Global Patent Protection

The International Patent System and the New Administration

By Bruce A. Lehman

While creativity is inherent in human nature ... it does not help society, unless it is taken further and converted into a commercially useful new product or process, and this stage of converting inventive ideas into real products is very costly and uncertain. The economic function of the patent system is to provide a measure of predictability and protection to this expensive process of product and process development. As such, it lies at the heart of technological progress, which is in turn the primary engine of economic growth.¹

Unfortunately, this link is increasingly frayed in the United States and abroad. Patent systems here and in other countries are experiencing a period of crisis, characterized by too many patent applications pending final approval, the declining quality of patent examinations, duplication of work by multiple patent offices, and the increasing costs of patent prosecution. This global patent backlog cri-
sis cuts to the heart of the problem plaguing the roll out of timely and effective innovations to help the world cope with such immediate dangers as climate change and pandemic diseases. The incoming Obama administration will need to grasp the problems with the international patent system and act swiftly but carefully—along the lines recommended in the pages that follow.

THE PROBLEM

The number of patent applications awaiting examination at the U.S. Patent and Trademark Office climbed to more than 1 million by the end of 2006, with the backlog of unexamined applications increasing by 9 percent by the end of 2007, the last year for which complete data are available. During the same period the number of patents granted by the USPTO actually declined by more than 16,000—despite a substantial increase in examiners to a total of 5,477.

A study by the U.S. Government Accountability Office released in September 2007 concluded that USPTO efforts thus far to address the rise in workload through hiring new examiners has failed with the result that the agency “ultimately may be unable to fulfill its mission of ensuring U.S. competitiveness.” But the USPTO is not alone in falling behind in accomplishing its vital mission. A study by the combined staffs of the European, Japanese, and U.S. patent offices found that the increasing demand for patent rights is a global phenomenon, with a 15.5 percent average growth rate among regional and national patent offices from 2002 through 2006.

This increasing demand is coming not only from developed countries served by the European, U.S., and Japanese systems, but also by emerging nations such as China, India, and South Korea. These countries experienced a 16 percent increase in patent applications from their nationals between 2002 and 2006. Between 2005 and 2006 applications from Chinese inventors alone increased by over 32 percent.

The United States, however, continues to lead in the number of applications involving high technology and in the percentage of its citizens filing such applications. Thirty-nine percent of USPTO applications reflect high technology inventions and 55 percent of these applications are from U.S. inventors. Maintaining the U.S. advantage revealed by these statistics will be crucial to the president-elect’s plans to create economic growth through investment in new technologies, particularly green technologies. These statistics emphasize the importance to the United States of an efficient patent examination system that will keep that comparative advantage secure.

The internationalization of the patent system as a cause of the backlog

The World Intellectual Property Organization identifies the internationalization of the patent system as the primary source of the explosion in work among national and regional patent offices. Its 2008 World Patent Report notes that there has been a disproportionate increase in direct non-resident patent filings as well as filings through the multinational Patent Cooperation Treaty system. The World Patent Report observes that the “non-resident filings share of total patent filings increased from 35.7 percent in 1995 to 43 percent in 2006.”

The WIPO also finds that these non-resident filings currently originate in a small number of countries led by the United States, Japan, and Germany. Eight developed countries increased their share of worldwide non-resident filings, to 74 percent in 2006 from 66 percent in 2000. The 2008 report finds that “applicants from emerging economies, including China, file relatively few patent applications outside their home countries.” In addition, WIPO statistics also reveal that most of these multinational filings involve essentially the same invention. Patents involving the same invention are called “patent families”; approximately 24 percent of all
Patent families are filed in two or more national or regional patent offices.\(^9\)

While a large number of duplicative filings involving the same “patent family” are initiated through the Patent Cooperation Treaty system, many do not involve the use of the PCT at all. This is particularly true of patents originating in the United States, Europe, and Japan and simultaneously filed in each of the other jurisdictions.

