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INTERNATIONAL PATENT LAW: SHOULD UNITED STATES AND FOREIGN PATENT LAWS BE UNIFORM? AN ANALYSIS OF THE BENEFITS, PROBLEMS, AND BARRIERS

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This article blends three areas of law: international law, comparative law and intellectual property. Specifically, this article discusses the benefits and problems associated with harmonizing United States patent laws with foreign systems. It does so by analyzing the historical and contemporary ramifications of uniform patent laws. In addition, it highlights recent attempts in Congress—The Patent Reform Act of 2007—to harmonize United States laws with foreign systems.

I. INTRODUCTION

In music theory “harmonization” is understood to be the sound of two or more notes heard simultaneously.² It is also known as the process of bringing sounds or tones into alignment by separating the dissonant and consonant tones in order to please the ear.³ Similarly, “harmonization” in the field of international patent law seeks to bring the intellectual property laws of nations into alignment for the benefit of the common good.⁴ To take this analogy a step further, because current intellectual property laws are not aligned, they are in discord. And depending on one’s particular preference in music or law, discord can be either unpleasant or unique. Today, much of the debate regarding the harmonization of international patent laws revolves around the willingness and preferences of nations to change their respective

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² 24 THE NEW ENCYCLOPÆDIA BRITANNICA 520 (15th ed. 2007).
³ Id. at 524.
⁴ “Harmonization” is to be distinguished from “unification.” Specifically, “harmonization” refers to efforts to bring patent law systems into alignment while maintaining, in a separate form, each of the domestic patent systems. “Unification” seeks to establish one unified “world patent” system.

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One particular problem that results from the discord among national patent laws is that because there is no uniform global system of patent laws and patents are national in scope, an inventor can obtain relief only if his or her patent rights are infringed by a party who is located in a country where the inventor's patent is registered, recognized and enforced. Naturally, harmonizing patent laws, or a globally unified patent system, would solve this problem. However, such uniformity, although conceptually ideal, might create more problems than it would solve. In addition, dissimilar ideological beliefs and economic disparity among nations may present barriers that no patent law legislation in the near future can overcome.

This article will discuss and highlight the benefits and problems associated with harmonizing United States and foreign patent laws, including potential problems with uniform legislation, both abroad and in the United States. The organization of this article is as follows: Part II discusses the history of the United States Patent System. Part III discusses the history of the international conventions and treaties in which patents have been emphasized. Part IV discusses the dissimilarities between United States patent laws and foreign patent laws. Part V discusses the benefits and problems associated with harmonization and the development of a global patent system. Finally, section VI discusses recent attempts by the United States to harmonize its patent laws with those of other countries.

II. HISTORY OF UNITED STATES PATENT LAWS

From the first colonial patent for the process of manufacturing salt to recent patents of nano-chemical technology, the history of

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5 Please note that this is not a complete history of Patent Law in the United States, but a summarized interpretation that is intended to lay the foundation for this article. For an in depth historical account on patent law in the United States, and its roots in history, please reference 1 ERNEST BAINBRIDGE LIPSCOMB III, LIPSCOMB'S WALKER ON PATENTS § 1 (3d ed. 1984); 1 DONALD S. CHISUM, CHISUM ON PATENTS §1 (2005).
the United States patent system illustrates its humble beginnings. Interestingly, well before the formal adoption of a patent law system, the policies and principles behind the modern U.S. patent system became evident in the North American colonial period.9

From as early as 1641,9 the American colonies understood the conceptual importance of rewarding technological advancement by granting protection to inventors.10 For example, the General Court of Massachusetts encouraged technological inventions that were "profitable for society"11 by granting exclusive monopolies. This practice of granting monopolies, a predecessor to the patent system, was largely influenced by the English Crown, which awarded similar importation franchises that granted exclusive rights.12

Although the early colonies laid the foundation, the most significant development in the U.S. patent system is arguably the explicit reference to patents in the U.S. Constitution. The framers of the Constitution included the following provision: "The Congress shall have Power . . . to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and

6 LIPSCOMB, supra note 5, § 1:7, at 52 ("1641, Samuel Winslow, Method of Making Salt, 10 years.").
8 See generally DONALD S. CHISUM, PRINCIPLES OF PATENT LAW § 1 (3d ed. 2004); BRUCE W. BUGBEE, GENESIS OF AMERICAN PATENT AND COPYRIGHT LAW 166 n.5 (1967) (noting claim of existence of antecedent to contemporary patent regime in ancient Greece); Frank D. Prager, A History of Intellectual Property From 1545 to 1787, 26 J. PAT. OFF. SOC'Y 711 (1944) (emphasizing significance of early Italian and French patent systems).
9 LIPSCOMB, supra note 5, § 1 at 52.
11 Pritchard, supra note 10, at 292 ("There shall be no monopolies granted or allowed among us, but of such new inventions as are profitable to the country, and that for a short time.").
Inventors the exclusive Right to their respective Writings and Discoveries.”

Courts since have agreed that the underlying purpose of such language is to “serve . . . the advancement of science.”

Despite a formal reference of patent rights in the U.S. Constitution, a federal patent act was not passed until the Patent Act of 1790. Moreover, the U.S. patent system was not founded until 1793 when the United States Congress passed into law the following:

That where any State, before its adoption of the present form of government, shall have granted an exclusive right to any invention, the party claiming that right shall not be capable of obtaining an exclusive right under this act, but on relinquishing his right under such particular state, and of such relinquishment, his obtaining an exclusive right under this act shall be sufficient evidence.

