

NOTE

THE IMPACT OF THE 'TECHNOLOGY TRANSFER SURPLUS' ON THE TRADE DEFICIT WITH JAPAN AND ITS CURES

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I. DEFINING THE PROBLEM: "TECHNOLOGY TRANSFER SURPLUS"

The United States' trade deficit with Japan is being fueled, in large part, by a technology transfer surplus from U.S. business to Japanese business.¹ The term "technology transfer surplus" connotes that U.S. businesses are losing a greater amount of exclusive development rights (*i.e.* patent rights) associated with patentable technology to Japanese firms than it acquires from Japanese firms.²

The technology transfer surplus contributes significantly to the United States-Japan trade imbalance in the following manner. The primary value of technology to its owner is its potential to generate wealth and profits via the manufacture of consumer goods and products.³ When technology is patentable, the owner of the technology in question maintains the right to develop the technology exclusive of other would-be developers.⁴ It follows that the patent owner also maintains the exclusive right to the wealth generated by the technology's development. Conversely, when the exclusive right to develop technology is lost, so is the exclusive right to profit.

Though at first glance the lopsided transfer of development rights to

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¹ See, e.g., Ronald E. Yates, *U.S. Still Draining its Reservoir of Technological Innovation*, CHICAGO TRIBUNE, Feb. 23, 1992, at B1, B2; e.g. *Patent Protections in Japan; I. Survey of U.S. Firms' Experiences*, 15 EAST ASIAN EXECUTIVE REPORTS, Oct. 15, 1993, available in LEXIS, at 9. [hereinafter *Patent Protections in Japan I*]. All page numbers for *Patent Protections in Japan I, II, and III* are LEXIS page citations.

² I developed the 'technology transfer surplus' myself to describe U.S. business' net loss of exclusive development rights to Japanese business.

³ See Thomas L. Powers and Ricardo P. Leal, *Is the U.S. Innovative? A Crossnational Study of Patent Activity*, 34 MGMT. INT'L REV. 67 (Jan. 1994).

⁴ See 35 U.S.C. § 101 (1984).

Japanese firms from U.S. firms appears to decrease the trade deficit, in reality the lopsided transfer of rights increases Japanese firms' profits from the development of patentable technology, while simultaneously eliminating U.S. firms' ability to profit from the same technology.⁵ Therefore, reducing the flow of technology from the United States to Japan is a method of reducing the trade deficit.

II. THE CAUSES OF THE TECHNOLOGY TRANSFER SURPLUS

Two interrelated phenomena account for the one-sided transfer of technology from the United States to Japan. First, American business loses technology to its Japanese counterparts when it attempts to patent its inventions in Japan.⁶ Japan's patent system provides patentable subject matter with less protection of exclusive development rights than does the American patent system.⁷ This lower level of protection encourages patent system users to manipulate the Japanese system with a practice known as patent flooding.⁸ Through patent flooding, Japanese firms are able to usurp the exclusive development rights associated with technology of American users of the Japanese system.⁹

The next phenomenon, coercive licensing,¹⁰ is the practical effect of American firms' patent flooding experience with the Japanese patent system.

⁵ See Yates, *supra* note 1, at B3-B5.

⁶ See Donald M. Spero, *Patent Protection of Piracy--A CEO Views Japan*, HARV. BUS. REV., Sept.-Oct. 1990, at 58.

⁷ Samson Helfgott, *Cultural Differences Between the U.S. and Japanese Patent Systems*, 3 WORLD INTELL. PROP. REP. (BNA) 269 (Dec. 1989), reprinted in 72 J. PAT. & TRADEMARK OFF. SOC'Y 231, 236 (1990).

⁸ See *Patent Protection in Japan; II. Causes of U.S. Firms' Patent Problems, Effects of Firms' Patent Practices, Recent JPO Changes*, 15 EAST ASIAN EXECUTIVE REPORTS, Nov. 15 1993 at 6, 12. [hereinafter *Patent Protection in Japan II*]. 'Patent flooding', explained in greater detail below, is the term commonly employed to describe the conduct of firms who manipulate the Japanese patent system in order to appropriate the profitability associated with the development of the original subject matter, or to force licensing agreements with the owners of the rights to the original subject matter. See, e.g., Spero, *supra* note 6; *infra* note 112 and accompanying text for recent example of patent flooding.

⁹ *Id.*

¹⁰ *Id.* at 5. "Japanese companies use patent flooding as a tactic to force cross-licensing by obtaining patents on numerous and insignificant variations [of the basic technology], holding another inventor's basic patent 'hostage' with the threat of bringing an infringement action based on the variations." *Id.*

Some U.S. firms opt to enter licensing arrangements with their Japanese counterparts whereby technology is transferred to the Japanese firm in exchange for payment, instead of attempting to navigate the Japanese patent system and risk a total loss of rights and profitability via patent flooding.¹¹ These firms view the inadequate protection of patent rights and the resulting lost profits as inevitable consequences of employing the Japanese patent system. Consequently, entering licensing agreements generates at least some return on their development investment of the patentable subject matter.¹² Such agreements appear to reduce the trade deficit between the United States and Japan because they are actual exportations to Japan from the United States.¹³ Yet, in fact, such agreements exacerbate the deficit. Selling or licensing the rights to develop one's technology results in the forfeiture of exclusive rights to profits that the technology will generate.¹⁴ When consumer products resulting from the development of the transferred technology are marketed in the United States, the sales proceeds return to the Japanese owner of the technology.¹⁵

An additional factor that contributes to the technology transfer surplus is that Japanese users of the U.S. patent system are able to employ the excellent patent protections provided by the American system. As a result, U.S. firms are unable to counterbalance their losses in Japan with a

¹¹ See *Patent Protection in Japan*; I, *supra* note 1, at 9. This article summarizes the results of a GAO survey of United States users of the Japanese patent system conducted by the U.S. General Accounting Office at the behest of senators Jay Rockefeller (D-WV), Dennis DeConcini (D-AZ), and Lloyd Bentson (D-TX).

¹² *Id.* at 20.

¹³ See Yates, *supra* note 1, at B1, B2. "In 1990 U.S. companies sold some \$2.5 billion in technology to Japanese firms via licensing and patent agreements, while the Japanese sold less than \$500 million in technology licenses and patents to American firms." *Id.*

¹⁴ *Id.*

¹⁵ *Id.* The transfer of videocassette recording technology from Ampex, an American firm, to Sony, a Japanese firm, provides a prime example of the incredible magnitude such technology transfers can have on the trade deficit. Video cassette recording technology was developed by Ampex in the late 1950's. In 1960 Ampex sought out Sony to improve this technology hoping to incorporate Sony's transistor technology into its video cassette recorder designs. The idea was that the marriage of Sony's transistor technology with Ampex's videocassette recording technology would yield small, inexpensive units perfect for public consumption. Before the deal could be consummated, however, Ampex's management panicked, and backed out of the relationship. Sony successfully sued Ampex which resulted in a fully paid license to use Ampex's technology to create videocassette recorders for the marketplace. The rest, as they say, is history.

corresponding gain in the United States.

Thus far the phenomena generating the technology transfer surplus have been briefly described, but more important questions remain: What qualities of the Japanese patent system encourage the technology transfer surplus? And, how may the technology transfer surplus be remedied? These questions are relevant because their answers will aid in devising strategies for reducing the technology surplus which will likewise reduce the trade deficit.

III. WHY JAPAN'S PATENT SYSTEM OPERATES TO FACILITATE THE TECHNOLOGY TRANSFER SURPLUS: ANALYSIS OF VARIOUS THEORIES

Three major theories attempt to explain why American firms lose the ability to develop patentable subject matter exclusively. In addition to describing these theories, this note will outline an additional possibility.

A. *Out-right Discrimination Theory*

According to proponents of this view, the Japan Patent Office (JPO) simply discriminates against foreign users because every attribute of the Japanese system is designed to reduce the ability of foreign users to protect their patent rights.¹⁶ Japanese users benefit from this discrimination by gaining access to valuable patentable subject matter of foreign entities.¹⁷

These proponents fail to note, however, that all users of the JPO, including Japanese entities, experience the loss of patent rights due to the system's design and manipulation in nearly the same degree.¹⁸ Ironically, in fact, the American system is more blatantly discriminatory and fraught with peril for unwitting foreign applicants than the Japanese system.¹⁹

¹⁶ See *Patent Protections in Japan I*, *supra* note 1, at 18.

¹⁷ *Id.*

¹⁸ See Michael Todd Helfand, *How Valid Are U.S. Criticisms of the Japanese Patent System?*, 15 HASTINGS COMM. & ENT. L.J. 123, 139 (1992).

¹⁹ The *Hilmer* Doctrine and 35 U.S.C. § 104 (1984) operate to give domestic patent applicants an advantage over their foreign counterparts. Section 104 prohibits the use of conduct that occurs in foreign countries to prove an invention date for a PTO patent application. In other words, only conceptualization and reduction to practice activities occurring in the United States are admissible as evidence for determining an invention date. Likewise, the *Hilmer* Doctrine precludes foreign U.S. patent holders from using their foreign patent filing dates as a reference point for determining 'prior art' against other U.S. applications concerning the same patentable subject matter. *In re Hilmer*, 359 F.2d 859

B. Practice Makes Perfect Theory

Under this view, Japanese firms' tactical advantage in the ability to manipulate the JPO for the appropriation of patentable subject matter is a matter of practical reality. Japanese firms gain this advantage in two ways. One way is through practical experience.²⁰ Since the system is native to Japan, Japanese users have a greater incentive to learn its nuances, and use the system's lower protections offensively.²¹ American firms do not have this same incentive, and instead are ambivalent towards learning to master using the Japanese system.

