ASIA BUSINESS COUNCIL

Intellectual Property Rights: A Survey of the Major Issues

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Executive Summary

The protection of intellectual property rights (IPR) has become one of the most contentious issues in global commerce. IPR-related disputes dominate not only trade among nations, but business within nations. Several trends – globalization of technology and skill, emergence of new technologies, and the rapid development of emerging economies – have jointly elevated the importance of IPR protection, both politically and commercially. This survey summarizes the most salient IPR issues, such as the economic impact of weak protection of IPR, outdated patent systems in developed economies, tensions between developed countries and developing countries over IPR protection, government and business responses, and proposed reforms.

Background[1]

For all intents and purposes, IPR protection was not a major international trade issue prior to the 1990s – and for good reason. Prior to the end of the Cold War and the advent of accelerated globalization and the information revolution in the 1990s, the protection of IPR remained mainly a domestic, rather than a global, issue. But since the 1990s, IPR protection has assumed growing salience in international trade in general, and in the commercial relations between developed and developing countries in particular. Several trends have made IPR protection a critical business and national strategy for corporations and governments:

- The globalization of technology and human resources: with the rapid increases in foreign direct investment and improvement in technology, the flow of critical technologies and skills has expanded and accelerated, both within the developed world and between the developed and developing economies. The movement of capital and technology has, ironically, made IPR both more valuable and vulnerable at the same time.

- The emergence of new technologies, in particular, rapid breakthroughs in biotechnology, the adoption of new business processes and methods, and the spread of new software, such as Napster's file-sharing program threaten entire industries. These new technologies, some of which are controversial (such as the patenting of genetic materials), have either made IPR more vulnerable or rendered the existing IPR regime obsolete.

- The growing role of emerging markets in the global economy coincides with these countries' weak ability to protect IPR. At a fundamental level, the incentives of developing countries conflict with those of developed countries. As one scholar noted," A country would have little or no interest in protecting IPRs in products of which it is solely an imitator and intends to remain so – here the

[1] What is IPR? In this survey, IPR includes patents, copyrights, and trademarks.

national interest is above all consumer welfare – sourcing the products as cheaply as possible."[2]

IPR has gained commercial and political salience in recent years because the stakes involved are huge and growing. IPR violations cause job and revenue losses in rich countries. Take, for example, the case of counterfeiting, one of the most prevalent forms of IPR violation. According to the Federal Bureau of Investigation (FBI), 5-7 percent of world trade is in counterfeit goods, worth about $500 billion. Counterfeiting losses, argues the U.S. Chamber of Commerce, costs 750,000 American jobs and $200-250 billion in lost revenue for American businesses each year. China, which has been accused of a leading violator of IPR, is itself a primary victim as well. According to one estimate, sales of counterfeits in China have been approximately $19-24 billion a year (1-1.5 percent of GDP); another estimate puts counterfeiting at 8 percent of Chinese GDP. About 15-20 percent of all Chinese brands are victims of counterfeits. Chinese firms report that of all the counterfeits produced; only 8 percent are seized each year.[3]

More importantly, counterfeiting increases public safety and health risks. The World Health Organization (WHO) estimates that 10 percent of all pharmaceuticals sold worldwide are counterfeit. In some developing countries, fake medicine accounts for as high as 60 percent of the drugs sold. Worldwide, sales of counterfeit vehicle parts amount to $12 billion each year, raising serious safety and liability issues for legitimate automobile and auto parts manufacturers, in addition to damaging their brands.

Besides counterfeiting, copyrights infringement and the use of pirated materials pose another challenge in the protection of IPR. According to the Office of the United States Trade Representative (OUSTR), the loss of revenue from the use of pirated copyright materials, such as motion pictures, records and music, business software, entertainment software, and books amounts to $12 billion a year for American firms. In the Special 301 list published by the OUSTR in 2005, the following countries, which are placed on the priority watch list, are accused of rampant use of pirated copyright materials.