Prior to these early patent acts and statutes, states granted patents as part of their inherent state sovereignty. Due to the lack of uniformity, state-granted patents were effectively useless because any rights granted were limited to the territory of the granting state; thus, a different state could grant another individual the same right. Such limited exclusivity arguably curbed incentive to invent.

Currently, U.S. patent laws are governed by the Patent Act of 1952. Pursuant to this Patent Act, an inventor may obtain a patent on a process, machine, manufacture, or composition of matter that is useful, novel, and non-obvious. These patent rights

13 U.S. CONST. art. I, § 8, cl. 8.
16 LIPSCOMB, supra note 5, § 1:7, at 50 (quoting Patent Act of 1793, ch.11, 1 Stat. 318 (1793)).
17 Id.
18 Id.
20 Id. §§ 101–03.
do not arise automatically; inventors must prepare and submit applications to the U.S. Patent and Trademark Office ("USPTO") in order to obtain them.21 After submissions are made, applications are reviewed by the USPTO officials and, if the application is found to be in compliance with all relevant statutes, rules, and procedures, a patent is granted to the applicant.22

Scholars have maintained that the United States patent system is an "interdependent mix of incentives and restraints that bestow benefits and impose costs on society and individuals alike."23 Thus, the U.S. patent system, which is designed to promote fairness and economic growth, attempts to concurrently balance the promotion of technology and fairness to the patent holder with the public's access to an invention's benefits.24 This blend of incentives and restraints has inspired numerous recorded patents and earned the praise of foreign nations.

III. HISTORY OF INTERNATIONAL PATENT LAWS AND TREATIES

Notwithstanding the growth in global trade and the rise of multinational corporations, a global patent system has yet to be developed.25 Although no formal attempts to create such a system have been made, there have been many attempts to harmonize international intellectual property laws by treaties and international agreements over the past 125 years. With respect to patent law, the three most important treaties and agreements are the Paris Convention,26 the Patent Cooperation Treaty,27 and the Trade

21 See id. §§ 111–22, 151.
22 Id. § 131.
23 CHISUM, supra note 8, at § 1.
24 Id. ("[U.S. Patent Law] strives to balance the promotion of technological invention and the dissemination of and access to its fruits.").
25 This is not complete history of international patent law; such an endeavor would eclipse this entire article. This section is a history that is intended to lay further foundation for this article.
26 Convention of Paris for the Protection of Industrial Property, Mar. 20, 1883, 13 U.S.T. 1, 1 Bevans 80 [hereinafter Paris Convention] (Please note that the Paris Convention has been revised many times after its conception on Mar. 20, 1883. As revised at Brussels on Dec. 14, 1900, at Washington on June 2, 1911,
Related Aspects of Intellectual Property Rights Agreement ("TRIPS").

A. The International Convention for the Protection of Industrial Property (The Paris Convention)

While Robert Louis Stevenson worked to complete "The Black Arrow" and Johannes Brahms composed his third Symphony, Parisians hosted the International Convention for the Protection of Industrial Property ("Paris Convention"). Although the Paris Convention was the second of its type, its outcome was the first and definitive international treaty involving patents to which the United States was a party.

Since its conception in 1883, the Paris Convention has been the foremost international intellectual property law regime. The Paris Convention created important rights enabling citizens of

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29 I GRAHAM BALFOUR, LIFE OF ROBERT LOUIS STEVENSON 207 (1901) (The story involves a young Englishman, seeking to avenge the death of his father, becoming involved in the band of the Black Arrow and the events of the War of the Roses).
31 Paris Convention, supra note 26. See generally WIPO General Information, supra note 30 (providing further information about the Paris Convention).
32 The first international convention regarding intellectual property was The International Exhibition of Inventions in Vienna; however, most countries and inventors were not present because of fear of misappropriation. See WIPO General Information, supra note 30.
33 See generally 4A CHISUM, supra note 5, at §14.02[1] (detailing the historical development of United States involvement in international patent law treaties).
signatory countries to obtain patents in multiple other countries. Specifically, Article 4 established a right of priority in all signatory countries for six months after the filing of an application in one signatory country:

A person who has duly filed an application for a patent, or for the registration of an industrial design . . . in one of the contracting States, shall enjoy, for the purpose of filing in the other States, and subject to the rights of third parties, a right of priority during the periods hereinafter stated . . . . Consequently, the subsequent filing in any of the other States of the Union before the expiration of those periods shall not be invalidated through any acts accomplished in the interval, as for instance, by another filing, by the publication of the invention or its exploitation by others, [or] by the putting on sale of copies of the design . . . . The above mentioned periods of priority shall be six months for patents and three months for industrial designs . . . . They shall be increased by one month for overseas countries.

Before the Paris Convention, an inventor who desired timely protection of his invention in multiple countries had to race against the clock and spend an exorbitant amount of resources. Further, once filed, that inventor’s various patent applications would likely face prejudices and other difficulties in obtaining the desired national patents.

The following example highlights the international patent applicant’s greatest disadvantage prior to the Paris Convention. If a U.S. citizen living in the 18th century had an invention and desired to register his or her invention in the U.S. and France, that applicant would likely be barred from registering or charged an extremely high surcharge in France if the applicant had registered

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34 Id. § 14.02[1][a].
35 Id. (quoting art. 4 of the Paris Convention). See generally id. n. 2 ("The original language of the Paris Convention was French. An official English translation was not established until the 1958 Lisbon Revision. Quotations in the text are of translations of the Paris Convention and subsequent revisions prepared by the United International Bureaux for the Protection of Intellectual Property to conform to the terminology of the official English translation of the Lisbon and Stockholm Revisions. The ‘International Bureaux’ subsequently evolved to become the World Intellectual Property Organization (‘WIPO’).")
in the U.S. before registering in France. At that time, some countries considered an application filed even one day earlier in another country to be invalidating prior art against a later-filed application for a patent on the same invention. Thus, the U.S. citizen would have to arrange to file multiple applications on the same day in different countries to protect his invention. The Paris Convention eliminated this problem for signatory members.