Second, Japanese firms involved in the development of patentable subject matter are typically very large corporations that maintain the resources necessary to manipulate the JPO effectively.²² Conversely, much smaller firms are responsible for the bulk of the development of patentable subject matter in the United States.²³ Smaller businesses are generally less liquid, and therefore less able to commit the resources required to navigate the JPO without experiencing a loss of rights.²⁴

(C.C.P.A. 1966). The issue in *Hilmer* was whether section 119 of Title 35 was correlative with section 102. Section 119 permits foreign PTO applicants to 'back up' their effective filing date in the U.S. to the filing date of a previously filed foreign application. As will be discussed, section 102 provides that previously issued patents constitute 'prior art' as of their date of filing, which is a novelty bar to future patent issuance for similar subject matter. The court in *Hilmer* reasoned that Congress' only purpose in promulgating section 119 was to comply with the International Convention for the Protection of Industrial Property, while the purpose of section 102 was designed to advantage U.S. inventors over foreign inventors. Therefore the court in *Hilmer* determined that section 119 was not correlative with section 102, and thus, a U.S. patent granted to a foreign applicant becomes prior art only as of its actual U.S. filing date, not the effective U.S. filing date provided by section 119. For an in-depth analysis of the *Hilmer* Doctrine, see Kevin L. Leffel, *Hilmer Doctrine and Patent System Harmonization: What Does A Foreign Inventor Have at Stake?*, 26 AKRON L. REV. 355 (1992).

²⁰ See Helfand, *supra* note 18, at 159-162.

²¹ *Id.*; see also *Effect of the Japanese Patent System on American Business: Hearing Before the Subcomm. on Foreign Commerce and Tourism of the Senate Comm. on Commerce, Science, and Transportation*, 100th Cong., 2d Sess. 3 (1988) [hereinafter *Effect Hearing*].

²² *Id.* at 149; see also Spero, *supra* note 6, at 59.

²³ See *Effect Hearing*, *supra* note 21, at 46-47; see also William T. Fryer, 1989 *Summary of Proceedings*, 1989-1990 A.B.A. SEC. PAT. TRADEMARK & COPYRIGHT L. 94 [hereinafter *Summary of Proceedings*].

²⁴ See Spero, *supra* note 6, at 59.

While these observations are accurate, they do not aid in determining why the Japanese patent system offers less substantive protection of development rights than the U.S. system.

C. Difference in Patent Systems' Objectives Theory

The last prevailing view posits that differences in the goals of the respective patent systems leads to less patent protection in Japan than in the United States.²⁵ These commentators believe that the aim of the Japanese patent system is to promote Japan's industrial development, while the aim of the American system is to encourage and protect the individual's exclusive right to develop his or her creations.²⁶

D. Author's Theory

In my view, the goals of the respective systems are analogous: the promotion of the development of science and technology within each country.²⁷ The aim of the U.S. patent system is set by the Intellectual Property clause of the U.S. Constitution, which provides that "[t]he Congress shall have Power . . . to promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries."²⁸ The Japanese patent statute begins in Article 1 by proclaiming "this law aims to encourage inventions by promoting the protection and utilization of inventions and thereby, to contribute to the development of industry."²⁹ The difference between the two systems lies in the manner in which this aim is to be achieved.

The Japanese believe that the development of science is best achieved

²⁵ See Helfand, *supra* note 18, at 134; Helfgott, *supra* note 7, at 232.

²⁶ See Helfgott, *supra* note 7, at 232, 234. Helfgott describes each system in the following manner: "[I]n the U.S., the essential purpose of a patent is to protect the patentee," while "the goal of the Japanese patent system is to teach industry new innovations." *Id.*; see also Helfand, *supra* note 18, at 134. Similarly, Helfand describes each system this way: "[The goal of the U.S. system is] . . . to protect the inventions and discoveries of individuals," while "the goal [of the Japanese system is] . . . to promote the development of Japanese industry." *Id.*

²⁷ See U.S. CONST. art. I, § 8, cl. 8.; see PATENT LAW, LAW NO. 121 of Apr. 13, 1959, art. 1 (Japan) [hereinafter JAPAN PATENT LAW].

²⁸ U.S. CONST. art. I, § 8, cl. 8.

²⁹ JAPAN PATENT LAW, *supra* note 27, art. 1.

through a policy that encourages sharing technology, so that all of an industry's resources may be put forth collectively to increase overall development of the industry, technology and the speed at which this development occurs.³⁰ In contrast, the United States seeks to encourage the development of science by providing incentives for individuals to invent.³¹

These conflicting incentives generate the differences in substantive and procedural hurdles each system employs to determine patentability, in addition to the phenomena discussed earlier that result in the technology transfer surplus. By comparing the substantive and procedural hurdles implemented by each system, the causes of the technology transfer surplus will crystallize.

IV. COMPARISON OF THE UNITED STATES AND JAPANESE PATENT SYSTEMS

A. *Origins of Respective Patent Systems*

The U.S. Patent System, embodied in Title 35 of the U.S.C.,³² is a Congressional creation mandated by the Intellectual Property Clause of the U.S. Constitution.³³ Title 35 is in essence a federally-marshaled, incentive-laden contract offer by the government on behalf of society, where an inventor bargains for a limited right of exclusive development of the subject matter of the invention in exchange for full disclosure of the subject matter via publication to society.³⁴

In general, Title 35 authorizes the creation of the Office of Patents and Trademark (PTO), and authorizes the PTO to examine patent applications for the purpose of granting or denying patent protection.³⁵ Additionally, Title 35 provides the procedural guidelines for initiating the patent application

³⁰ See Helfgott, *supra* note 7, at 236.

³¹ See *Summary of Proceedings*, *supra* note 23, at 94.

³² See generally 35 U.S.C. § 100-376 (1984).

³³ See U.S. CONST., art. I, § 8, cl. 8.

³⁴ See, e.g., Michael A. Epstein, *MODERN INTELLECTUAL PROPERTY*, (2d ed. 1992). "In return for the seventeen year right to exclude others from making, using, or selling the patented item, the patentee must disclose with particularity the subject matter of the patent." *Kewanee Oil Company v. Bicron Corporation*, 416 U.S. 470 (1974). "In return for the right of exclusion—'this reward for inventions.' " *Universal Oil Co. v. Globe Co.*, 322 U.S. 471 (1944)—the patent laws impose upon the inventor a requirement of disclosure." *Id.*

³⁵ See 35 U.S.C. § 101.

process,³⁶ the substantive guidelines of patentability which propels the PTO's examination process,³⁷ and procedures for contesting PTO rulings.³⁸

Japan's entrance into the Paris Convention for the Protection of Industrial Property³⁹ in 1899 led to the adoption of its present patent system embodied in Law No. 121, passed in 1959.⁴⁰ This law, in addition to the Utility Model Law, Law No. 123, 1959,⁴¹ encompasses the current invention protection available in Japan. These laws mandate the creation of the Japan Patent Office (JPO), which is authorized to perform functions analogous to those performed by the United States' PTO.

B. Comparison of Philosophical Objectives of Respective Patent Systems

As the previous description indicates, both the American and Japanese patent systems aim at the same end: the promotion of scientific and technological development.⁴² The conflict between the two systems arises from the basic assumptions each system has adopted as its starting point for reaching these analogous ends.⁴³ The U.S. system is designed to provide protection for one's subject matter from competitors, so that the individual will have a greater incentive to develop fully all the scientific and technological potential of the subject matter.⁴⁴ Conversely, Japan's system is designed to promote the development of science and technology through the sharing of innovations with all parties potentially able to improve upon the innovation.⁴⁵

³⁶ *Id.* § 111.

³⁷ *Id.* §§ 101-103.

³⁸ *Id.* § 122.

³⁹ Convention of Paris for the Protection of Industrial Property, March 20, 1883, 25 Stat. 1372, T.S. No. 379.

⁴⁰ See JAPAN PATENT LAW, *supra* note 27, art. 1.

⁴¹ See UTILITY MODEL LAW, LAW NO. 123 of April 13, 1959.

⁴² Compare U.S. CONST., art. I, § 8, cl. 8 with JAPAN PATENT LAW, *supra* note 27, art. 1.

⁴³ But see Helfgott, *supra* note 7, at 232. ("In the U.S., the essential purpose of a patent is to protect the patentee."); but see Helfand, *supra* note 18, at 133. ("[T]he goal of the Japanese system differs fundamentally from that of the United States.")

⁴⁴ See U.S. CONST., art. I, § 8, cl. 8.

⁴⁵ Arthur Wineberg, *The Japanese Patent System: A Non-tariff Barrier to Foreign Businesses?*, 22 J. WORLD TRADE 11, 19 (1988).

This difference in primary assumptions generates the balance of major differences between the two systems, including patentability requirements, filing procedures, examination procedures, claim interpretation, and infringement analyses. These differences will be discussed below, with an emphasis on how these differences affect the surplus technology transfer with Japan.

C. Comparison of Respective Substantive Requirements of Patentability

1. Definition of Invention: Requirements of Usefulness, Novelty, and Non-obviousness

The substantive requirements of patentability are fairly analogous between the two systems and contribute negligibly to the difference in protections offered. Both systems require that patentable subject matter be useful, novel, and unobvious to persons reasonably skilled in the discipline to which the subject matter pertains.⁴⁶

U.S.C. Title 35 defines a patentable invention as a "new and useful process, machine, manufacture, or composition of matter."⁴⁷ In similar fashion, Japan's patent law provides that a patentable invention is "any high grade creation among creations of technical idea utilizing natural rules."⁴⁸

Novelty requires that the subject matter be original, and not precluded by the existence of "prior art."⁴⁹ "Prior art" encompasses the state of technology known at the date of invention or the date of application filing⁵⁰ in the discipline to which the subject matter pertains.⁵¹ In both patent systems prior art will preclude patentability in the following instances: when the subject matter of the present application exists in a previously issued

⁴⁶ See 35 U.S.C. §§ 101-103; see JAPAN PATENT LAW, *supra* note 27, art. 2, 29.

⁴⁷ 35 U.S.C. § 101.

⁴⁸ JAPAN PATENT LAW, *supra* note 27, art. 2.

⁴⁹ See generally, Epstein, *supra* note 34, at Ch. 6, II, C. For the convenience of those readers who may have access to similar editions of Epstein's MODERN INTELLECTUAL PROPERTY (other than the second edition) references will be made not to page numbers, but to chapters and parts.

⁵⁰ See JAPAN PATENT LAW, *supra* note 27, art. 29. In jurisdictions like Japan that employ a first-to-file application priority system, prior art is determined as of the application's filing date.