1. China ($2.5 billion)
2. Russia ($1.7 billion)
3. Brazil ($931 million)
4. Mexico ($870 million)
5. Italy ($795 million)
6. South Korea ($696 million)
7. Canada ($486 million)
8. India ($464 million)

In terms of copyright materials being pirated, the largest category was business software ($5.69 billion, or almost half of the lost revenue); it was followed by records and music

[2] M.J. Trebilcock and R. Howse, in *The Regulation of International Trade.*
[3] Myron Brilliant, Vice President, East Asia, U.S. Chamber of Commerce, "Testimony before the House Judicial Subcommittee on the Courts, the Internet and Intellectual Property," May 17, 2005; www.chinanews.com.cn, December 19, 2004.

($2.44 billion). Losses from pirated entertainment software ($1.74 billion) and motion pictures ($1.64 billion) were about the same.

The rapid spread of counterfeiting and pirated copyright materials is caused by several factors, among them:

- Available low-cost technology enables counterfeiters to produce high-quality goods for the gray markets. For example, a "rapid prototyper" machine can take a three-dimensional digital scan of a plastic or wooden toy and reproduce a prototype within hours. Seven-disk DVD burning machines costing only $650 each, compared with DVD pressing equipment that costs $1 million each, allow smaller pirating operations, which are more difficult to root out.

- FDI has resulted in the transfer of technology and know-how (state-of-art machines and technical help from European artisans working in luxury industries) to low-cost developing countries. In particular, the outsourcing of production of brand goods to low-cost countries produces spill-over effects, one of which is the production overruns of brand goods targeting gray markets.

- Tolerant consumer attitudes in both developed and developing countries make enforcement more difficult. Consumers attach little moral stigma to purchasing counterfeits or pirated copyright materials. According to a survey of 500 Japanese school teachers, 20 percent of them have bought counterfeits. Among those who have done so, 63 percent claimed they bought fake products because they were "cheap" and 25 percent said they were "high quality."

IPR and Patent Reform in Developed Countries

Although most of the media attention has been focused on counterfeiting and piracy in developing countries, IPR-related disputes in developed countries, as reflected in rising IPR litigation and associated litigation costs, have gained the attention of policy-makers and business leaders as well. To a large extent, IPR in developed economies have become more contentious mainly because they have become more valuable in a knowledge-based economy. The rapid pace of innovation, both in technology and business practices, has led to an explosion of claims on IPR. Yet, the patent systems that govern the granting of IPR to firms remain out-of-date and incomplete in some critical respects and are far from harmonized among developed economies. In addition, although the number of patent applications has risen dramatically, government resources devoted to examining these applications have not caught up. For example, the U.S. Patent and Trademark Office issues about 1,000 patents every working hour, or close to 160,000 in 2003. On average, the U.S. Patent and Trademark Office (PTO) receives 355,000 applications a year and approves 160,000 (a 45 percent rate of approval). Half of U.S. patents are awarded to foreign applicants. From 1998 to 2003, 900,000 patents were issued, out of 1.6 million applications. But rising workload appears to have overwhelmed the capacity of the PTO. Today, over 800,000 applications are pending, unexamined.

This, along with other evidence, has led many experts to conclude that, at least in the U.S., patent standards may be declining. Obviously, given a fixed rate of errors, more patents mean more errors in absolute numbers. Moreover, staffing shortage result in less time given to examinations, especially because the PTO staff is unable to spend enough time on complex applications. To make things worse, Congress diverted, from 1992 to 2004, $750 million from the PTO's collected fees to the budgets of other government agencies. Other signs of falling standards include: (1) the patent approval rates in the US are higher than comparable developed countries; (2) the U.S. uses lower standards of "nonobviousness" in treating applications related to business methods and biotechnology and (3) American courts' interventions may have lowered the quality of patents.

A more serious problem is the so-called "disharmony among nations." Although the U.S. may be the most innovative society in the world, the American patent system is generally considered the least up-to-date and contains several quirky provisions that are deemed as inefficient and counterproductive. Compared with the European and Japanese systems, four features of the American patent system stand out

(1) First-to-invent vs. first-to-file. The U.S. is the only country in the world that requires the so-called proof of invention date when granting patents. In Europe and Japan, by contrast, the system is the so-called "first-to-file" – patents are granted to the applicant who files first. The American system is blamed for encouraging litigation because it is often more difficult to establish the date of invention.