To combat such impediments, the Paris Convention includes the “national treatment” provision of Article 2, which precludes a signatory country’s treating foreigners seeking intellectual property protection differently than the country treats its own nationals. Article 2 provides:

(1) Nationals of each of the countries of the Union shall, as regards the protection of industrial property, enjoy in all the other countries of the Union the advantages that their respective laws now grant, or may hereafter grant, to nationals; all without prejudice to the rights specially provided by the present Convention. Consequently, they shall have the same protection as the latter, and the same legal remedy against any infringement of their rights, provided they observe the conditions and formalities imposed upon nationals are complied with.

(2) However, no condition as to the possession of a domicile or establishment in the country where protection is claimed may be required of persons entitled to the benefits of the Union for the enjoyment of any industrial property rights.

(3) The provisions of the laws of each of the countries of the Union relating to judicial and administrative procedure and to jurisdiction, and to the election of domicile or the designation of an agent, which may be required by the laws on industrial property, are expressly reserved.

The United States became a contracting member of the Paris Convention in 1887, nearly four years after the convention was held. Currently there are more than 173 members.

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37 Paris Convention, supra note 26, at art. 2.
38 Id.
39 Paris Convention, supra note 26 (noting the United States’ membership became effective May 30, 1887).
B. The Patent Cooperation Treaty

Although not as significant in legal history as the Paris Convention, the Patent Cooperation Treaty ("PCT"), drafted in 1970, is arguably a larger step towards a global patent system. Most notable among its many provisions is the call for the creation of the first "international patent."

Pursuant to the PCT, an applicant who desires his or her patent to be protected can obtain an international patent form which creates eligibility for protection in all the signatory countries. The PCT makes it possible for an international patent applicant to obtain international protection in a large number of countries simply by filing an "international" patent application. To demonstrate its simplification of the international patent filing process, the application may be filed with the national patent office of the contracting state of which the applicant is a national or resident or, at the applicant's preference, with the International Bureau of WIPO in Geneva.

Nevertheless, there are two key limitations. First, the PCT does not apply retroactively to previously granted patents. Second, the PCT only results in a single international application, not a single granted patent. It is up to the individual contracting states to decide whether to grant the respective national patents. Ultimately, PCT allows the patent applicant to save considerable costs by simplifying a complicated process that required the patent

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42 Patent Cooperation Treaty, supra note 27.
44 Id.
45 Id.
46 Id.
47 See generally 4A CHISUM, supra note 5, at § 14.02[4].
48 Id.
49 Id.
50 Id.
applicant to apply in each nation for which patent protection was desired.\textsuperscript{51} The PCT became United States law in 1978.\textsuperscript{52}

C. The TRIPS Agreement

While the PCT has enabled patent applicants to file an international patent, the TRIPS agreement provides for minimum standards of international enforcement of patent laws.\textsuperscript{53} Distinct from the earlier patent-related treaties, TRIPS is a unique milestone that further lays the foundation for a global patent system.\textsuperscript{54}

As noted above, the TRIPS agreement requires that nations must have minimal standards for enforcement of intellectual property,\textsuperscript{55} and that those standards apply equally to all member states.\textsuperscript{56} Further, the TRIPS agreement mandates that the procedures for enforcing intellectual property rights "shall be fair and equitable."\textsuperscript{57} Accused infringers of such rights must be given a timely and sufficiently detailed notice. Furthermore, injunctions\textsuperscript{58} and damages\textsuperscript{59} are also available for infringement cases.

In addition to remedies and enforcement, the TRIPS agreement provides a procedure for the settlement of disputes between contracting countries.\textsuperscript{60} When one country believes another is not fully complying with international patent laws, the propounding country can enter into a mediated WTO panel to consider the nation's respective complaint.\textsuperscript{61}

\textsuperscript{51} Id.
\textsuperscript{53} TRIPS, supra note 28, Art. 41.2
\textsuperscript{54} Id.
\textsuperscript{55} Id.
\textsuperscript{56} Id. Under TRIPS, developing countries are allowed extra time to implement changes to their respective laws. TRIPS, supra note 28, Art. 65.
\textsuperscript{57} TRIPS, supra note 28, Art. 41.2.
\textsuperscript{58} Id. at Art. 44.
\textsuperscript{59} Id. at Art. 45.
\textsuperscript{60} Id. at Art. 64 (noting a procedure called "Dispute Settlement").
\textsuperscript{61} Id.
The TRIPS agreement is a further example of patent harmonization and the development of a global patent system.

IV. HIGHLIGHTED DIFFERENCES BETWEEN UNITED STATES PATENT LAWS AND FOREIGN PATENT LAWS

Notwithstanding attempts to harmonize global patent laws, there are still significant differences among respective national patent law systems. The principal differences between U.S. and foreign patent laws fall into the following five categories: patent priority, grace periods, prior user rights, best mode requirement, and publication of pending applications. These are discussed in the following sections.