Whatever the method of filing (either through the PCT or directly) these duplicative filings have had a disproportionately large impact on the USPTO and its workload. Between 2005 and 2006, for example, the number of filings at the USPTO originating in Europe and Japan increased to 135,806 from 114,526. Probably nearly all of these applications filed in the USPTO represent inventions for which patents were also sought in the countries where the applications originated. The total number of patent applications in the USPTO for 2006 was just short of 496,000. Thus, approximately 27 percent of the work received by the USPTO involved European and Japanese inventions that in all likelihood will also be examined independently in those jurisdictions. Overall, in 2006 nearly 48 percent of applications in the USPTO were from foreign inventors.\(^11\)

The disproportionate impact of duplicative filings on the USPTO

A review of statistics contained in the 2007 Tri-lateral Report reveals that while the time periods for first action on an application in the United States and Europe were not too dissimilar, the time between the filing of the application and final action, known as pendency in patent parlance, was much greater in Europe. The overall pendency time for the entire examination process in Europe was 45.3 months compared to 32 months in the United States.

In Japan, pendency to first office action was 26.7 months, but total pendency was only 32.4 months. The Japanese statistics are misleading, however, in that pendency is measured from the time of request for examination. And, Japanese applicants have up to three years to request examination. Overwhelmingly, Japanese multinationals use this “deferred examination” procedure. Deferred examination currently is not an option in the United States. This means that if an application is filed simultaneously on a Japanese invention in both countries, the actual time to final action in Japan is 68 months, or five and one-half years.

The differences between the three most important patent offices in the world mean that it is not possible, in spite of the expressed desire to do so, for the United States to take advantage of the results of foreign examinations and thereby decrease the workload of examiners. The United States must examine virtually every application from scratch even though that application will receive a so-called prior art search to determine the patent’s claim of originality in another jurisdiction.

The costly and time-consuming impact of duplicative examination has been recognized by the USPTO and its sister patent offices for some time. This has lead to discussions over several years to develop a system to share examination information among the offices so as to lessen the workload for each one. Within the past year, the USPTO has expanded these discussions to include similar agreements with other countries. Yet the fact remains that these discussions have had little practical effect because the foreign searches and examinations are not effectively available for use by the USPTO.
For all practical purposes, then, many foreign applicants are not inconvenienced by longer pendency times in their home countries. This is in part because the United States is the world’s largest and most important technology market—and therefore the market where it is most important to obtain a patent—but also because the United States is a much more litigious society in which it is vastly more important to secure rights as a protection from or as a cause of action for an infringement lawsuit.

Patents are arguably much more important to technological industries in the United States than in other countries. This is not only because there is fiercer competition and a greater likelihood of patent litigation in the United States, but also because investments in technology in the United States are to a much greater extent than elsewhere financed by venture capitalists who require the certainty of patent protection as a precondition to investment. Increasingly long pendency periods create an unacceptable uncertainty for these investors, which in turn threatens their return on these investments.

**PATENT LAW HARMONIZATION AND ITS IMPACT ON PATENT EXAMINATIONS**

The global patent system is one of the most harmonized areas of international economic law. It also is one of the oldest subjects of international harmonization. The universally recognized requirements of patentability date from the Paris Convention on Industrial Property, which came into force in 1883. These basic principles are that patent protection requires that an invention be novel and that it not be obvious to one ordinarily skilled in the technical art. This is called “inventive step” in most countries. In the major technology markets of the United States, Europe, and Japan this step also requires that an invention have industrial applicability.

These requirements were included as conditions in the Agreement on Trade-Related Aspects of Intellectual Property Rights, or TRIPS, which is an annex to the World Trade Organization Treaty. Any WTO member state must adhere to these basic principles. The TRIPS agreement also contains additional requirements such as a prohibition against discriminating against the patentability of certain technologies.

Because of these common standards of patentability, the same inventions routinely receive patents in all countries. There remain, however, some important differences among countries regarding patent rights. And it is the United States that retains the most important non-conforming idiosyncrasies.

Chief among these is the so-called first-to-invent system. In the United States, it is the inventor who can prove that he invented first who receives priority when there is a dispute over who owns the rights to a particular invention. In all other countries priority is given to the first inventor to file a patent application, known as the first-to-file system.