⁵¹ See 35 U.S.C. §§ 101-103; JAPAN PATENT LAW, *supra* note 27, art. 29.

patent;⁵² when knowledge or use of the invention by persons other than the applicant occurs prior to the present application filing;⁵³ when description of the subject matter by a party other than the applicant appears in a printed publication;⁵⁴ when abandoned previous applications contain the same subject matter.⁵⁵

Non-obviousness, also known as the inventive step, is the final substantive patentability hurdle for both systems.⁵⁶ It requires that a person reasonably skilled within the discipline to which the subject matter pertains would not have found the subject matter obviously connected to the present state of technology in the discipline in question.⁵⁷

2. *Determining Application Priority*

a. United States' 'First-to-Invent' Provision

In contrast to most of the patent systems around the world, the United States employs the first-to-invent priority system to determine which applicant among a group of competing applicants is eligible to own the patent for the subject matter in question.⁵⁸ Under the American approach, the first inventor is considered the true inventor, and as such, is entitled to patent ownership despite a previously filed patent application for the same subject matter by a party other than the true inventor.⁵⁹

In order to defeat the priority of a previously filed application for the identical patentable subject matter, the true inventor must show an earlier 'date of invention' than the competing applicant.⁶⁰ The invention date is defined as the point in time when a inventor conceives of the patentable

⁵² See 36 U.S.C. §§ 101-103; JAPAN PATENT LAW, *supra* note 27, art. 29.

⁵³ See 36 U.S.C. §§ 101-103; JAPAN PATENT LAW, *supra* note 27, art. 29.

⁵⁴ See 36 U.S.C. §§ 101-103; JAPAN PATENT LAW, *supra* note 27, art. 29.

⁵⁵ See 36 U.S.C. §§ 101-103; JAPAN PATENT LAW, *supra* note 27, art. 29.

⁵⁶ See 35 U.S.C. §§ 103; JAPAN PATENT LAW, *supra* note 27, art. 29.

⁵⁷ *Dann v. Johnston*, 425 U.S. 219, 225-227 (1976). 'Reasonably skilled' means more than mere layperson, or person with ordinary skill within the discipline.

⁵⁸ See U.S. CONST., art. 1, § 8, cl. 8; *see also* 35 U.S.C. § 101. Both provisions describe inventors as the parties eligible to obtain patents. Japan's First-to-file System, described in detail below, is typical of the priority system employed by most countries.

⁵⁹ See 35 U.S.C. § 102(g).

⁶⁰ *Id.*

subject matter and then reduces it to practice⁶¹ either tangibly via actual 'working' of the invention, or constructively via a sufficiently detailed description of how the invention will work in the patent application.⁶² Thus, by offering proof of an earlier invention date, a true inventor can defeat the priority of a previously filed application of a competing non-inventor.

Additionally, a party can show true inventor status even when the earlier filing party has also reduced the patentable subject matter to practice prior in time.⁶³ Provided that the true inventor was the first to conceive of the patentable subject matter, his or her subsequent failure to reduce the invention to practice sooner in time than the other applicant does not defeat his or her application if he or she can show reasonable diligence in attempting to reduce the invention to practice from the point of conception.⁶⁴ Reasonable diligence entails relatively continuous efforts to reduce the patentable subject matter to practice.⁶⁵

b. Japan's 'First-to-File' Provision

In contrast to the American priority provision, the Japanese patent system awards the patent to the earliest filer among a group of patent applicants claiming the same subject matter, regardless of whether the first filer claimed an earlier date of invention.⁶⁶

The major difference between the priority systems is the filing incentives each provides. The first-to-invent system provides an incentive for inventors to research the commercial viability of an invention prior to initiating the

⁶¹ *Id.* Section 102(g) provides that "in determining priority of invention there shall be considered not only the respective dates of conception and reduction to practice, but also the reasonable diligence of one who was first to conceive and last to reduce to practice, from a time prior to conception by the other." *Id.*

⁶² See PATENT AND TRADEMARK OFFICE, U.S. DEP'T. OF COMMERCE, MANUAL OF PATENT EXAMINING PROCEDURE, ch. 715.07 (5th ed., 13th rev. Nov. 1989). This document describes 'constructive' reduction to practice as accomplished by the mere filing of an U.S. patent application.

⁶³ See 35 U.S.C. § 102(g).

⁶⁴ *Id.*

⁶⁵ See Epstein, *supra* note 34, at ch. 6, II, C.

⁶⁶ See JAPAN PATENT LAW, *supra* note 27, art. 39. "In the case there have been made two or more patent applications with regard to the same invention on different dates, only the earliest patent application may obtain a patent on such invention." *Id.*

application process in order to determine whether the potential profitability of the subject matter warrants the expense of patent protection.⁶⁷ Conversely, the first-to-file system provides an incentive for inventors to file applications early, and then proceed with profitability exploration, in order to avoid the risk of losing patent rights to an earlier filer.⁶⁸

Each patent system employs a priority determination system that is most beneficial to its typical native user. Since small firms are responsible for the bulk of innovative activity in the United States,⁶⁹ the first-to-invent system is tailored to their patent protection needs, while the first-to-file system of Japan is tailored to the needs of large firms.

Of course, a large firm will suffer no disadvantage from the incentives provided by the first-to-invent system, so long as it documents an invention date.⁷⁰ The dilemma facing small firms using the first-to-file system, however, requires choosing between allocating resources for filing quickly or profitability exploration.

Acquiring patent protection is an expensive venture. An applicant must employ a lawyer skilled in patent filing, and pay rather expensive filing fees. Additionally, since applications must be completed in the language native to the patent system, translation is an additional cost of filing a foreign application in either country.⁷¹ Consequently, a firm that researches the commercial viability of the subject matter prior to filing could lose valuable patent rights in Japan if a competitor is able to "pirate" the subject matter and file the first patent application for the subject matter in Japan. This is the first phenomenon described that facilitates the surplus technology transfer. On the other hand, if the firm chooses to file a patent application quickly to ensure being first, and subsequently learns that the subject matter is unmarketable, then the patent protection is acquired in vain.

The differing priority determination requirements generate conflicting incentives that have an adverse effect on small firms, as compared to large

⁶⁷ See Vito J. DeBari, *International Harmonization of Patent Law: A Proposed Solution to the United States' First-to-File Debate*, 16 FORDHAM INT'L L.J. 687, 702 (1993).

⁶⁸ See Ned L. Conley, *First-to-Invent: A Superior System for the United States*, 22 ST. MARY'S L.J. 779, 785-786 (1991).

⁶⁹ See *Effect Hearing*, *supra* note 21, at 46-47.

⁷⁰ See Conley, *supra* note 68, at 784-785.

⁷¹ See *Patent Protection in Japan II*, *supra* note 8, at 13. The GAO survey found that filing costs in Japan were the greatest in the world, mainly because of the cost of translation charged by Japanese patent attorneys. The average cost of filing in Japan was \$4,772, compared to only \$1,390 in the United States.

firms, and subsequently contribute to the United States' technology transfer surplus with Japan.

D. Comparison of Respective Procedural Requirements

1. Native Language Requirement

The JPO requires that an application for patent be filed in Japanese,⁷² while the PTO accepts applications in the applicant's native language, as long as an English translation is forwarded within two months of the original filing.⁷³

2. Stating a Claim

Both the PTO and JPO require that an application include a statement of specification in which the details of the subject matter and a claim to their inventiveness are provided.⁷⁴ The statement must be sufficiently detailed so as to enable other persons engaged in the discipline to which the subject matter pertains to make or use the subject matter themselves.⁷⁵ Finally, the language comprising the claim is used by courts to interpret the scope of the subsequently issued patent,⁷⁶ so the applicant's own words determine the breadth of protection received.

⁷² Helfand, *supra* note 18, at 128. *But see infra* note 188 and accompanying text.

⁷³ *Id.*

⁷⁴ See 35 U.S.C. § 111 ("[An] application shall include (1) a specification as prescribed by section 112 of this title; (2) a drawing as prescribed by section 113 of this title."); JAPAN PATENT LAW, *supra* note 27, art. 36-2 ("An application shall be accompanied by a specification setting forth the following matters and a necessary drawing or drawings: (1) Title of invention; (2) Brief explanation of drawing; (3) Detailed explanation of invention.").

⁷⁵ See 35 U.S.C. § 112. ("The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention."); JAPAN PATENT LAW, *supra* note 27, art. 36-3 ("The detailed explanation of the invention under subsection(2) shall state the purpose, constitution and effect of the invention in such a manner that it may easily be carried out by a person having ordinary skill in the art to which the invention pertains.").

⁷⁶ See 35 U.S.C. § 111; JAPAN PATENT LAW, *supra* note 27, art. 36-3.

3. *The Application Examination Process*

The manner in which patent applications are examined by the respective patent offices is drastically different in many respects. First, the average pendency period, the duration between the filing of an application and the resulting grant or denial, is nineteen months for applications examined at the PTO,⁷⁷ while 6-7 years at the JPO.⁷⁸

Many factors contribute to this difference in pendency periods. First, the JPO is understaffed in examiners in comparison to the PTO.⁷⁹ Next, applicants for Japanese patents must request an examination; examinations are not an automatic occurrence with a filing, as they are in the United States.⁸⁰ Finally, the combination of application publication and opposition procedures in Japan operate to extend the pendency period. These last two factors represent procedures that are almost diametrically opposed to PTO procedures, and will be discussed in greater detail below.

a. *PTO Secret Examination Procedure*

Title 35 requires that an inventor's patent application be held in confidence by the PTO during the examination process.⁸¹ Only applications for which patents are issued are ultimately published; those denied patent protection remain unpublished,⁸² and presumably secret, unless the applicant has publicized the subject matter. If not, the applicant can keep the unpatentable subject matter as a trade secret if it so desires.⁸³

⁷⁷ *U.S. Firms' Patent Problems in Japan Confirmed by GAO Survey*, Pat. Trademark, & Copyright L. Daily (BNA), at 2 (July 15, 1993).

⁷⁸ *Id.*

⁷⁹ *See Patent Protection In Japan II*, *supra* note 8, at 10 ("The ratio of patent applications filed to patent examiners is about four times higher in Japan than in the U.S.").

⁸⁰ *See JAPAN PATENT LAW*, *supra* note 27, art. 48. An application may lay unexamined for 7 years prior to being deemed abandoned.

⁸¹ 35 U.S.C. § 122. ("[A]pplications for patents shall be kept in confidence by the Patent and Trademark Office and no information concerning the same given without authority of the applicant or owner unless necessary to carry out the provisions of any Act of Congress or in such special circumstances as may be determined by the Commissioner.").