(2) Only the U.S. requires the so-called "best mode" to implement an invention, which offers another potential cause for litigation while the benefits of the "best mode" remain uncertain.

(3) The U.S. system provides a one-year grace period -- time in which an applicant can disclose or commercialize an invention before filing an application. Japan has a more limited period while EU has none. This feature can also encourage litigation because it reduces transparency and does not allow rivals to challenge the validity of the applications.

(4) The so-called "willful infringement doctrine" adopted by the U.S. – triple damages awarded to plaintiffs who can establish that the defendants knowingly infringe on patents -- deters the spread of knowledge as firms and individual innovators take extraordinary precaution to avoid such accusations.

Differences in patent systems raise costs for businesses to obtain worldwide patents ($750,000 to $1 million needed to obtain worldwide patent protection). American firms must file different applications in different countries. Within EU, national patent offices have diverse rules and this raises the costs of obtaining EU-wide patents for small businesses. All of this contributes to a rapid increase in IPR litigation. In 2004, 3,075 patent lawsuits were filed in U.S. District Courts, compared with 1553 in 1993 (doubling

in 11 years). Litigation costs have risen as well (for instance, IPR-litigation costs rose 32% in 2003, according to a survey of American firms. Many leading American firms have fallen victim to IPR lawsuits. Microsoft, for example, faces 40 lawsuits at any given time and spends $100 million in legal fees on IPR litigation each year. IPR lawsuits are costly. Disputing a patent worth less than $1 million can cost $500,000 while a simple "patent interference" lawsuit costs $300,000.

IPR and the North-South Divide

With the looming deadline of mandatory implementation of Trade-Related Intellectual Property Rights (TRIPs) starting in 2006 (all WTO member countries have signed on to TRIPS and are obligated to implement the most rudimentary rules for protection of IPR based on U.S. and EU practices), IPR protection has become another hotly debated issue dividing the developed and developing countries. The advocates of stronger protection of IPR in developing countries argue that this would spur innovation and attract foreign direct investment, while critics counter that it will lead an unjust transfer of wealth from the poorest countries to the wealthiest ones. The World Bank estimates that TRIPs represent an annual $20 billion plus transfer of wealth from the technology-importing countries to the technology exporting countries. (The U.S. got $36 billion in royalties in 1998 from patents and licenses, globally). The British Government's Commission on Intellectual Property Rights has raised doubts on the wisdom of enforcing strict IPR standards in developing countries. In its well-received report, the Commission stated, "Standards of IP protection that may be suitable for developed countries may produce more costs than benefits when applied in developing countries, which rely in large part on knowledge generated elsewhere to satisfy their basic needs and foster development… the interests of the producer dominate in the evolution of IP policy, and those of the ultimate consumer are either not heard or heeded…. Developing countries negotiate from a position of relative weakness."

On the issue of whether stringent IPR rules ought to be applied to developing countries, several arguments are worth noting:

- The developed countries are being hypocritical because many of them have benefited from lax IPR rules during the early stages of development in their countries. The US provided no copyright protection for foreign authors for most of the 19th century on the ground that it needed the freedom to copy in order to educate the new nation. Switzerland had no patent system for most of the 19th century. Japan brought its IP laws up to Western standards in 1985 while South Korea did so in 1996.[4]

[4] There are three interesting anecdotes. It took Japan's Patent Office 29 years to grant Texas Instrument the patent on integrated circuit (it filed in 1960); Japanese companies were free to read the patent specification 18 months after TI's filing. They acquired the technology and improved it substantially. Royal Philips Electronics was set up to take advantage of Thomas Edison's inventions because from 1869 to 1912 Holland had no patent law. Ericsson, founded in 1876 (the same year Bell invented the telephone), produced phones using the same technology. Bell forgot to file a patent in Sweden.

- Critics believe that historical record shows that countries have stronger incentives to protect IPR once they have industries to protect. In other words, the best protection of IPR is offered by economic growth and the emergence of domestic industries resulting from such growth. Many successful economies started as imitators, but eventually, copiers became innovators. The path from imitation to innovation has been proven in the developed economies. The question is whether this will be repeated in today's developing economies.