Another important difference between the United States and other countries’ patent systems involves the so-called “grace period” in which inventors have 12 months to file a patent application after they publicly disclose the invention. In most other countries, particularly in Europe, there is no such grace period. In Japan the grace period is only six months. Also, in the United States, domestic applicants who do not also file in another country are not required to have their applications made public as in the case in other countries. These differences—and the unwillingness of the United States to change them—have made it difficult to harmonize the standards and conditions of patentability among various nations.

In recent years efforts by the United States to negotiate with other countries on patent issues have been hindered by the differences in the U.S. system. Opposition in Congress to legislation that would eliminate these unique features of U.S. patent law has made it difficult for the United States to achieve further harmonization in areas where such approval is necessary.
Furthermore, the idiosyncrasies of U.S. patent law have been used by leading developing countries such as Brazil and India as reasons to resist U.S. efforts in international norm-making organizations such as WIPO to modernize and strengthen international protection of patent rights. Indeed, there have been concerted efforts by these countries to expand exceptions to the TRIPS agreement, such as in the area of compulsory licensing.

International cooperation efforts of the Bush administration

During previous administrations, including the Clinton administration, U.S. intellectual property diplomacy was primarily focused on global negotiations that took place either in the context of the General Agreement on Tariffs and Trade, the predecessor to the WTO treaty, or at the WIPO, which is the specialized U.N. agency responsible for global norms involving intellectual property rights. Where bilateral or multilateral negotiations did take place, such as under the North American Free Trade Agreement or the U.S.-Japan patent harmonization discussions, these negotiations always were seen as a predicate to a global agreement.

Yet efforts by the Bush administration to achieve further harmonization were stymied by its unwillingness or inability to eliminate the remaining anomalies in its patent law, combined with a determined pushback on the TRIPS Agreement by a number of important developing countries. As a result, IP diplomacy in the Bush years focused either on bilateral or multilateral negotiations independent of the WTO or WIPO. Consequently, the role of the USPTO in trade-related IP negotiations was greatly reduced, with the U.S. Trade Representative proceeding either with limited input by the USPTO or with greater input by a variety of government departments and agencies other than the USPTO. 12

The result? During the Bush years the USPTO’s role was largely limited to negotiations involving the mechanics of patent examination and of international cooperation among patent offices. This has taken the form of discussions of more effective “work sharing” among the three “trilateral” patent offices and a small number of additional technologically developed countries such as Canada, Australia, South Korea, and Singapore. More recently, China has been included in this group as a result of the rapid growth of its patent office—now the world’s fourth largest. As a practical matter these negotiations have not had any substantive impact on eliminating duplication in the international patent examining system or in further harmonizing international patent law norms.

NEW ISSUES

The most important changes brought about by the TRIPS Agreement required all WTO signatories to: adhere to the principals of patentability contained in the Paris Convention; eliminate discrimination against specific technologies in granting patent rights; limit the use of compulsory licensing to emergency situations; and establish effective mechanisms for the enforcement of patent rights. While the TRIPS Agreement restricted the discretion of signatory countries to use compulsory licensing, it did not eliminate compulsory licensing as policy tool. All countries, including the United States, retain the power to use compulsory licensing in emergency situations. Indeed, in the United States compulsory licensing of patents is much like the extension to intellectual property of the concept of “eminent domain” used by government to acquire real property. The use of compulsory licensing by foreign governments, however, to access technology originating in the United States is something that can raise serious issues for an economy that is based on exports of patented technology. The first two of these changes were largely positive but the third one—compulsory licensing—resulted in unforeseen consequences that remain unaddressed by changes in enforcement issues.
Here’s what happened in the public health field. In response to the AIDS crisis, the WTO Ministers in 2001 adopted a special declaration clarifying article 31 of the TRIPS Agreement concerning emergency compulsory licensing. The effect of this declaration was to give developing countries wide latitude in determining the circumstances under which compulsory licensing can be used in matters involving public health, and to permit the use of compulsory licensing for the importation of drugs from other countries. Subsequently, important developing countries such as Brazil and Thailand, both of which had been importing patented therapies from the United States at market prices, began to demand more favorable terms from U.S. pharmaceutical companies under the threat of compulsory licensing.