⁸² *Id.*

⁸³ *See Helfgott*, *supra* note 7, at 233.

b. JPO Application Publication Procedure

In direct contrast to the U.S. method of handling patent applications, all patent applications filed with the JPO are published 18 months after such filing in the Patent Gazette (Kokoku Koho).⁸⁴ The purpose of this procedure is to foster Japanese technological development by sharing the subject matter with all interested parties. In addition, the publication procedure is supposed to provide forewarning to competitors of the applicant's research and development accomplishments so that they may steer clear of such areas in their own research and development to avoid future infringement complications.⁸⁵

The practical effect of publication is that interested parties *i.e.* those who monitor the Patent Gazette may embark on development of the subject matter themselves without penalty, because at the time of publication no patent protections exist for the subject matter contained in the application.⁸⁶ Thus, no remedy for the use of the subject matter by a competitor is available to the applicant during the application's pendency period.

The immediate impact the combination of PTO confidentiality and JPO publication has on the technology transfer surplus is obvious: Japanese users of the PTO benefit from the secrecy of the application examination, while U.S. users of the JPO have the subject matter of their applications divulged publicly. Though Japanese users of the JPO also have their applications published, such publication occurs in Japanese. Therefore, U.S. firms desiring to monitor the Patent Gazette must spend additional sums for translations. Consequently, the publication of applications in Japan contributes to the technology transfer surplus when U.S. firms interact with the JPO, because Japanese firms have superior access to the information necessary to patent flood effectively.

Finally, application publication in Japan erases any ability to protect

⁸⁴ See JAPAN PATENT LAW, *supra* note 27, art. 51; John C. Lindgren and Craig J. Yudell, *Protecting American Intellectual Property in Japan*, 10 SANTA CLARA COMPUTER AND HIGH TECH. L. J. 1, 18 (1994). The Japanese terms for the Patent Gazette are Kokai and Kokoku. Kokai refers to the publication of filed applications, while Kokoku refers to the publication of pending applications just prior to patent issuance. Hence, applications for which patents issue are published twice.

⁸⁵ See Helfgott, *supra* note 7, at 235; see also Mark F. Wachter, *Patent Enforcement in Japan: An American Perspective for Success*, 19 A.I.P.L.A. Q.J. 59 (1991). The Japanese cultural abhorrence of confrontation also explains the desire to avoid litigation.

⁸⁶ See *Patent Protections in Japan II*, *supra* note 8, at 12.

unpatentable subject matter as trade secrets.⁸⁷ Conversely, PTO filers of unpatentable subject matter are protected because of the confidentiality enveloping the PTO examination process.⁸⁸ As a result, American firms filing with the JPO automatically forfeit the ability to treat unpatentable subject matter as a trade secret, while Japanese firms filing PTO applications do not. Of course, Japanese firms are likely to file patent applications resulting in publication, but since publication is in their native language American firms will incur enormous monitoring and translation expenses in order to gain access to the subject matter of their competitors' applications.

c. JPO Prior User Rights

Most first-to-file patent systems, like Japan's, also employ the equitable tool, 'prior user rights'.⁸⁹ Japan's prior user rights provision permit parties who have innocently begun development of claimed subject matter prior to a subsequently filed application claiming the same subject matter to continue development without penalty.⁹⁰ In this way a party who actually may have been the true inventor is permitted to continue to develop the patented subject matter.

Prior user rights are unnecessary in the United States because under the first-to-invent system, the first inventor is the only party eligible for patent rights anyway.⁹¹ No equitable rule is needed because the first-to-invent system provides no incentive to race to the patent office.

At first blush, the existence of prior user rights appears to be beneficial to American users of the Japanese patent system. However, in order to get under the umbrella provided by the prior user rights provision, the subject

⁸⁷ See JAPAN PATENT LAW, *supra* note 27, art. 65-2. Publication of the application necessarily erases the ability to keep unpatentable, yet still valuable, technology secret from competitors.

⁸⁸ 35 U.S.C. § 122.

⁸⁹ See Gary L. Griswold and F. Andrew Ubel, *Prior User Rights--A Necessary Part of a First-to-File System*, 26 J. MARSHALL L. REV. 567, 577 (1993).

⁹⁰ See JAPAN PATENT LAW, *supra* note 27, art. 79 ("Any person who, by making without knowledge of the contents of the invention under a patent application such invention by himself, . . . actually is engaged in the business of working of such invention or is preparing such business in Japan . . . shall have a non-exclusive license with respect to the patent right under such patent application within the scope of the invention and the purpose of business under such working or preparation.").

⁹¹ See 35 U.S.C. § 102(g).

matter in question must have been in use or prepared in Japan prior to the subsequent JPO application containing the subject matter in question filed by another party.⁹² Therefore, the existence of this provision is of little comfort to first-inventor American firms seeking Japanese patent protection, and has no significant impact on reducing the technology transfer surplus.

d. JPO Compulsory Licensing Provisions

Compulsory licensing provisions permit the JPO to require patentees to license their subject matter to other parties when the patentee has not actively developed the subject matter or when sharing is in the public interest.⁹³ Supposedly, these situations rarely occur,⁹⁴ yet the existence of these provisions provides a strong incentive to engage in voluntary licensing arrangements.

The only licensing requirements in the United States are found in environmental regulations, not Title 35, and cover public interest cases, such as patentable subject matter that improves air quality.⁹⁵

E. Comparison of Respective Patent Grant Contesting Mechanisms

1. PTO Interference Proceedings

An interference proceeding is necessary to determine which of two applicants who claim to be the first inventor of the same patentable subject matter was actually the earlier inventor.⁹⁶ The party who was first to file its application is labeled the 'senior' party, while the later filer is labeled the 'junior' party.⁹⁷ The junior party bears the burden of proving an earlier

⁹² See JAPAN PATENT LAW, *supra* note 27, art. 79.

⁹³ *Id.* at art. 83 and art. 93. There are two situations where the JPO can grant a third party a compulsory license over the patented subject matter. Article 83 permits interested parties to request a non-exclusive license with respect to patented subject matter that has gone undeveloped for at least three years, and Article 93 permits the Director-General of the JPO to grant a non-exclusive compulsory license when it is in the public interest.

⁹⁴ See Masaaki Kotabe, *A Comparative Study of U.S. and Japan Patent Systems*, 23 J. INT'L BUS. STUD. 147, 154 (1992).

⁹⁵ *Id.*

⁹⁶ See 35 U.S.C. § 135. Of course, the aim of this procedure is to identify the first inventor, in accordance with the 'first-to-invent' mandate of § 102(g).

⁹⁷ Epstein, *supra* note 34, at Ch. 6, II, C(1)(g).

invention date.⁹⁸ This entails, as previously described, establishing prior invention conception, and either prior reduction to practice or reasonable diligence in attempting to reduce the invention to practice.⁹⁹

This proceeding may be initiated by the PTO¹⁰⁰ or by a private party claiming to be the first inventor of subject matter contained in a previously issued patent.¹⁰¹ A PTO initiated proceeding is appropriate when two successive applications are filed for a particular invention before the earlier filer has been issued a patent.¹⁰² In comparison to other grant-contesting mechanisms, the interference is commonly referred to as a post-grant opposition procedure because it generally takes place after issuance of a patent.

2. JPO Pre-Grant Opposition Procedure

Japan uses a pre-grant opposition mechanism where contesting subject matter patentability occurs after application publication, but prior to patent issuance or application rejection. The JPO relies on this procedure to produce any relevant prior art that would preclude a patent grant since competitors would presumably oppose the issuance of a patent on such grounds.¹⁰³ Any private parties may submit oppositions, regardless of their particular connection to the subject matter.¹⁰⁴ Finally, each opposition must be answered individually by the applicant prior to any JPO decision on the application.¹⁰⁵ In theory, this procedure is designed to prevent future litigation by increasing the strength of the subsequently granted patent,¹⁰⁶ but its practical effect is to delay the issuance of patents.

The primary difference between the contesting mechanisms is that each nation employs the device for different purposes. The U.S. interference

⁹⁸ *Id.*

⁹⁹ See 35 U.S.C. § 102(g).

¹⁰⁰ 37 C.F.R. §§ 1.601-1.690. This is an administrative proceeding conducted by a judge in the PTO.

¹⁰¹ 35 U.S.C. § 291. If two patents are erroneously granted for the same subject matter, then the issue of first to invent is decided in a civil action in federal court.

¹⁰² *Id.*

¹⁰³ See JAPAN PATENT LAW, *supra* note 27, art. 57.

¹⁰⁴ *Id.*

¹⁰⁵ *Id.*

¹⁰⁶ Donald G. Daus, *Patentable Differences: Japan and the United States*, 17 INT'L REV. INDUS. PROP. & COPYRIGHT L. 463, 480 (1986).

procedure is used to determine the ownership of the subject matter, the inquiry inherent in first-to-invent jurisdictions, while in Japan the pre-grant opposition procedure is used to determine the patentability of the subject matter. The major criticism of the U.S. interference procedure is the uncertainty created in patent rights if the protections accompanying a patent grant are revocable.¹⁰⁷ Critics fear that industrial and technological development is stymied because wary patentees do not have sufficient incentive to unleash all available resources for the subject matter's development when the patent's exclusive rights are tenuous due to the potential for revocation.¹⁰⁸ An additional drawback associated with the interference procedure is costly, extended litigation.¹⁰⁹

On the other hand, critics of the Japanese pre-grant opposition provision maintain that abuse of the procedure unnecessarily extends the pendency period for patent grants.¹¹⁰ Delaying a competitor's patent grant permits the abusing party a greater amount of time to develop the subject matter of the opposed application for its own ends.¹¹¹ Of course, the Japanese procedure is also fraught with costly, extended litigation.¹¹² The actual difference between the competing opposition procedures is that one produces uncertainty and the other delay.

The delay experienced in the Japanese system contributes to the technology transfer surplus to a much greater extent than does the uncertainty of protection in the U.S. system for two reasons. First, as previously described, the pre-opposition procedures are frequently abused as part of a patent flooding scheme. Creating greater delay in a competitor's patent grant provides the abuser with a greater opportunity to appropriate the original

¹⁰⁷ See Paul A. Ragusa, *Eighteen Months to Publication: Should the United States Join Europe and Japan by Promptly Publishing Patent Applications?*, 26 G.W. J. OF INT'L L. & ECON. 143, 163 (1992). Ragusa argues that avoiding the possibility of secret prior art justifies the adoption of a publication of application policy in the United States.

