

54 AIA Sec 33.

55 AIA Sec 15. See also John D. Vandenberg, Klarquist Sparkman LLP, Immediate and Near-Term Practical Impacts of the America Invents Act, p. 2, December 7, 2011, http://www.klarquist.com/Articles/28_Immediate%20and%20Near-Term%20Practical%20Impacts%20of%20the%20America%20Invents%20Act.pdf, accessed 30 Jan 2013.

56 AIA Sec 16 (b) (1).

57 Erika H. Arner, Esther H. Lim, Rebecca M. McNeill, Christopher S. Schultz, Linda J. Thayer, and E. Robert Yoches, How Will Patent Reform Affect the Software and Internet Industries?, The Computer & Internet Lawyer, December 2011, http://www.finnegan.com/resources/articles/articlesdetail.aspx, accessed 30 Jan 2013.

58 The White House, Press Release, 16 Sep 2011, http://www.whitehouse.gov/the-press-office/2011/09/16/president-obama-signs-america-invents-act-overhauling-patent-system-stim, accessed 30 Jan 2013.

59 Mark Chandler, The America Invents Act: One Year Later, What Did The AIA Accomplish? What Did It Omit?, Indiana University Maurer School of Law, http://ip.law.indiana.edu/wp-content/uploads/2012/10/The-America-Invents-Act-One-Year-Later-CHANDLER-AND-ZADO.pdf, accessed 30 Jan 2013.

60 Robert Armitage: The America Invents Act: One Year Later, http://ip.law.indiana.edu/wp-content/uploads/2012/10/Indiana-University-Center-for-Intellectual-Property-Research-The-America-Invents-Act-One-Year- Later-Armitag1.pdf, accessed 30 Jan 2013.