A. Patent Priority

Probably the most significant difference between U.S. and foreign patent laws is the fundamental dissimilarity in filing systems. Currently, U.S. patents are issued on a "first-to-invent" basis. Conversely, most foreign filing systems are on the "first-to-file" system.

1. The First-to-Invent System

In the United States, when two independent inventors file applications for the same invention, the patent will be granted to the applicant that can demonstrate that he actually invented the device first. Thus, the first inventor is awarded the exclusive patent despite the fact that he might be the second application for a patent on that invention. Specifically, 35 U.S.C. § 102 provides "that priority is established by three factors: [1] date of conception,

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65 Corbett, supra note 63, at 719; Jackman, supra note 64, at 67.
66 Corbett, supra note 63, at 719 (citing Jackman, supra note 64).
67 Id.
date of reduction to practice, and [3] due diligence."68 Section 102 provides that the term "senior inventor is used to denote the inventor who first conceived of the invention, while ‘junior inventor’ is the term given to the inventor who later conceives the same or a similar invention."69

With regard to the first factor establishing priority, the actual time of conception is the date of “formation, in the mind of the inventor, of a definite or permanent idea of the complete and operative invention, as it is thereafter to be applied in practice."70 As to the second factor, “a process is reduced to practice”71 when the process is successfully performed. For example, a machine is reduced to practice when it is assembled, adjusted and used; a manufacture is reduced to practice when it is completely manufactured; and a composition of matter is reduced to practice when it is completely composed.72 The due diligence requirement is “not officially triggered until just prior to a junior inventor’s conception.”73 In summary, the senior inventor will have priority over a junior inventor, unless (1) the junior inventor was the first to reduce to practice; and (2) the senior inventor did not use reasonable diligence from the time just prior to the junior inventor’s conception.74

69 Ulrich, supra note 68, at 409.
70 Gunter v. Stream, 573 F.2d 77, 80 (C.C.P.A. 1978); Ulrich, supra note 68, at 409.
71 35 U.S.C. § 102(g) (2006); supra note 68, at 409.
73 35 U.S.C. § 102(g) (2006). Generally, the senior inventor will discover the junior inventor’s conception only after the junior inventor applies for a patent.
74 Id.; Ulrich, supra note 68, at 409.
To apply the above, in a “first-to-invent” filing system, the first inventor is awarded the patent regardless of whether he was the second to actually file for the patent.\textsuperscript{75} Further, the inventor does not need to actually manufacture the invention as of the time of filing the patent application, meaning, “a constructive reduction to practice is adequate to establish a date of invention.”\textsuperscript{76} Moreover, the U.S. “first-to-invent” system of priority allows the inventor, who has not abandoned, suppressed, or concealed his invention, to procure a patent against another who has filed for that patent first, if the original inventor can prove that he was the first to invent the specific invention.\textsuperscript{77}

Some commentators maintain that the “first-to-invent” system is inherently a more equitable system because it allows the original and true inventor to usurp an unsupported patent.\textsuperscript{78} Interestingly, others assert that the Constitution mandates a first-to-invent system. They argue that the express language in the Patent Clause awards “inventors” rather than “filers” with the exclusive rights associated with a patent.\textsuperscript{79}

2. The First-to-File System

Conversely, much, if not most, of the modern world now employs the “first-to-file” system of priority.\textsuperscript{80} According to one commenter, only the U.S., Jordan, and the Philippines currently use the first-to-invent system.\textsuperscript{81} Moreover, Canada changed from a first-to-invent system to a first-to-file in 1989.\textsuperscript{82} If the recent

\textsuperscript{75} See 35 U.S.C. §102(g) (2006). The statute also requires that the first inventor did not abandon, suppress, or conceal the invention. §102(c).

\textsuperscript{76} Jackman, supra note 64, at 72.


\textsuperscript{78} Id. at 692 (citing George E. Frost, The 1967 Patent Law Debate—First-to-Invent vs. First-to-File, 7 DUKE L.J. 923, 926–29 (1967)).


\textsuperscript{80} Jackman, supra note 64, at 73.

\textsuperscript{81} Id.

\textsuperscript{82} Canadian Patent Act of 1987, R.S.C. ch. P-4 (1988); see Robert A. Wilkes, The Canadian Viewpoint: A New Perspective Bridging the First-to-Invent and
patent reform legislation is enacted into law, the U.S. could finally join the majority of nations who follow a first-to-file method to establish priority.\textsuperscript{83}

In contrast with the first-to-invent system briefly described above, the first-to-file system determines patent priority based on the actual first date of filing.\textsuperscript{84} In fact, the date of filing determines almost conclusively the right of patent priority, allowing courts to nearly avoid questions about burdens of proof and ancillary evidence that are prevalent in the first-to-invent system.\textsuperscript{85}

B. Grace Periods

The availability of a "grace period" is the second major issue encountered when discussing patent harmonization. A grace period provides a limited period of time to the applicant in which he or she may introduce the patent into the public or commercial spotlight without forfeiting the right to obtain a patent.\textsuperscript{86} Thus, during this grace period, an invention may be patented, or even sold while still maintaining the possibility of protection.\textsuperscript{87} This allows the inventor the benefit of publishing results and making sales without the fear that his respective patent will be misappropriated.\textsuperscript{88}

Pursuant to § 35 U.S.C. 102(b), an applicant is barred from obtaining a patent on an invention that was patented or described in a printed publication within or outside of the U.S., or was in public use or on sale in the U.S., more than one year prior to date

\textit{First-to-File Worlds}, 18 AIPLA Q.J. 18 (1990) (comparing Canada's newly adopted first-to-file patent system to previously existing first-to-invent system).