¹⁰⁸ *Id.*

¹⁰⁹ See Helfand, *supra* note 18, at 154.

¹¹⁰ *Id.*

¹¹¹ *Id.*

¹¹² See *Patent Protections in Japan I*, *supra* note 1, at 16. The filing costs for foreign JPO applicants are the highest in the world due the enormous expense of translations and high fees charged by Japanese patent attorneys. "[T]he average cost of filing a 25-page patent application in Japan was \$4772, while in the U.S. it was \$1390." *Id.*; Spero, *supra* note 6, at 64. Spero, CEO of Fusion Systems, provides the starkest example of lengthy and costly patent litigation in Japan. Fusion spent the better part of fourteen years embroiled in a patent dispute with Mitsubishi over microwave technology developed by Fusion. *Id.*

subject matter and file its own applications on alterations and improvements of the subject matter.¹¹³ Secondly, since employing the pre-opposition procedures is costly in terms of legal fees, the typical small, less liquid American firm is less able to use the procedures offensively to stall a competitor's grant, and more likely to have its resources depleted in answering oppositions than the typical large Japanese conglomerate.¹¹⁴

F. Comparison of Respective Infringement Protections

1. U.S. Infringement Protections

In the United States, infringement protection is provided by both statutory and judicially created devices. Section 271(a) of the U.S.C. protects against literal infringement, *i.e.* producing, using, or selling the exact patented invention without authority of patentee.¹¹⁵ This protection is relatively narrow since the accused infringer's subject matter must be virtually identical to the plaintiff patentee's for the accused infringer to be liable.¹¹⁶

The limited scope of section 271 induced the courts to develop the doctrine of equivalents¹¹⁷ to prevent competitors of the patentee from usurping the spirit of the original patented subject matter through inconsequential alterations or improvements.¹¹⁸ To prevail under this doctrine, the patentee must show that the allegedly infringing subject matter performs substantially the same function, in substantially the same way, to achieve substantially the same result as the patented subject matter.¹¹⁹ In practice, judges are more likely to invoke the doctrine's broad protective power if the patented subject matter in question represents a pioneering advancement over the prior art within the discipline, while they are less likely to invoke the

¹¹³ See Spero, *supra* note 6, at 64.

¹¹⁴ See *Effect Hearing*, *supra* note 21, at 46-47.

¹¹⁵ 35 U.S.C. § 271. "[W]hoever without authority makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent." *Id.*

¹¹⁶ See Epstein, *supra* note 34, at Ch. 6, IV, C.

¹¹⁷ *Id.* Courts generally employ a two-step test for analyzing patent infringement claims. First, the court will seek evidence of literal infringement, as proscribed under section 271. If this inquiry is fruitless, then the court may broaden the scope of the patent beyond its literal dimensions by employing the doctrine of equivalents.

¹¹⁸ *Id.*

¹¹⁹ See *Graver Tank & Mfg. Co. v. Linde Air Prods. Co.*, 339 U.S. 605, 608 (1950).

doctrine if the patented subject matter in question represents only a minor step up in an already crowded field.¹²⁰

2. Japanese Infringement Protections

Two practices of the Japanese courts reduce the ability of a patentee to protect his technology with an infringement action. First, the Japanese courts do not recognize the doctrine of equivalents when interpreting the scope of patents.¹²¹ Instead, an ultra-literal approach is employed, whereby the courts interpret the patent breadth to include no more than what was included by the patentee in the text of the application.¹²²

Next, as a matter of practice, Japanese courts are extremely reluctant to grant of injunctive relief.¹²³ As a result, U.S. firms are essentially denied any legal avenues to prevent a Japanese infringer's development of its subject matter—their rights are practically unenforceable.

The different manners in which each system adjudicates infringement claims derives from the different means each system employs to reach the end of encouraging scientific advancement. The means selected by the JPO provide strong incentives for patent flooding, the catalyst for the technology transfer surplus.

V. THE PRACTICE OF PATENT FLOODING

Patent flooding, the filing abuse prevalent in the Japanese system, is facilitated and encouraged by the following attributes of the Japanese patent system: the publication of patent applications, the pre-grant opposition

¹²⁰ See Epstein, *supra* note 34, at Ch. 6, IV, C.

¹²¹ See JAPAN PATENT LAW, *supra* note 27, art. 70. "The technical scope of a patented invention shall be fixed on the basis of the statement in the claim for patent contained in the specification attached to the application." *Id.*

¹²² Joseph F. Dunphy, *Japan's Patent System Comes Under Fire*, CHEM. WK., June 27, 1988, at 26-27. This article relates the infamous American Cyanamid patent struggle, where American Cyanamid procured a patent for a process using a definitive temperature range starting at 20 C. A competitor employed the same process at a temperature of 17.5 C. The Japanese courts operating under their literal claim interpretation scheme refused to view the competitor's process as an infringement of American Cyanamid's process.

¹²³ See *Patent Protections in Japan III. Enforcing Patents in Japan, Moves Toward International Patent Harmonization*, 15 EAST ASIAN EXECUTIVE REPORTS, Dec. 15, 1993 at 9, 13. [hereinafter *Patent Protections in Japan III*].

procedures, the long pendency period, and the narrow claim interpretations by Japanese courts.¹²⁴ Patent flooding occurs when the competitors of a patent applicant flood the patent office with patent applications containing minor alterations and improvements upon the subject matter comprising the first applicant's application.¹²⁵

The previously described attributes of the Japanese system provide patent flooding incentives in the following manner. First, the publication of applications permits competitors the access and opportunity to appropriate the subject matter of the application.¹²⁶ By employing the opposition procedures, a patent flooder can stall the granting of a patent on the original material, thus prolonging its ability to use the original subject matter without penalty.¹²⁷ Finally, the limited likelihood of incurring liability as an infringer in the Japanese courts provides additional incentive to patent flood.¹²⁸

Patent flooding appeals to Japanese firms because it results in both offensive and defensive commercial advantages. As described above, most original basic patentable subject matter is not very profitable by itself; instead profitability results from spin-off development of consumer goods, the profit generators.¹²⁹ When Japanese firms patent flood for the purpose of appropriating a portion of the profitability of the original basic subject matter, they are patent flooding for offensive commercial purposes. Similarly, when Japanese firms patent flood for the purpose of preventing subject matter's owner from realizing the profit potential of its subject matter, they are patent flooding for defensive commercial purposes.¹³⁰

Of course, either defending against or engaging in patent flooding requires enormous financial resources. Unfortunately for the typical cash-strapped American user of the JPO, defending against patent flooding is not as practicable as it is for the larger Japanese firms with greater financial

¹²⁴ See Helfand, *supra* note 18, at 149.

¹²⁵ *Id.* at 158.

¹²⁶ *Id.* at 149.

¹²⁷ *Id.* at 155.

¹²⁸ *Id.* at 156-57.

¹²⁹ See Powers & Leal, *supra* note 3, at 2.

¹³⁰ See *Patent Protections in Japan II*, *supra* note 8, at 12. This article describes one aspect of patent flooding as "holding another inventor's basic patent 'hostage'." *Id.*

resources.¹³¹ Monitoring the Patent Gazette entails additional staffing and translation costs, which add to the conflicting incentives that arise originally from the priority requirements. If the study of published patent applications does yield evidence of patent flooding, the offended patentee must employ the JPO's costly opposition procedures to stem the abuse.¹³² The high costs associated with effective use of the JPO generate the incentive to develop the subject matter more fully prior to application filing, contrary to the incentive to file early generated by the first-to-file priority requirement.

Of course, patent flooding may be practiced by U.S. firms in Japan. However, the monitoring resources required to defend against patent flooding are also necessary for a campaign of patent flooding.¹³³

Through patent flooding, Japanese firms are also able to induce licensing agreements with their American counterparts, the related contributing phenomenon to the technology transfer surplus.¹³⁴ Patent flooders have negotiating power because they control the development rights to a portion of the marketability of the original subject matter.¹³⁵ Thus, these parties can force the owner of the pioneer subject matter to forgo exclusivity over the original subject matter in exchange for the patent flooder's relinquishment of exclusivity over the marketable patented improvements. This practice is encouraged in Japan because it is a direct implementation of the sharing policy that is designed to stimulate the rate of technological development.¹³⁶

Cross-licensing between Japanese firms is a frequent occurrence, where both parties generally maintain similar bargaining positions.¹³⁷ However, the difference in size between U.S. firms and their Japanese counterparts

¹³¹ See Spero, *supra* note 6, at 58. The notorious Fusion Technology experience relayed by Spero shows the pitfalls of patent flooding for small firms using the JPO. Fusion, a small hi-tech firm, was the leader in the 1970's in ultraviolet lamp technology generated by microwave energy. After patenting this technology in Japan, Fusion was patent flooded by Mitsubishi, a company 10 times Fusion's size. *Id.* at 60-62.

¹³² *Id.* at 64.

¹³³ See *Patent Protections in Japan II*, *supra* note 8, at 13 ("[M]ost U.S. firms would not engage in patent flooding in Japan because . . . they feel the cost of monitoring competitors' filings and submitting large numbers of applications would be prohibitive due to the need for translation.").

¹³⁴ *Id.* at 12; see Helfand, *supra* note 18, at 158.

¹³⁵ See Helfand, *supra* note 18, at 149.

¹³⁶ *Id.* at 135.

¹³⁷ *Id.* at 162.

yields an imbalance in bargaining power in favor of the larger Japanese firms such that they attempt to coerce favorable licensing agreements which negatively impact the smaller U.S. firm.¹³⁸ The royalties paid to U.S. pioneer firms under such agreements generally represent only a fraction of the income ultimately generated by the patentable subject matter that is transferred.¹³⁹ By the same token, coercive licensing provides Japanese firms with access to pioneer subject matter at cheaper cost than developing it themselves.¹⁴⁰

Also, once both an American firm and a Japanese firm have access to marketing the same subject matter, the Japanese company will inevitably win the greater market share of the Japanese market.¹⁴¹ Finally, the Japanese firm will fair well in U.S. markets in large part due to its size—large firms generally have more highly developed distribution systems, and are able to cut per unit costs with larger production volumes.