- Strong IPR protection can hinder, rather than nurture, economic development while economies with weak IPR protection can actually gain advantages. The late Linsu Kim, a management professor at Korea University, argued that "strong IP rights protection will hinder rather than facilitate technology transfer and indigenous learning activities in the early stage of industrialization when learning takes place through reverse engineering and duplicative imitation of mature foreign products." Only after countries have accumulated sufficient indigenous capabilities with extensive science and technology infrastructure to undertake creative imitation in the later stage does IP rights protection become an important element in technology transfer. Empirically, Nagesh Kumar, an Indian economist, found that East Asian economies such as Japan, South Korea, and Taiwan used a combination of relatively weak patent protection to encourage technological learning and absorption of foreign technologies.

- Critics cast doubts on the benefits of IPR protection in developing countries and argue that no convincing evidence exists to support the long-term effects of IPR protection on economic growth. On the other hand, in the short-term, the costs of complying with stringent IPR standards (administration, enforcement, and royalty payments) will definitely outweigh the benefits. The same critics also dispute the positive relationship between IPR protection and FDI because there is not enough empirical evidence to prove the connection although survey data suggest that multinational firms prefer countries with stronger IPR protection. In all likelihood, FDI is more dependent on general investment climate, rather than on IPR protection (e.g. China is an illustrative example).

In addition, policy-makers must grapple with the following key issues facing developed and developing countries over IPR protection.

IPR and Public Heath

At the heart of this issue is the access to life-saving drugs in poor countries. To be sure, TRIPs provide a few options, such as compulsory licensing and parallel importing.[5]

[5] "Compulsory licensing" allows countries to manufacture or import copies of a drug without the patent-holder's approval under certain emergency conditions, but the patent-holder must be compensated to some degree; this option is useful only to those countries with the capacity to produce cheaper drugs. "Parallel importing" simply permits countries to import cheaper drugs – a practice not explicitly prohibited under TRIPs.

The absence of a one-size-fits-all solution has led to many ad hoc measures to address this dilemma. For example, Bristol-Myers settled with the Thai government regarding HIV/AIDS treatment drugs in 2004 by giving the rights free to the Thai government. Brazil was able to negotiate cheaper drug prices for antiretroviral drugs from five leading Western drug companies in Jan. 2004 under the threat of using compulsory licensing. India recognizes only "process patents" but not "product patents" and uses this tool to produce cheaper generic drugs.

Agriculture

Of tremendous concern to development specialists is that use of restrictive patents (such as improved seeds) will stunt the growth of agriculture in developing countries (especially critical is the concentration in the seed industry in the West). A proposed solution is for governments to fund research on agricultural innovation (especially seeds of high-yielding and pest-resistant crops, which are currently dominated by a small number of Western biotechnology firms) and provide the products free to developing countries.

Education and Research

Access to information and copyright materials for educators and researchers in poor countries is critical to economic development. But the high costs of these materials and access to them will prevent educators and researchers in developing countries from gaining access to them. A possible solution is to offer discounted fees or free access to such materials.

Patenting Life-forms and Traditional Knowledge

Increasingly, Western firms have begun to patent plants, animals, and genes found in developing countries. Although poor countries are home to a large variety of plants and animals and micro-organisms, firms and innovators in poor countries do not have the financial resources to get patents in rich countries (in the US it costs $20,000 to obtain a patent and $1.5 million to challenge one). As a result, Western firms have gained what seems to be an unfair advantage in claiming IPR to these life-forms. Even more contentious is the patenting of traditional knowledge (such as herbal remedies) in developing countries. This is viewed as a threat, not just to the economic wellbeing, but also to the cultural survival of people in people countries.

Institutional Capacity in Poor Countries

Development specialists doubt whether developing countries possess the institutional capacity to protect IPR even if they want to. For example, building IPR institutions can be costly, time-consuming, and lead to diverting resources from higher priority development objectives. The minimum costs of implementing TRIPs in poor countries are about $1.5-2 million to build a rudimentary structure to enforce TRIPs-related rules,

plus recurring operating costs. In contrast, the U.S. PTO has a $1billion annual budget and 3,000 professionals. In addition, 600 judges preside over IPR litigations in the U.S.[6]

Regional and Bilateral Trade Agreements

With the proliferation of regional and bilateral trade agreements, development specialists worry that such agreements have become the tool-of-choice by developed countries to encourage developing countries to adopt higher standards of IP protection beyond TRIPS.