\textsuperscript{84} See Matthew P. Donohue, \textit{First-to-File vs. First-to-Invent: Will Universities be Left Behind?}, 21 J.C. & U.L. 765, 769 (1995); Jackman, \textit{supra} note 64, at 73.

\textsuperscript{85} Jackman, \textit{supra} note 64, at 74.

\textsuperscript{86} By not having the burden of proving who invented the patent first, courts would simply rely on the filing date.

\textsuperscript{87} 35 U.S.C. § 102(b) (2006).

\textsuperscript{88} Id.

\textsuperscript{89} Pritchard, \textit{supra} note 10, at 318.
of the U.S. patent application. The above provision protects a person who disseminates his or her research in advance of filing for a patent that may otherwise be deemed incomplete.

Unfortunately for U.S. inventors, few foreign countries employ grace periods. In most countries, any publication or disclosure of an invention prior to the date of an application for patent will result in a rejection of the application. Therefore, many U.S. inventors forfeit their patent rights in other countries inadvertently because they publish or disclose their respective inventions before they file for patent protection. Other countries employ the absolute novelty system, which does not recognize a pre-filing grace period. In such a system, any activity that makes the invention part of the state-of-the-art at any time prior to filing for patent protection will render the invention non-novel.

C. Prior User Rights

Prior user rights provide a limited defense against infringement claims in first-to-file systems. For example, in situations where prior users can establish a prior commercial use of the patent, or in the alternative, a substantial preparation for such a use before the filing date of the application, this may establish a defense.

With regard to the United States, prior user rights do not apply because such a defense is inherent in the first-to-invent system. To put it another way, a prior user rights provision attempts to provide an equitable solution for first-to-file situations that the first-to-invent system naturally provides for.

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91 Id.
92 DeBari, supra note 77, at 689.
93 Id.
94 Id.
95 Id.
96 JANICE M. MUELLER, AN INTRODUCTION TO PATENT LAW 438 (2d ed. 2006).
97 DeBari, supra note 77, at 700.
98 Id.
99 Id. at 700–01.
The United States also has adopted a unique standard for patent applications. The “best mode requirement” mandates that an applicant must disclose the best method contemplated for carrying out the invention; the inventor cannot submit, in the application process, an inferior version of the invention while secretly keeping the best version of the invention in reserve.

This precondition is best described as a “safeguard” against the desire of a patent applicant to obtain patent protection without making a full disclosure. Specifically, the requirement does not permit inventors to disclose only what they know to be their second-best embodiment, while retaining the best for themselves.

To determine whether the patent applicant has complied with this safeguard, federal courts look to a two-prong test. First, the court will determine whether, at the time the application was filed, the inventor actually possessed a best mode for working or practicing the invention. This is a subjective inquiry which focuses on the inventor’s state of mind at the time of filing. Second, if the inventor did possess a best mode, it must then be determined whether the written description disclosed the best mode such that a person skilled in the art could practice it. This is an objective inquiry, focusing on the scope of the claimed invention and the level of skill in the art.

Despite the above requirements, the failure to disclose the best mode of the invention will not per se invalidate the patent because if the inventor, at the time of filing the application, did not know of the better method or did not appreciate that it was the best method,
the patent will still be granted.\textsuperscript{111} Intentional, active concealment, or in some cases gross inequitable conduct, will likely invalidate a standing patent or result in the rejection of a patent application.\textsuperscript{112}

It goes without saying that the importance of such a requirement in the United States system is linked to the inherent fairness of the United States patent system. Moreover, the best mode requirement assures that deceit and duplicity are not rewarded. Nevertheless, as some foreign countries do not have a "best mode requirement,"\textsuperscript{113} this could be a case where the United States requirements should be retained and foreign countries should align their laws with this United States practice.

E. Publication of Pending Applications

Until very recently, United States patent law required that a pending patent application remain secret until the USPTO issued a patent for the actual invention.\textsuperscript{114} Nine years ago, Congress passed the American Inventors Protection Act of 1999.\textsuperscript{115} This statute provides for the publication of most applications eighteen months after the original filing date. If an applicant certifies to the USPTO that the invention will not be filed in another country, then the applicant can prevent the publication of his application.\textsuperscript{116} It should be noted that most foreign countries publish every application eighteen months after the original filing date.\textsuperscript{117}

\textsuperscript{112} Union Carbide Corp. v. Borg-Warner, 550 F.2d 355, 363 (6th Cir. 1977).
\textsuperscript{113} According to the 2006 CRS Report for Congress, Japan and many European countries do not require this level of disclosure. Corbett, \textit{supra} note 63, at 721–22; \textit{Schacht \& Thomas}, \textit{supra} note 62.
\textsuperscript{114} See 35 U.S.C. \S\ 122(b)(2) (2006); Corbett, \textit{supra} note 63, at 722;
\textsuperscript{115} See Corbett, \textit{supra} note 63, at 722.
\textsuperscript{116} See 35 U.S.C. \S\ 122 (b)(2) (2006); Corbett, \textit{supra} note 63, at 722.
\textsuperscript{117} Corbett, \textit{supra} note 63, at 722.
THE BENEFITS, PROBLEMS AND BARRIERS ASSOCIATED WITH HARMONIZING AND PATENT LAW AND CREATING A GLOBAL SYSTEM

As frequently noted, "[t]he need for harmonization and a global patent system is driven by the globalization of commerce, the reduction of trade barriers, and the need for stability and predictability in international patent protection." With this true sentiment, patent protection in a single jurisdiction is an inefficient method to protect the interest of both domestic and international inventors. Despite this need to reform domestic and international patent laws, the problems and barriers associated with harmonizing such laws may create roadblocks that no legislation in the near future can overcome.