In 2007, the U.S. Congress endorsed this approach by demanding as a precondition for approval of bilateral trade agreements with Peru, Columbia, and Panama that the Bush administration recognize the right of those countries to use compulsory licenses. Then, earlier this year, an intergovernmental working group of the World Health Organization recommended that the use of compulsory licenses be extended to all health-related technologies, including medical devices.

The demand for more liberal use of compulsory licensing has now surfaced in negotiations in the United Nations Framework Conference on Climate Change, where developing countries are pressing for the ability to license compulsory yet-to-be developed technologies that will reduce greenhouse gas emissions. This is a development that will have to be carefully considered by the incoming Obama administration, particularly since a premise of the environmental and economic policy articulated in the president-elect’s campaign was that exports of these technologies would become a principal component of job creation and economic growth for the United States.

The effective transfer of technology is an important element in any effort to combat climate change in emerging economies, but this must be done carefully—in a manner that recognizes the significance of the comparative advantage the United States enjoys in this area as an essential element of its economic growth and the creation of new jobs for its workers. The impact of these new issues on the challenges facing the USPTO is that probably any attempt by the new administration to negotiate global agreements to further harmonize international patent law or to eliminate duplication in patent examining may be met with demands for a quid pro quo on these issues from big developing countries.

**RECOMMENDATIONS FOR THE NEW ADMINISTRATION**

The most immediate problem confronting the U.S. administration is to respond to the findings of the Government Accountability Office that U.S. competitiveness will be undermined unless the backlog in patent examination at the USPTO is reversed. The GAO report makes it clear that simply hiring more examiners will not solve the problem. In fact, patent grants by the USPTO actually declined last year in spite of increased hiring of examiners.

Any analysis of international patenting statistics reveals that much of the pressure on the USPTO results from duplicative filings of essentially the same patent application in multiple national jurisdictions. And for the moment these duplicative filings are originating in a handful of other technologically advanced countries that also have sophisticated patent examining infrastructures.

Therefore, more effective sharing of the examination burden among these patent offices and the elimination of duplicative prior art searching would greatly reduce the burden on the USPTO. But if effective work sharing that will benefit the USPTO is to take place, then U.S. examiners must have access to the work product of their foreign counterparts prior to beginning their examination of a patent application originating in the foreign jurisdic-
tion. This will require either that the United States adopt a system of deferred examination that will permit it to delay substantive searching and examining until after the foreign jurisdiction has produced a search report, or that the existing system of deferred examinations in these foreign jurisdictions, especially in Japan, be eliminated.

Where an applicant has filed for a patent on the same invention in the European Patent Office, U.S. examiners should have access to the search report of the EPO prior to beginning their work. This should not be difficult because the EPO itself bifurcates the search and examination phases with search specialists producing the prior art report that serves as the basis for the substantive patentability analysis later made by the examining specialist. Given that the EPO currently has a relatively short time period (22 months) until a first office action on an application, the search report ought to be available to the U.S. examiner sooner than 22 months.

It should be emphasized that these recommendations would apply only to the 27 percent of USPTO applications that originate in Europe and Japan—jurisdictions with reliable search systems. And any deferred examination of an application originating abroad would take place only if the applicant had utilized deferred examination in his own jurisdiction. The ability to eliminate duplicative searching with Japan and Europe could reduce the USPTO workload substantially, with the result that the examiner time saved could be used to reduce the current backlog.

**Create a multinational or global patent office for the United States**

Ultimately, however, the most effective way of eliminating duplicative examinations from the global patent system—and to promote uniformity and harmonization—would be for the United States to work with its foreign partners to create a multinational patent examining authority that could be used as a substitute for the USPTO. This is how the EPO serves as an alternative to country-by-country examination in Europe.

It is important to keep in mind that this recommendation does not contemplate replacing the USPTO with a multinational authority. It simply means that an applicant intending to file multinationally would have a choice as to which approach to use—as is the case in Europe today where individual national offices continue to accept and examine applications applicable to their own territory. And as is the case in Europe today, the U.S. patent would be issued by the national office, the USPTO, not the multinational examining authority. This would take place only after a review that the examination complied with U.S. law. In no way would the sovereignty of the United States be compromised.