VI. REMEDIAL PROPOSALS FOR REDUCING THE TECHNOLOGY TRANSFER SURPLUS

The primary options for stemming the flow of technology from the U.S. to Japan entail (1) augmenting individual behavior of U.S. applicants for JPO patent protections, and (2) encouraging legislative efforts, either bipartisan or unilateral actions, to change the attributes of the respective patent systems. The various options will be evaluated in light of the degree to which they may be successful.

¹³⁸ See Spero, *supra* note 6, at 64. Mitsubishi's demands on Fusion Systems in their patent feud over microwave lamp technology is illustrative of how large Japanese conglomerates operate in licensing negotiations with smaller U.S. firms. Mitsubishi suggested that Fusion pay a royalty fee for access to Mitsubishi's patents obtained through their patent flooding of Fusion's technology in exchange for Mitsubishi's royalty-free access to Fusion's basic patents. As Spero put it, "Mitsubishi was offering us the opportunity to buy back what had been taken from us in exchange for our core technology." *Id.*; see Yates, *supra* note 1, at B3. Motorola Corp. has experienced the same types of licensing tactics as Fusion Systems. Vincent J. Rauner of Motorola said, "[w]e have patent licenses with some Japanese companies, not because we transferred technology to them, but because they got it and we had to go and make them pay for it with license agreements." *Id.*

¹³⁹ See Yates, *supra* note 1. Yates cites Erich Bloch, a fellow of the Council on Competitiveness, who states, "[i]n the 1950s, '60s and '70s we gave too much away by selling technology and licensing things for peanuts We need to drive harder bargains for our technology and get a quid pro quo." *Id.*

¹⁴⁰ *Id.*

¹⁴¹ See Spero, *supra* note 6, at 64.

A. *Self-Help Remedial Proposals for American Firms*

Many commentators, especially those who hold that the technology transfer surplus is the result of Japanese business' expert manipulation the JPO,¹⁴² argue that U.S. firms must likewise become adept in manipulating the JPO in order to minimize the loss of technology to Japan.¹⁴³ Thus, the following suggests affirmative actions that American firms can undertake to reduce the loss of patentable subject matter.

1. *Improving Translations of Patent Applications*

Primarily, this suggestion entails devoting greater resources and attention to translating patent applications into Japanese since the JPO requires its applications to be filed in Japanese.¹⁴⁴ The actual text of an application filed with the JPO determines the breadth of protection subsequently provided by the corresponding patent.¹⁴⁵ Confusion created by an inaccurately translated application will be resolved against the submitting party, thus the protection sought will be less than actually received.¹⁴⁶ Less protection leads to more patent flooding of the vulnerable subject matter.¹⁴⁷

Many U.S. firms often arrange to translate applications only a week or two prior to the deadline after which their subject matter becomes unpatentable prior art.¹⁴⁸ This hastiness is a primary source of the inaccuracies that plague U.S. firms' JPO applications.¹⁴⁹ Thus, merely affording extra time for the translation of an application into Japanese is the easiest measure for curing translation ills.

An additional practice that alleviates translation inaccuracies of U.S. firms' JPO applications is double translating.¹⁵⁰ By retranslating JPO applications originally translated into Japanese back into English, American JPO applicants can gauge the sufficiency of the Japanese language version of

¹⁴² See *supra* section III(B).

¹⁴³ See Helfand, *supra* note 18, at 141; *Patent Protections in Japan II*, *supra* note 8, at 16.

¹⁴⁴ *Id.*; see Spero, *supra* note 6, at 65.

¹⁴⁵ See Spero, *supra* note 6, at 65.

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

¹⁴⁸ *Id.*

¹⁴⁹ *Id.*; see *Patent Protections in Japan II*, *supra* note 8, at 19.

¹⁵⁰ See *Patent Protections in Japan II*, *supra* note 8, at 19.

their applications.¹⁵¹ Many American firms resorting to this tactic are touting it as helpful in increasing the quality of their JPO applications.¹⁵²

Additional practices for improving JPO application accuracy include supplementing the Japanese text of the JPO application with parenthetical English terminology and as many diagrams and drawings as possible.¹⁵³ These measures will aid the applicant in conveying its patent claims by creating a more concrete point of reference, thereby by limiting the potential for confusion in interpreting the patent's breadth.¹⁵⁴

2. Partnerships Between U.S. and Japanese Firms for the Purpose of Filing JPO Applications

By arranging for a Japanese counterpart firm to file its applications under the guise of the Japanese partner as the inventor, U.S. firms seek to minimize the pendency period for its applications.¹⁵⁵ This suggestion is premised on the notion that the JPO is inherently discriminatory against foreign applicants.¹⁵⁶ American firms engaging in this practice reported shorter pendency periods.¹⁵⁷

The success of this measure is tempered, however, because typically part of the bargain with the Japanese partner entails permitting some type of licensing of the subject matter to be patented.¹⁵⁸ Therefore, the partnership results in the loss of some of the marketability of the original subject matter to the Japanese partner.¹⁵⁹ As previously mentioned, such licensing is a phenomenon that contributes to the technology transfer surplus, thus the desirability of such an arrangement is diminished by the loss of the exclusive development right to the subject matter in question.

¹⁵¹ *Id.*

¹⁵² *Id.* at 14. "28 percent [of U.S. firms surveyed] said that . . . their company had the claims portion of their application translated back into English back 'always' or 'most' of the time." *Id.*

¹⁵³ *Id.*

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ See *supra* section III-A, the discrimination theory explaining the existence of the technology transfer surplus.

¹⁵⁷ *Id.* This GAO survey result, though, tends to validate the JPO discrimination theory discussed *supra* section III-A.

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

3. Seeking Direct Representation from Japanese Patent Attorneys for JPO Applications

Since Japanese patent law permits only Japanese domiciliaries to become patent representatives to the JPO, U.S.-based patent attorneys are ineligible to file applications with the JPO.¹⁶⁰ Instead of hiring Japanese patent representatives (Benrishi/Bengoshi)¹⁶¹ directly, many firms rely on their U.S. patent attorneys to select Benrishi to perform the filing tasks of JPO applications.¹⁶² By dealing directly with Benrishi, U.S. firms at best reduce only the general transmission difficulties associated with communication through a middleman, the American patent attorney.

For this practice to be beneficial, U.S. firms must realize that the role of the Benrishi in representing patent claimants to the JPO is significantly less active than that of an American patent attorney representing patent claimants to the PTO.¹⁶³ The aid provided by the Benrishi typically only amounts to translation and actual filing of the application, unless the U.S. firm specifically requests the performance additional tasks.¹⁶⁴ Moreover, Japan's social structure discourages Benrishi from challenging the judgment of the well-respected JPO civil servant.¹⁶⁵ Therefore, a U.S. firm's direct employment of a Benrishi does not result in the advocacy of its position in the zealous manner typical in the United States.¹⁶⁶

Another alternative, maintaining a patent office in Japan, is too cost-prohibitive for most U.S. firms that use the Japanese system.¹⁶⁷ Of firms

¹⁶⁰ *Id.*; see Kotabe, *supra* note 94, at 153. This practice is reciprocated by the PTO, which bars Japanese domiciliaries from filing applications with the PTO.

¹⁶¹ See Lindgren and Yudell, *supra* note 84, at 20. Bengoshi are Japanese attorneys, while Benrishi are not attorneys per se, but JPO agents. Both are eligible to practice before the JPO, unlike in the United States, where only attorneys that have passed the Patent Bar Examination may practice before the PTO.

¹⁶² See *Patent Protections in Japan II*, *supra* note 8, at 17.

¹⁶³ *Id.* Aside from the language barrier between U.S. firms and their Benrishi representatives, the fixed fee schedule under which the Benrishi operate may contribute to their lack of proactive representation.

¹⁶⁴ *Id.*

¹⁶⁵ *Id.* "[A] civil servant such as a JPO examiner holds an esteemed position in society. Accordingly, Benrishi will tend to defer to, and not challenge or aggressively press, the examiner." *Id.*

¹⁶⁶ *Id.*

¹⁶⁷ *Id.* Nine percent of respondents to the GAO survey maintained a Japanese patent office. The firms generally had sales of over \$1 billion in 1991.

sufficiently solvent to maintain a Japanese patent office, a significant majority reported improved experiences with the JPO.¹⁶⁸ However, as noted earlier, most U.S. firms seeking patent protections are small in size, and have limited financial resources. Additional expenditures for patent filing would be better spent in perfecting the translation of applications.

B. POTENTIAL BILATERAL LEGISLATIVE REMEDIES

These measures, as the heading suggests, would require an exchange of legislative amendments to each country's patent code.

1. Bilateral Elimination of Patent Bar Eligibility Restrictions

Adoption of this proposal would permit American attorneys to represent inventors dealing with the JPO, and Japanese attorneys to represent inventors dealing with the PTO. If American attorneys were permitted to interact with the JPO directly on behalf of U.S. inventors, U.S. inventors would reap the following benefits, all of which should contribute to reducing the technology transfer surplus.

First, U.S. firms' concerns regarding the quality of representation traditionally provided by Benrishi would be alleviated. As previously noted, Benrishi do not actively advise clients in interactions with the JPO, and do not advocate their clients' interests as zealously as American attorneys. As a result, U.S. firms feel their interests are not represented effectively by Benrishi.¹⁶⁹ Presumably, U.S. attorneys would provide the interactive representation to which U.S. firms are accustomed. Such representation includes active advisement and zealous advocacy, which should increase U.S. firms' ability to gain broader protections for their patentable subject matter.

In addition, potential communication difficulties arising from the language barrier would be alleviated with the adoption of this proposal. U.S.-based attorneys for U.S. firms would be able to communicate directly with English speaking attorneys licensed to practice with the JPO. Also, American attorneys practicing in Japan would have a greater opportunity to shepherd translations of U.S. firms' patent applications, thus reducing inaccurate translations, a cause of lower than expected JPO protections.