A. Benefits

When uniform patent laws were first being discussed between the thirteen original colonies/states, detractors of such a system could have crippled technological advancement in the early history of the United States. The federal Patent Act of 1793 was instrumental in spurring the necessary inventiveness which was essential to the technological advancement of the United States. Today, United States technological advancements are axiomatically linked to the original uniformity among the thirteen colonial states. Without such uniformity, patents, and arguably the drive to invent, would have been spiritless. It is important to note how this uniformity generated some of the greatest inventions in the modern world. Global uniformity and harmonization of patent laws would similarly generate great technological advancements while simultaneously protecting the inventor on a global scale.

Historical accounts of the long term benefits of a uniform system of laws, like the above example of the Patent Act of 1793, are numerous. However, the five most common arguments for patent harmonization are as follows: (1) harmonization leads to a reduction of patent costs by exchange of results between examining patent offices; (2) reduction of problems and errors

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118 Id. at 722–23.
119 SCHACHT & THOMAS, supra note 62.
during the prosecution of patent applications in foreign countries; (3) making worldwide patent protection more effective; (4) each step of harmonization is an incentive to further harmonization; and (5) further step-by-step harmonization may finally motivate the United States to give up the principle of first to invent.120

Cost is a major reason why major United States high tech corporations are lobbying for patent reform.121 To these corporations, any harmonization of laws that would effectively reduce the cost associated with patent infringement litigation is a welcomed initiative. As an example of the current patent enforcement litigation crisis, Microsoft reportedly spends nearly 100 million dollars on patent infringement litigation.122 Similarly, Intel has also recently estimated that it spends close to 20 million dollars on patent litigation.123

In an age where patents can be misappropriated with ease, patent harmonization and global patent laws can encourage the drive to invent while simultaneously protecting the international applicant, as well as reducing costs. One commentator notes that because international trade is increasing, uniform patent protection development necessitates harmonization.124

B. Ideological and Economic Barriers

Traditionally, the three most common reasons for resistance to patent harmonization and a global patent law system are: “[1] the reluctance of national governments to give up their current systems which . . . favor domestic entrepreneurs; [2] the relinquishment of a portion of national sovereignty for the sake of a global system;

121 SCHACHT & THOMAS, supra note 62.
124 Jackman, supra note 64, at 74.
and [3] the reconciliation of the different national interests of the developing countries and the developed countries.”

These arguments can best be understood by examining the different philosophical and ideological beliefs in the nations resisting such harmonization.

1. Ideological Barriers

Different cultures and countries have, over time, developed different philosophical views towards intellectual property. Moreover, these diverse philosophies have yielded laws that are contrary to the United States patent system. It is these diverse philosophies and ideological beliefs that explain why uniform patent laws have been, and could be, so difficult to establish.

An examination of the United States' philosophical view of intellectual property reveals multiple themes that are present in the current United States patent system. Two theories, “natural rights” and “reward for services rendered,” highlight the idea of fundamental equality in the pursuit of invention, while the “exchange for secrets” and “monopoly profits incentive” themes are considered to be economically focused. These theories, while shared by many developed countries, are not prevalent in most developing nations. Thus, the United States' philosophical view of intellectual property states that “necessity” may be the

125 Id. at 76.


128 Penrose, supra note 127, at 21; Hettinger, supra note 127; Hughes, supra note 126.

129 Penrose, supra note 127, at 194; Hettinger, supra note 127; Hughes, supra note 126.

130 Penrose, supra note 127, at 31; Hettinger, supra note 127; Justin Hughes, supra note 126.
mother of invention,\textsuperscript{131} but "drive." and perhaps more importantly, the "desire to be rich," can be invention's best friend.

In comparison, China, for example, had quite a different view on intellectual property until the late 1970s\textsuperscript{132} that is still potent today. China's antediluvian view of intellectual property is not rooted in excludability, but in community; it presupposes that works of the mind are not "property," \textit{per se}.\textsuperscript{133} In China, works of the mind were not protected until the late 1970s.\textsuperscript{134} Simply put, the mere idea that "property of the mind" was excludable is counterintuitive to the Chinese people.\textsuperscript{135}

In countries like China, where the very idea of intellectual "property" is novel, uniform patent laws and a global patent system would be very difficult to implement, and even more difficult to enforce. And since sedulous enforcement is the key to spurring invention, dissimilar fundamental views need to be addressed before such a system could be effective.

Further, a harmonized system of patent laws, similar to the United States system, would be difficult to enforce in countries like China. Interestingly, because the idea of protecting intellectual property is so contrary to these ideological beliefs on intellectual property as evidenced by the recent piracy problems that plague China,\textsuperscript{136} most people in countries like China do not

\textsuperscript{131} "Necessity is the mother of invention . . . . This saying appears in the dialogue Republic, by the ancient Greek philosopher Plato." E.D. Hirsch, Jr., et al., \textit{The New Dictionary of Cultural Literacy} 54 (3rd ed. 2002).


\textsuperscript{134} It is noted that China, since the 1970s, has adopted a view similar to the U.S. with regard to intellectual property. \textit{Id.} at 555.

\textsuperscript{135} \textit{Id.} at 556.

\textsuperscript{136} \textit{Id.}
feel as though they are appropriating "property." This ignorance of intellectual property rights is likely to be a barrier that will take time to address, as legislation would not only be changing laws, it would be altering the way people think.