The United States government has been especially aggressive in using these agreements (such as the U.S.-Chile, U.S.-Singapore, and U.S.-Jordan free trade agreements) to promote higher IPR standards. Many worry that such agreements can undermine the multilateral system by limiting the flexibilities and exceptions permitted under TRIPs.

How Should Business Respond

Generally speaking, the business community has adopted many experimental methods instead of a uniform approach to protecting their IPR.. The following are among the most widely used:

1. Advocacy:

- Firms can organize effective lobbying campaigns to use their governments' power in pushing for higher standards and more stringent enforcement of IPR. Enforcement and external pressure are among the key political instruments in protecting IPR. Notably, this approach seems to be reflected in the trade agreements signed by the U.S. and other countries in recent years. Another good example is the Quality Brands Protection Committee, a business coalition that collects data and lobbies governments.

2. Education and Incubation of Local Innovators:

- Microsoft is helping China develop its local software industry (it co-finances and runs a company in Shanghai called Wicresoft). Philips Electronics is funding programs at three Chinese universities to train IPR experts.

3. R&D Strategies:

- Emphasize lead time, sales and service: These three elements are key to maintaining a firm's competitive edge. According to surveys of 600 U.S. managers, these three elements are much more effective in protecting IP than patents (because litigation is slow, costly, and uncertain).

[6] *The Economist*, June 23, 2001, p. 21.

- Innovate, Innovate: Firms can maintain their competitiveness by pre-empting their imitators, by launching products ahead of rivals, by shortening product cycles, and by offering more new products.

- Technical solutions: for example, use anti-counterfeiting features (e.g., unique ID numbers on labels of products sold; consumers can call to verify authenticity).

4. Business Strategies:

- "Can't beat them; join them": Industries are working with pirates. For example, the music industry has contracted a company called Crystal in Thailand (which formerly pirated CDs) to produce their CDs. Such firms are certified "clean" by the Thai government. In the West, EMI and other companies have formed business ties with Napster, the on-line file-sharing firm.

- Local pricing: Western firms are beginning to offer lower prices on software in developing countries.

- Cross-licensing: Businesses exchange technologies; each participating company is both a transferor and a recipient of proprietary technology. This minimizes copying and litigation.

- Bundling products with services or complementary products over which the firms in question have more control: Netscape gave away its browser so that it could make money on selling enterprise software compatible with the browser.

5. Negative Coping Strategies:

- "Patent trolling": Some companies attempt to profit from the current IPR imbroglio. Typically, they buy – or "troll for" – patents, some of which have little commercial value. "Patent trollers" use such patents to file frivolous suits against other companies in the hope of obtaining favorable judgments or settlements or to use as leverage in case of litigation.

- "Stealing talent": Some companies hire away key people from rivals to obtain critical IPRs. The line here is murky as it is sometimes unclear which information is an individual's knowledge and which is proprietary to the company.

- "Dishonest partnership:" Some firms enter into joint ventures as a cover to gain access to key technologies and get out of the partnership once they have obtained such technology transfers.

Conclusion

The debate over IPR is complex, wide-ranging and, unfortunately, inconclusive. As this brief survey shows, there are really two debates going on. The first revolves around the improvement, reform, and harmonization of the legal framework and procedures that define and protect the IPR in the developed countries. The second is centered on the degree to which developing countries must protect the IPR owned by developed countries. It is obvious that many legitimate economic interests are involved in this debate. What is clear from this survey is that the current systems that underpin the IPR in both developing and developed countries are under mounting stress and are performing inadequately. There is no global consensus on how the current systems should be reformed. (TRIPs seem to be a major improvement on paper, but their effects will depend critically on the willingness and ability of poor countries to honor TRIPs.) Consequently, IPR-related disputes are beginning to affect trade relations negatively. This has forced Western governments, especially the U.S. government, to use bilateral or regional trade agreements to advance their objectives of more effective protection of the IPR of their firms. Corporations have also begun to adapt to the same IPR challenges by adopting a variety of approaches. It remains to be seen whether these ad hoc measures can deliver better results.

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