A predicate to reliance on the work of an international examining authority—or the search report of a foreign office—must be that the work be of the highest quality. This will require a strong oversight mechanism to ensure that the USPTO can rely on this external work product.

While the EPO serves as a precedent for a multinational search authority it must be kept in mind that the EPO is a mid-20th century office that was created long before the Internet and 21st-century information technology. It is likely that any new multinational examining authority would be a “virtual” patent office, relying heavily on resources in more than one country. The new system would not require a large physical plant or thousands of new hires stationed in a specific location. It is likely that existing patent offices, including the USPTO, would provide the search and examination services on an agreed basis.

It would, for example, be possible to assign work to offices on the basis of special expertise in which a particular group could become the most competent. This system also would permit the use of examining resources such as the high-quality national offices of Europe whose work has partially been displaced by the European Patent Office. Such a patent office also would be free to
employ the most advanced electronic search technology unencumbered by archaic legacy systems currently in use by existing offices.

Any new multinational authority could be created on an ad hoc basis by agreement of countries willing to participate. Or it could be created under the auspices of WIPO. One advantage of using WIPO is that developing countries would be more likely to use the services of the new authority as WIPO is widely trusted throughout the world. This would enable the vast majority of countries that today are incapable of conducting meaningful examinations to do so, and would eliminate different examining results in different jurisdictions and the mischief that is possible when individual countries manipulate the examining system for political purposes.

Were the WIPO to serve as the home for a new multinational patent office, it would not be necessary to promulgate a new treaty prior to setting up the office. This is because the current Patent Cooperation Treaty recognizes that examination may be by a multinational authority and permits the WIPO General Assembly to recognize specific national or multinational offices as search authorities. The WIPO General Assembly could simply designate its own search authority as one of the limited number currently recognized to perform this function under the PCT.

Under no circumstances would the creation of a search-and-examination authority under the auspices of WIPO involve a large Geneva-based bureaucracy. There would be only a small central staff to administer the components of the “virtual office” spread among a number of countries. This central staff would maintain the IT infrastructure and assure quality control of the searches and examinations performed by the various components.

As is the case today with the USPTO and most other national offices, patent examining activity is not supported by taxpayers. It is paid for by fees assessed to applicants. This would be the case with any new multinational office. Yet these fees would not be subject to diversion into national treasuries and the structure and technologies used would, in all likelihood, be more cost efficient than the existing system.

Certainly, a one-stop-shop ought to provide significant cost savings for applicants compared to the highly duplicative system in existence today. The resulting cost savings could be passed on to applicants, making it possible for individuals and small businesses—particularly those in poorer developing countries—to obtain effective patent protection in the world’s major markets in a way that is not possible today.

*Harmonize U.S. law with international norms*

In the absence of globalization there would be very little need for the United States to consider modifying its longstanding doctrine that the person who is first to invent receives a patent even when another has filed a patent application on the same invention earlier. The first-to-invent system is arguably fairer, particularly to inventors who lack the financial resources to hire a patent attorney to draft and file a patent application immediately after the act of invention.

The economy of the United States, however, is now inextricably intertwined with those of other countries. And given the comparative advantage of the United States in trade based on patented technology, the United States will receive disproportionately greater benefit from the economic efficiency created by global patent law harmonization. The United States stands alone in maintaining a first-to-invent system. Therefore, it will be extremely difficult, if not impossible, to persuade other countries to change their long-standing practices and conform to the U.S. system in any patent law harmonization negotiations.

Further, out of the hundreds of thousands of U.S. patents granted every year there are only a small number, usually no more than a few hundred, where there
is a dispute over whether the first inventor also was not the first filer. Given the fact that the anomalous first-to-invent system makes it much more difficult to negotiate an easier path to global patent protection for U.S. inventors, any arguable equities inherent in maintaining a first-to-invent system are outweighed by the advantages to U.S. inventors of a higher level of international harmonization.

Therefore the incoming Obama administration should give strong consideration to adopting a first-inventor-to-file position in any international negotiations involving substantive patent law harmonization. Of course, if the United States agrees to change its law in this regard it should expect corresponding concessions from other negotiating parties. As an example, this could include concessions on matters such as the grace period between public disclosure and the filing of a patent application.