Finally, such a provision would create an additional job market for

¹⁶⁸ *Id.*

¹⁶⁹ *Id.*

American attorneys in Japan. While this would not impact the technology transfer surplus directly, creating a new market for U.S. attorney services seems to be a beneficial byproduct of this proposal. Of course, Japanese attorneys would be free to usurp patent representation jobs formerly held by U.S. attorneys who handled Japanese firms' patent needs in dealing with the PTO, but it is well known that the United States produces a larger number of attorneys than Japan.¹⁷⁰

2. The Effects of Patent Harmonization Treaty Efforts on the Reduction of Technology Transfer Surplus

"Patent Harmonization" refers to efforts of the World Intellectual Property Organization (WIPO)¹⁷¹ to produce an accord among all countries to amend their respective patent codes so that a uniform body of patent law would emerge in order to promote "the efficient protection of intellectual property throughout the world."¹⁷² Additionally, the uniformity of patent laws would ideally operate to "optimize the pace of technological development worldwide."¹⁷³ This ideological aim is analogous to the aims of both the American and Japanese patent systems. The result of WIPO's work is embodied in the Patent Harmonization Treaty (PHT).¹⁷⁴

The PHT basically calls for signatory nations to amend their current patent codes to include the following law provisions: (1) a first-to-file priority system,¹⁷⁵ (2) a one year grace period for filing foreign applications,¹⁷⁶

¹⁷⁰ See *Patent Protections in Japan III*, *supra* note 123, at 14. Japan has 15,000 native attorneys, compared to 700,000 native attorneys for the United States.

¹⁷¹ See The Convention Establishing the World Intellectual Property Organization, July 14, 1967, 21 U.S.T. 1749, 828 U.N.T.S. 3, *reprinted in* M.A. Leaffer, *International Treaties on Intellectual Property*, at 566 (1990). WIPO was created for the purpose of pursuing international patent law harmonization.

¹⁷² Leaffer, *supra* note 171, at 567 (quoting Articles 3 and 4).

¹⁷³ See R. Carl Moy, *Patent Harmonization Protectionism, and Legislation*, 74 J. PAT. & TRADEMARK OFF. SOC'Y 777, 782 (1992).

¹⁷⁴ Draft Treaty Supplementing the Paris Convention for the Protection of Industrial Property as Far as Patents are Concerned, WIPO, Doc. PLT/DC/3 (Dec. 21, 1990), *reprinted in* Records of the Diplomatic Conference for the Conclusion of a Treaty Supplementing the Paris Convention as Far as Patents are Concerned, WIPO, Diplomatic Conference, pt. 1, at 11-53 (1991).

¹⁷⁵ *Id.* art. 9(2).

¹⁷⁶ *Id.* art. 12.

(3) publication of patent applications eighteen months after filing,¹⁷⁷ (4) application examination within three years of filing,¹⁷⁸ (5) a patent term of twenty years running from the filing date of the application,¹⁷⁹ (6) prior user rights,¹⁸⁰ (7) post-grant opposition mechanisms,¹⁸¹ (8) a doctrine of equivalents,¹⁸² and (9) remedies including injunctive relief and damages.¹⁸³

In order for the United States to comply with this list of provisions, Congress would have to promulgate numerous amendments to Title 35.¹⁸⁴ As of January 1994, however, this point was made moot by Commerce Secretary Ron Brown's announcement that the United States was ceasing its involvement with the PHT negotiations, and therefore would not seek the proposed amendments.¹⁸⁵

3. *United States-Japan Patent Harmonization Negotiations*

However, prior to Secretary Brown's announcement, representatives for both the JPO and PTO began negotiating patent harmonization measures between themselves, including the basic PHT proposals.¹⁸⁶ To date, these negotiations have resulted in the following agreements.

On January 20, 1994, PTO Commissioner, Bruce Lehman, formalized an agreement with Japan that required Congress to consider legislation calling for the establishment of a twenty year patent term to commence from the

¹⁷⁷ *Id.* art. 15.

¹⁷⁸ *Id.* art. 16(2).

¹⁷⁹ *Id.* art. 22(2)(a).

¹⁸⁰ *Id.* art. 20(1). Prior user rights are optional under Alternative A of PHT, while mandatory under Alternative B.

¹⁸¹ *Id.* art. 18(1).

¹⁸² *Id.* art. 21(2).

¹⁸³ *Id.* art. 23(1).

¹⁸⁴ See generally, Richard C. Wilder, *An Overview of Changes to the Patent Law of the United States After the Patent Law Treaty*, 26 J. MARSHALL L. REV. 497 (1993). Wilder provides an in depth summary of the changes in U.S. patent law that would be necessary to achieve compliance with the PHT.

¹⁸⁵ *Patents: U.S. Says 'Not Now' on First-to-File, Agrees with Japan on Patent Term*, Pat. Trademark & Copyright L. Daily (BNA), at d2 (Jan. 27, 1994).

¹⁸⁶ *Id.*

application filing date, identical to the Japanese patent term.¹⁸⁷ The agreement also requires the Japanese to introduce legislation that would require the JPO to accept English language patent applications when followed by Japanese translations within two months of the initial filing, which would harmonize with the corresponding U.S. provision.¹⁸⁸

Then, on August 16, 1994, the same parties concluded another harmonization agreement.¹⁸⁹ The United States must consider the adoption of an application publication measure, as well as measures expanding third party participation in the interference proceeding.¹⁹⁰ The concessions exacted from the JPO include consideration of a post-grant opposition procedure to replace the current pre-grant opposition procedure, consolidation of multiple oppositions into a single proceeding, and accelerated examination procedures that require application examinations to occur within 36 months of filing.¹⁹¹

The remaining differences between the Japanese and U.S. patent systems, assuming promulgation of the measures agreed upon by the JPO and PTO, would be the priority determination systems and infringement protection mechanisms.

4. Analysis of PTO Concessions Resulting from U.S.-Japan Patent Harmonization Negotiations and Their Effect on the Technology Transfer Surplus

To summarize the agreements reached between the United States and Japan on patent harmonization, the PTO agreed to introduce legislation calling for the following changes in U.S. patent law:

- (1) Change the length of the patent term from seventeen to twenty years from the date of application filing¹⁹²

¹⁸⁷ *Legislation: 20-Year Patent Term Bill is Introduced For Administration*, 48 PAT. TRADEMARK & COPYRIGHT J. (BNA) 121 (1994). The agreement reached between the PTO and JPO has resulted in repeated legislative efforts to amend Title 35 to conform to the agreement, including bills in both houses of Congress (H.R. 359 and S.B. 284).

¹⁸⁸ *Id.*

¹⁸⁹ *Treaties: U.S.-Japan Conclude Agreement on Reexamination and Publication*, 48 Pat. Trademark & Copyright J. (BNA) 412 (1994).

¹⁹⁰ *Id.*

¹⁹¹ *Id.*

¹⁹² *Id.*

- (2) Publish patent applications eighteen months after filing¹⁹³
- (3) Expand opportunities for third parties to intervene in application reexaminations.¹⁹⁴

The JPO agreed to introduce legislation calling for the following changes in Japan patent law:

- (1) Accept English language applications when followed by Japanese translations within two months of original filing¹⁹⁵
- (2) Permit only post-grant patent oppositions¹⁹⁶
- (3) Consolidation of multiple oppositions into a single proceeding¹⁹⁷
- (4) Application examinations within thirty-six months of filing.¹⁹⁸

Changing the length of the U.S. patent term will not significantly impact the technology transfer surplus. The difference between a patent term running 17 years from the date of issuance and 20 years from the date of filing is merely cosmetic. Under the current setup, considering that the average pendency period is nineteen months, the typical patent term expires almost nineteen years from the filing date.¹⁹⁹

Likewise, permitting third parties greater access to interference proceedings will have little substantive effect on the technology transfer surplus. So long as the opposition procedure continues to be held after patent issuance, the present protections available with a PTO patent will remain substantially the same.

However, critics voice major concerns regarding the adoption of a patent application publication provision and its impact on the technology transfer surplus. First, publication will likely provide incentives for patent flooding

¹⁹³ *Id.*

¹⁹⁴ *Id.*

¹⁹⁵ *Id.*

¹⁹⁶ *Id.*

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ See *Patent Protections in Japan II*, *supra* note 8, at 20.

the PTO.²⁰⁰ Next, publication will likely eliminate the ability of owners of unpatentable subject matter to protect the subject matter as trade secrets.²⁰¹ Finally, publishing applications will likely instigate a domestic technology transfer from small U.S. firms to large U.S. firms.²⁰² The argument is that such consequences may reduce the level of protection provided by PTO patents to an unacceptable degree—a level that would fan the flames of the technology transfer surplus instead of dousing them. While formidable, each of these criticisms is rebuttable by equally formidable counter arguments.

a. Why PTO Application Publication Eighteen Months after Filing Will Not Provide Incentives for Patent Flooding

The obvious implication is that patent flooding will become a frequent occurrence in the U.S. patent system if patent applications are published. However, several attributes of the American system will likely prevent patent flooding from becoming a commonplace practice.

First, since the average application pendency period is nineteen to twenty months, the application will generally be published and unprotected only a couple of months prior to issuance (recall that publication would not occur until eighteen months after filing) if it contains patentable subject matter.²⁰³ Japan's pendency period, six to seven years, leaves subject matter publicly divulged and unprotected for at least five years prior to patent issuance.²⁰⁴ Japan's pre-opposition grant mechanism contributes significantly to the average JPO pendency period.²⁰⁵ This is not a problem for PTO applicants because the existing post-grant opposition procedure would still be in force. In a practical sense, most competitors of the PTO patentee would be unable to improve upon the patentable subject matter within the short pendency period.

Moreover, the existence of the doctrine of equivalents in the American

²⁰⁰ See *Effects Hearing*, *supra* note 21, at 47.

²⁰¹ See Earl W. Kintner & Jack Lahr, *AN INTELLECTUAL PROPERTY LAW PRIMER* 7 (2d ed. 1982). The primary requirement for attaining trade secret status is that the subject matter actually remain a secret. Once the subject matter is divulged, the remedies available under trade secret law cease.

²⁰² See Ragusa, *supra* note 107, at 172.

²⁰³ See *supra* note 190 and accompanying text.

²⁰⁴ See *Patent Protections in Japan II*, *supra* note 8, at 8.