Considering that countries like the United States and France have attempted to harmonize patent laws across the globe, and given the amount of time elapsed since the original Paris Convention, harmonization will likely arrive faster than a global patent system. Yet, a global patent system will still likely be created, incrementally over many years.

2. Economic Barriers

Notwithstanding the strong ideological beliefs of different countries, economic barriers could pose the most difficult challenge to any drive to harmonize patent laws and create a global patent system.

For instance, one of the reasons why a country like the United States has such an advanced patent system is because the United States, as a developed nation, has the resources, time, and funds to enforce the protection of intellectual property. Developing nations do not have the resources for such enforcement.

Patent enforcement generally is extremely expensive. One study published in 2000 by the Wall Street Journal estimated that patent enforcement costs roughly 1.2 million dollars per patent. The 2006 CRS Report for Congress elaborated further on those results by finding that litigation expenses appear to be increasing, with one recent commentator describing an "industry rule of thumb" whereby "any patent infringement lawsuit will easily cost 1.5 million dollars in legal fees alone to defend."

137 Id.
138 Id.
140 See Schacht & Thomas, supra note 62, at 8.
142 See Stirland, supra note 123, at 312.
Interestingly, while developed nations typically have a strong view of enforcing and protecting intellectual property, developing countries see intellectual property rights as restricting their respective ability to develop economically. China, for example, still shares the view of a developing country, irrespective of its enhanced place on the world stage.

The question becomes: how can a developing nation afford to enforce a patent system when they do not have the resources to do so? Further, what good is a patent system that is not sedulously enforced?

VI. RECENT ATTEMPTS TO HARMONIZE UNITED STATES PATENT LAWS: THE PATENT REFORM ACT OF 2007

The concept of harmonizing United States patent laws is not new. The Patent Harmonization Act of 1992 was first introduced to both opposition and praise. Even later, the Patent Reform Act of 2005 sought to harmonize United States patent laws to foreign filing systems. The Patent Reform Act of 2007 is the most recent attempt to harmonize United States patent laws with those of the rest of the world. The bill, according to U.S. Senator Patrick Leahy, "updates current patent laws to provide much needed reform for patent seekers and patent holders." In addition, Senator Leahy stated that "if we are to maintain our position at the forefront of the world's economy and continue to lead the globe in innovation and production, then we must have an efficient and streamlined patent system to allow for high quality patents that limits counterproductive litigation." The Patent

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143 McCall, supra note 139, at 591.
144 Id.
145 Ulrich, supra note 68.
149 Id.
Reform Act of 2007 passed the House in amended form and if enacted, would have a significant impact on the United States patent law system.


On April 18, 2007, both the Senate and the House introduced a patent system reform bill that, among other things, provided for the following changes:

1. First-to-file rights and elimination of interference proceedings;
2. Reformation of the “Prior Art” Definition;
3. Establishment of Post-Grant Opposition Proceedings;
4. Damages Awards;
5. Modify Venue;
6. Willful Infringement;
7. Prior User Rights;

Section 3 of the Patent Reform Act of 2007 eliminated the first-to-invent system and replaced it with the first-to-file system. In doing so, the Act abolishes interference proceedings which have been the alleged bane of the United States patent system.

Consequently, a change to the first-to-file system also requires a change in the definition of “prior art.” Currently, section 102(g) supplies the language that defines prior art. It provides that “[a] person shall be entitled to a patent unless . . . before the applicant's invention thereof the invention was made in this country by another . . . .” If the Patent Reform Act of 2007 were to become law, prior art would be redefined to accommodate the first-to-file system. The Act redefines “prior art” as the subject matter that was “patented, described in a printed publication, in

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150 H.R. 1908, supra note 147 (On Sept. 7, 2007, the United States House of Representatives passed the bill by a vote of 220-175).
151 Id. See also Woodcock/Washburn, infra note 153.
152 H.R. 1908, supra note 147.
155 Id.
156 Woodcock Washburn, supra note 153.
public use, or on sale" prior to the effective filing date for the patent, unless such disclosure was made by the inventor within one year from the filing date. According to some commentators:

The first-to-file aspect of the 2007 Act significantly alters the scope of prior art. Public uses and sales occurring abroad would become prior art. Critically, because of the first-to-file system, patentees would no longer be able to ‘swear behind’ certain types of prior art by showing prior invention. On the other hand, certain types of art currently within §§ 102 (f) and (g) would no longer be prior art under the new law.

The Patent Reform Act of 2007 has many other interesting changes that could have a significant impact on the United States patent system. Nevertheless, the arguments surrounding the changes are quite traditional.

B. Argument in Favor and Against the 2007 Act

Among its many sections, the Patent Reform Act of 2007 contains a provision that would effectively switch the filing system from first-to-invent to first-to-file. This would change the traditional method of filing, which has stood for the past 165 years, whereby a patent applicant who demonstrates that he is the first in time to conceive of an invention has an overriding priority over all competing applicants. By putting forth this legislation, Congress has once again put the debate between the first-to-file and first-to-invent systems at the forefront of the discussion.