**Develop a response to the growing pressure to expand compulsory licensing**

There is growing pressure from developing countries to expand the use of compulsory licensing beyond replication of the chemical composition of pharmaceuticals needed to respond to health emergencies. This is seen in proposals put forth by influential developing nations such as Brazil in the United Nations Framework Conference on Climate Change. The United States must develop a response to this pressure that does not damage its comparative advantage in technology-based trade, while at the same time recognizing the legitimate need of countries such as China and India to have access to the newest technologies to reduce greenhouse gas emissions into the earth’s atmosphere.

This response must be more than ideological. It must be based on persuasive evidence, such as the fact that the widespread presence of compulsory licensing statutes in the laws of developing countries in the mid-20th century as part of their strategies to effect ‘import substitution’ had no demonstrably positive effect on their efforts to industrialize. In fact, the evidence suggests that such strategies may have retarded technology transfer.

The reason: Access to the data contained in a patent is rarely adequate, in itself, to enable developing country industries to manufacture the sophisticated industrial products containing patented inventions, particularly products that are typical in the transportation and energy industries that account for the largest share of carbon emissions into the atmosphere. It would be tragic if private-sector investment in environmental technologies were to be impeded because of fear of loss of global patent protection.

The incoming administration must put patent issues in the context of the many other issues that affect transfer of technology, including the financing of low-carbon infrastructures in developing countries and the fact that technology transfer is best achieved when it is practiced as technology-based trade. Successful trade relationships must involve a balance between the interests of trading partners.

As it takes the lead in developing a new global treaty to address climate change, the United States must not relegate patent issues to the status of an afterthought. This will require the involvement of patent law specialists early in the development of U.S. climate change strategy. And within government those specialists are to be found in the USPTO and the patent licensing offices of the existing departments and agencies that license government-funded technology, such as the National Institutes of Health, Department of Defense, NASA, National Institutes of Standards and Technology, and the Department of Energy. These are departments and agencies with long experience in market-based transfer of government-funded technology to the private sector.

**Use the USPTO’s expertise in international negotiations**

The USPTO is the government agency with the greatest concentration of expertise in intellectual property law and policy. It is the only entity within the govern-
ment with a leader at the undersecretary level focused solely on intellectual property matters. Therefore, in addition to implementing a system of work sharing or multinational examination that would meaningfully take pressure of the USPTO itself, the new administration should restore the policy role of the USPTO in the wide range of international intellectual property negotiations. The USPTO has the expertise and career staff to ensure that any such negotiations will be based on the substantive technical knowledge that is essential to successful decision making.

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NOTES

6 Ibid.
8 Trilateral Statistics Report 2007, Chapter 4. These technologies include computer and automated business equipment, micro-organism and genetic engineering, aviation, communications technology, semi-conductors and lasers.
9 The Patent Cooperation Treaty is a WIPO-administered treaty that permits applicants to file in one member country and simultaneously fi le provisional applications in other member countries. While the applicant may fi le in multiple jurisdictions initially using the PCT he or she must pursue the actual examination of the application in each designated country. There is no world patent. A national patent is valid only within the jurisdiction of the country in which it is granted.
10 The principal regional patent offi ce in the world is the European Patent Offi ce, which examines patents for 33 member states. While, the European Patent Convention permits fi ling in each member state, most multinational patent applicants prefer the one-stop shop of the European Patent Office.
12 Beginning with the Reagan administration, while the USTR served as the lead agency for trade negotiations, the substantive policy development and day-to-day negotiations were principally undertaken by the USPTO under the leadership of Michael Kirk, a career USPTO ofﬁ cial who was appointed deputy commissioner of patents and trademarks by President Clinton. No USPTO ofﬁ cial has played a comparable role in the Bush administration.
13 This reﬂ ects the “Rio Document” authored by Brazil’s Minister of Foreign Affairs and signed by representatives from Argentina, Bolivia, Costa Rica, Cuba, Ecuador, El Salvador, Honduras, Mexico, Peru, Suriname, Uruguay, and Venezuela in September 2007, which states that “the promotion of technological innovation and the transfer of technology is a right of all states and should not be restricted by intellectual property rights...”