²⁰⁵ See *supra* notes 110-111 and accompanying text.

system of infringement protections provides a great disincentive to the practice of patent flooding.²⁰⁶ An even greater disincentive is supplied by the array of remedial measures, particularly injunctive relief, available to victims of patent infringement.²⁰⁷ Thus, unlike the Japanese system, a firm entertaining the notion of engaging in patent flooding the PTO would face grave risks of judicial reprisal.

b. Why PTO Application Publication Will Not Reduce the Ability of Holders of Unpatentable Subject Matter to Maintain the Subject Matter as Trade Secrets

Though the notion of PTO patent issuance as contractual in nature²⁰⁸ will be altered by publishing applications prior to a grant or denial of patent protection, publication will not significantly affect trade secret status for unpatentable subject matter. The contractual theory will no longer be tenable because the patent applicant will not receive the benefit of his or her bargain in the event of application rejection. Under the current setup, an applicant trades public disclosure of the subject matter for a limited monopoly over the subject matter. On the other hand, if an application is denied, the applicant receives nothing and trades nothing because his/her application is never published; the applicant will at least have solace in retaining the subject matter of the rejected application as a trade secret. However, if all applications are published, regardless of whether their subject matter warrants a patent, the applicant will yield the ability to rely on trade secret law for protection of the published subject matter. This leads to the concern that application publication could foster a disincentive for developers of marginal or questionable patentable subject matter to seek patent protection for fear of losing trade secret protection over the subject matter.²⁰⁹ This disincentive would be intolerable because it would operate against the primary aim of the patent system, encouraging technological innovation.

However, this argument is countered by the fact that the primary reason subject matter is deemed unpatentable is because it is not novel or unobvious: it is already known or easily could be known by the practitioners in its discipline, therefore the unpatentable subject matter could not possibly have

²⁰⁶ See *supra* notes 121-123 and accompanying text.

²⁰⁷ *Id.*

²⁰⁸ See *supra* section III-A.

²⁰⁹ See Ragusa, *supra* note 107, at 171.

been a trade secret of the applicant.²¹⁰ Furthermore, since most other patent systems in the world publish applications, any applicant who attempts to patent outside the United States forgoes the opportunity to protect the subject matter of the application as a trade secret against only foreign or domestic competitors that bother to monitor the publications of other countries' patent applications.²¹¹ Finally, the prevalence of numerous additional methods of appropriating trade secrets, reverse engineering for example, make confidential patent applications of little practical value as a means of preventing trade secret loss.²¹²

c. Why PTO Application Publication Will Not Cause a Domestic Technology Transfer Surplus from Small Firms to Large Firms

The fear of a domestic technology transfer surplus is based on U.S. firms' patent flooding experiences at the hands of the Japanese patent system.²¹³ Presumably, large U.S. firms with great resources would be able to take advantage of application publication of smaller firms by channelling development resources into disclosed subject matter more quickly than smaller competitors, thereby usurping the marketability of the original subject matter from smaller firms.²¹⁴

However, the same rebuttal offered for the argument that publication will induce Japanese patent flooding in the United States is likewise appropriate for the fear that American firms will patent flood. The existence of the doctrine of equivalents, and the availability of injunctive remedies for infringement will provide an enormous disincentive to patent flooding. Also, shorter pendency periods limit the time for which patentable subject matter will be unprotected, which limits the practical opportunities of competitors to patent flood.

d. Why PTO Application Publication Will Not Reduce the Technology Transfer Surplus—and Why It Will

Most supporters of the publication proposal contend that publication will

²¹⁰ *Id.* at 175.

²¹¹ *Id.* at 172.

²¹² *Id.*

²¹³ *Id.* at 173.

²¹⁴ *Id.* at 172.

stimulate the overall rate of technological development, the primary aim of the patent system.²¹⁵ Publication serves to disseminate the subject matter of pioneer technologies at a quicker pace than the current disclosure mechanism of publication of patent grants.²¹⁶ The faster the subject matter is disseminated, the faster the subject matter may be developed, which means profits can be generated more quickly.

However, publishing applications would result in the application's subject matter being divulged only a few months prior to the publication of the average patent, so the rate at which dissemination would be increased is fairly negligible. At most, application publication would stimulate the development of unpatentable subject matter since without publication this subject matter would be not be disseminated at all.

According to supporters of the publication proposal, publishing applications would also remedy the problem of "submarine patents" or "secret prior art".²¹⁷ Secret prior art occurs when subject matter of a pending PTO application operates as a novelty bar to subsequent applications for similar subject matter.²¹⁸ Since the earlier filed application (assuming the earlier filer is also the first inventor) is examined confidentially, the subsequent applicant does not have notice of the contents of the earlier filed application, which becomes prior art on its filing date.²¹⁹ The subsequent applicant could have devoted enormous resources to the development of the subject matter only to lose the patent rights to the prior applicant.²²⁰ The only recourse for the subsequent applicant would be to establish first inventor status. Presumably, publishing patent applications would provide notice to other entities in the discipline that the subject matter was already claimed in a previously filed application.²²¹

However, only when the pendency period for the earlier filed application exceeds the point at which the earlier filed application would be published, eighteen months, would publishing cure the secret prior art problem. For example, secret prior art would affect only the later of two applicants filing

²¹⁵ *Id.* at 174.

²¹⁶ *Id.*

²¹⁷ *Id.* at 164.

²¹⁸ See 35 U.S.C. § 102(e) ("A person shall be entitled to a patent unless--(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent. . . .").

²¹⁹ See Epstein, *supra* note 34, at Ch. 6, II, C.

²²⁰ See Ragusa, *supra* note 107, at 165.

²²¹ *Id.*

within eighteen months of one another. Moreover, even if application publication would provide some relief for the secret prior art problem, it still would have no significant effect on reducing the technology trade surplus.

From the foregoing analysis, it is apparent that publication of PTO patent applications alone will have little significant impact, positive or negative, on the technology transfer surplus. However, if the PTO publication proposal is viewed as a bargaining chip to be conceded in return for certain JPO concessions, the proposal assumes enormous value. This is so because the JPO concessions would reduce the ability of Japanese firms to engage in patent flooding, thereby assisting in reducing the technology transfer surplus.

5. Analysis of JPO Concessions Resulting from JPO-PTO Patent Harmonization Negotiations and Their Effect on the Technology Transfer Surplus

a. Why Acceptance of English Language Applications for the Purpose of Establishing Priority Will Reduce the Technology Transfer Surplus

The acceptance of English language applications should operate to reduce the technology transfer surplus in the following way. Japan's first-to-file system encourages early application filing.²²² The incentive to file early leads to hastily prepared applications.²²³ Time limitations, combined with the JPO native language requirement, increase the frequency of inaccuracies in U.S. applications.²²⁴ As we have seen, curing translation inaccuracies would be a positive step in reducing the technology transfer surplus. Permitting English language applications followed by a Japanese translation within two months, should reduce the frequency of claim inaccuracies.

b. Why the Elimination of Pre-Grant Oppositions Will Reduce the Technology Transfer Surplus

The abuse of the pre-grant opposition mechanism significantly delays the issuance of a JPO patent.²²⁵ Since the JPO publishes applications eighteen months after filing and the pendency period is about six to seven years from

²²² See Conley, *supra* note 68, at 785.

²²³ See *Patent Protections in Japan II*, *supra* note 8, at 14.

²²⁴ *Id.*

²²⁵ *Id.* at 9.

the filing date, the subject matter of all applications is prone to appropriation by competitors who have ample opportunity to patent flood.²²⁶

Post-grant opposition procedures should significantly reduce the pendency period. As a result, the subject matter is unprotected for a shorter duration, and competitors have less of an opportunity for patent flooding. The original holder of the subject matter should have an increased opportunity to exclusively develop the subject matter. If the original American inventor has a greater opportunity to develop the subject matter, then the technology transfer surplus will be reduced.

c. Why Automatic Examination within 3 Years of Filing Will Reduce the Technology Transfer Surplus

Automatic JPO examination should reduce the technology transfer surplus for substantially the same reasons as the switch to a post-grant opposition mechanism. Examination within three years should shorten the pendency period for applications, thereby reducing the period in which the subject matter is unprotected and a patent flooding target. If the applicant is a U.S. entity, this translates into a greater opportunity to exclusively develop the subject matter which will reduce the technology transfer surplus.

Provided that these proposed measures are promulgated by the respective legislative bodies, the agreements reached between the PTO and JPO will have a significant impact on limiting the practice of patent flooding, which is the primary catalyst of the technology transfer surplus. As discussed above, an additional bilateral agreement permitting reciprocal patent bar membership would also contribute to reducing the technology transfer surplus, and thereby reduce the trade deficit.

VII. CONCLUSION

The current American and Japanese patent systems not only permit, but encourage the technology transfer surplus from the United States to Japan, which in turn contributes significantly to the trade deficit between the two countries. U.S. firms have their patentable subject matter appropriated by Japanese firms through practices implicitly condoned and permitted by the JPO.

Though the ideological aims of the respective patent systems are

²²⁶ *Id.* at 10.

synonymous, the differences in the respective legal frameworks encourage patent flooding and coercive licensing which create the technology transfer surplus. Additionally, the realities of the business world contribute to the technology transfer surplus. The typical Japanese firm seeking patent protection is a large conglomerate, while the typical U.S. firm seeking patent protection is a small, closely held entity. Large Japanese firms easily engage in patent flooding and coercive licensing practices because the Japanese system is conducive to this type of manipulation. Unfortunately the small American firm is typically the prey of such conduct.

Thankfully for U.S. firms, the technology transfer surplus is reversible. Private remedial efforts on the part of U.S. firms, and legislative efforts on the part of both patent offices will help to stem the one-way flow of technology from the United States to Japan. By improving JPO application translations, American firms can help increase the adequacy of their patent protections in Japan. If the proposals are adopted, the agreements reached between the JPO and PTO that address specific harmonization issues will also increase the adequacy of patent protection in Japan. Finally, negotiating for U.S. attorneys' admission to the JPO patent bar will operate to increase the sufficiency of U.S. firms' JPO patent protections.

Fortunately, reducing the technology transfer surplus can be accomplished without compromising the features of the U.S. patent system that promote the innovative activities of small American firms, such as the first-to-invent priority system, the doctrine of equivalents, and the availability of injunctive relief for infringement claims.

Reducing the technology transfer surplus will diminish the trade deficit because U.S. firms will realize greater control of the development, and hence the market potential, of their patentable subject matter.