The testimony of witnesses at the hearings for the Patent Reform Act of 2007 reflects the difference of opinion over the current first-to-invent system. Gary Griswald, the President and Chief IP Counsel of 3M Innovative Properties Company, testified

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157 H.R. 1908, supra note 147.
158 See id.; Woodcock Washburn, supra note 153.
159 Woodcock Washburn, supra note 153.
160 See generally H.R. 1908, supra note 147.
161 Id.
162 Id. Ulrich, supra note 68, at 406.
164 See generally SCHACHT & THOMAS, supra note 62.
on April 26, 2007 as to the benefits of a first-to-file system. Mr. Griswald stated that the enactment of the first-inventor-to-file would “significantly simplify the patent laws, provide fairer outcomes for inventors, speed final determinations of patentability, and reduce the overall cost of procuring patents.” Likewise, Kevin Sharer, CEO and Chairman of the Board for Amgen, Inc., testified that “[r]elying on [the first-to-invent system] creates a significant level of uncertainty for the patent holder because it is only after litigation and discovery that the patent holder can be certain the references used to determine the invention date are reliable and that the patent holder is therefore the first inventor under the law.”

Mr. Griswald and Mr. Sharer’s arguments reflect the traditional arguments encouraging the elimination of the first-to-invent system. Traditional proponents of the first-to-file system claim that this system would negate the need for costly interference proceedings by simply determining priority by looking at who filed first. Presumably, such a filing system will simultaneously reduce the costs associated with interference proceedings and expedite litigation by simply looking at who filed first. Further, proponents also assert that the first-to-invent system is not as inherently fair as commonly understood because larger corporations are able to bear the expense of interference proceedings while smaller business, and individuals, cannot. First-to-file proponents also claim that provisional applications allow the applicant to establish a priority date at relatively low cost and relaxed filing requirements.

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166 Id.

167 Patent Reform Act of 2007: Hearing on H.R. 1908 Before the H. Subcomm. on Courts, the Internet, and Intellectual Property, 110th Cong. (April 26, 2007) (statement of Kevin Sharer, CEO and Chairman of the Board of Amgen, Inc.).

168 Corbett, supra note 63, at 724 (citing Jackman, supra note 64, at 83–84).

169 Id.

170 Id.
With regard to the institutions that do not desire change of the first-to-invent system, William T. Tucker, of the University of California, stated before the House Subcommittee, that:

[T]he strength of the U.S. patent system has in large part been the result of the existing patent rules, including the current first-to-invent system. In reviewing the situation, it is not unreasonable to posit that the first-to-invent system, with its public policy intent to reward innovation, collaboration and public discourse, is at least partly responsible for the historical strength of the U.S. commitment to the individual inventor.\textsuperscript{171}

Mr. Tucker's view is consistent with the arguments commonly made by universities that if Congress is going to adopt a first-to-file system, it must include the following: an effective grace period, a strong provisional patent application procedure, and an inventor's oath requirement. Otherwise, such a change would hurt higher education.\textsuperscript{172} The university's view is that any change in the first-to-invent system would adversely impact higher education technology by rewarding the person who has the means and ability to file patent applications as quickly as possible over the first person to conceive a groundbreaking idea and realize it in a working invention.\textsuperscript{173} Mr. Tucker's testimony demonstrates that a change with respect to the filing system could be accomplished so long as appropriate measures are taken to protect the individual inventor.

In addition to universities expressing their apprehension over the first-to-file system, small business owners have also expressed their trepidation.\textsuperscript{174} Their concern is that smaller companies and entrepreneurs do not have the resources to generate patent applications as quickly as large corporations.\textsuperscript{175} Traditionally, such

\textsuperscript{171} Patent Reform Act of 2007: Hearing on H.R. 1908 Before the H. Subcomm. on Courts, the Internet, and Intellectual Property, 110th Cong. (April 26, 2007) (testimony of William T. Tucker, Ph.D., MBA, Executive Director, Research Administration and Technology Transfer at the University of California) [hereinafter Tucker].


\textsuperscript{173} See Tucker, \textit{supra} note 171.

\textsuperscript{174} Id.

\textsuperscript{175} Id.
small business owners have been happy with the “first-to-invent” process “because they get the rights if they can show that they’ve invented it and they’ve been selling the product.”

Traditional first-to-invent enthusiasts assert that despite the claims to the contrary, the U.S. system is superior to foreign filing systems because the United States patent system is intended to protect the inventor who was the first to actually invent, not the first person to file. Specifically, scholars note that the first-to-invent system is inherently a more equitable system because it allows the original and true inventor to usurp an unsupported patent. Furthermore, the United States patent system is based upon the principles of equity, and to change the filing requirements would effectively take away the heart of the system.

Aside from the practical arguments regarding the first-to-file system, constitutional considerations are also present. As mentioned above in section IV, some scholars hold that the U.S. Constitution mandates a first-to-invent system because the language in Article I, section 8, clause 8, awards “inventors” with the exclusive rights associated with a patent, not filers.

There are valid arguments on both sides of any point made for a change in the filing system; nevertheless, if this bill is approved and signed into law, the United States patent system would change significantly and the United States would be taking significant steps to harmonize its laws with foreign systems.

VII. Conclusion

As the movement toward globalization continues to gain momentum, proponents of harmonization and a global patent system observe that harmonization would solve many problems

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176 Id.
177 See Corbett, supra note 63, at 724.
179 See Ulrich, supra note 68, at 418–19.
180 See generally Marcedo, supra note 79, at 193.
181 Id.
182 See Ulrich, supra note 68, at 416.
related to an economically globalized society. With the absence of harmonized patent systems in a globalized economy, multinational corporations are hindered from further expanding their businesses as their intellectual property is continually compromised in nations where their patents are not enforced. Nevertheless, dissimilar ideological beliefs and economic disparities of nations may present barriers that no legislation in the near future can overcome.