

Introduction

Property rights have long been firmly established, but Americans do not think much about them in their daily lives. However, they are likely to be much more aware of the value of private property than intellectual property. People will protect their valuables at home and work by locking their doors and installing security systems, and they have an idea of what their business, home, and car are worth, but don't realize that nearly every product they use is the result of someone's idea.

The basic rights to physical and intellectual property (IP) are enshrined in the Constitution. The Founding Fathers included protections for IP in the General Welfare Clause, Article 1, Section 8, while personal property is covered in the Fourth and Fifth Amendments.

The Congress was empowered 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." To catalogue, analyze, and protect those rights, the U.S. Copyright Office and the U.S. Patent and Trademark Office were created. However, there is no "Department of Property" to protect personal property. In fact, Article 5, the Due Process Clause, states that private property can be taken for public use with "just compensation." While the government can exercise eminent domain and take private property under such circumstances, it has no similar or obvious right to take away IP.

Personal property and intellectual property have traditionally been viewed as distinct subjects, as the two types of property had different origins in England. Tangible property has been described as "a creature of common law and copyright largely a creature of statute."¹ That holds true in the United States, as property is not defined in the Constitution, therefore giving it status that predates the writing of that document. Intellectual property, which was protected prior to the Constitution, nonetheless is specifically limited to the "useful arts," giving it a different meaning than the power held by the English Crown in the sixteenth and seventeenth centuries.²

While the two forms of property have different origins, "The concept of property is one of humanity's great inventions. ... if a resource is scarce or if it takes labor to convert it to a useful state, then humans will attach property rights to it."³ Property is "the basis of the market system and wealth accumulation that create economic progress, and thus cultural and spiritual progress."⁴

While it is easy to recognize tangible property, and relatively easy to determine who legally possesses it, "seeing" IP and establishing ownership are more difficult. However, IP is not just

...mere thought... A consistent feature of the four legislative defined categories [patents, copyrights, trademarks, and trade secrets] is that each requires some form of physical embodiment or demonstration in order to gain status as a legally protectable entity. For instance, a novel must first be written ... a trade secret ... must be knowledge protected by restriction to appropriate personnel ... Trademarks must be in active commercial use to identify goods ... Patents are only granted for inventions ... that are described in sufficiently concrete terms that anyone skilled in the industry could 'practice' the invention.⁵

The property rights movement and IP proponents recently recognized the value of working together to protect both forms of ownership. The Property Rights Alliance (PRA) was established in 2005 by Scott LaGanga, who is a contributor to this publication. According to its Website, the PRA “is an advocacy organization that utilizes research, lobbying and education efforts to protect physical and intellectual property rights around the globe. Specifically, grounded in free market economics and the fundamental principle of ownership and competition, PRA seeks to inform national and international legislators about the benefits and perils of decisions concerning property rights.”⁶

The legal protection of intellectual property, in particular, has enormous value. It turns intangible assets into exclusive property rights that can be traded in the market place. A 2005 study estimated the value of IP at “between \$5 trillion and \$5.5 trillion, equivalent to about 45 percent of U.S. GDP and greater than the GDP of any other nation in the world.”⁷ A 2004 report found that copyright industries alone, such as music, publishing, and software, accounted for 6 percent of U.S. GDP in 2002, or more than \$600 billion.⁸

However, that value could be even greater, as a June 2007 global survey found that half of all technology companies do not utilize the full value of their IP, and 69 percent of executives view IP as a legal issue. The survey found that protection of IP was a significant concern. The amount of IP being created in emerging markets was rapidly increasing, but “nearly two-thirds of respondents say IP protection in emerging markets is inadequate – and interviewees say critical IP is almost impossible to protect completely in some countries.”⁹

As more governments develop policies that threaten intellectual property, there will be less investment in technology research and development. Individuals and companies will not wish to spend the vast sums of money that are needed to create new products if they believe that the fruits of their labor will be taken away without sufficient, or any, compensation. That is one reason for the growing movement toward open innovation. The concept is to create new brands by licensing technologies from other companies around the world, and getting more out of the unused ideas from technology created within the company itself. This protects everyone’s intellectual property and encourages innovation in a cost-effective and productive manner.

Knowing the value of IP to the U.S. economy and the lack of adequate protection in many countries, one has to wonder why some members of the new majority in Congress would fail to safeguard one of the nation’s most valuable assets. A July 2 op-ed in *The Wall Street Journal* noted:

Henry Waxman and 34 other House Democrats wrote a letter to U.S. Trade Representative Sue Schwab late last month demanding that she rescind her decision to put Thailand on the “Special 301” Priority Watch List of nations violating intellectual property rights. Their protest demonstrates an uncanny instinct for getting things wrong – reducing important protections for trade and intellectual property on behalf of an authoritarian government installed by military coup, meanwhile damaging American companies working to cure HIV/AIDS, coronary-artery disease and other threats to world health. If their intervention is not rebuffed, it would also undermine the rule of law.¹⁰

In addition to failing to recognize the importance of protecting IP, many of these same members of Congress are refusing to enact legislation that would overturn the Supreme Court’s *Kelo v. New London* decision, which greatly enhanced the power of eminent domain.

This paper examines the challenges that face the United States government and governments abroad and the impact on taxpayers and consumers, as individuals and industry look to protect their personal and intellectual property.

Contributors to this report are Scott LaGanga, the PRA founder who has spoken on property rights extensively in the United States and abroad, and Solveig Singleton, Senior Adjunct Fellow at the Progress and Freedom Foundation, who is an expert on technology law and policy.

Mr. LaGanga explores basic principles of property rights, including intellectual property rights, as well as the impact of United States policy on the entire world. He also discusses the International Property Rights Index (IPRI), a groundbreaking measure of property rights around the world.

Ms. Singleton brings the intellectual property debate back home and describes the strengths and weaknesses of the Patent and Trademark Office (PTO). She also discusses five intellectual property myths and realities, four underlying problems with the PTO, and three options to help the PTO be more responsive.

In conjunction with Ms. Singleton's suggestions, at the very least, patent reform should focus on quantity and quality, minimize abusive litigation, seek international harmonization, and increase accessibility for individual inventors and small companies.

On July 19 and 20, respectively, the House and Senate Judiciary Committees reported out the Patent Reform Act of 2007, H.R. 1908 and S. 1145. The legislation would harmonize U.S. patent law with similar statutes around the world and make other far-reaching changes.

The importance of protecting personal and intellectual property rights cannot be overemphasized. From the expansion of eminent domain to the free software movement, the right to retain possession of and benefit financially from both forms of property is being threatened. Educating the public in regard to the value and importance of IP and personal property can help innovation flourish and economies thrive.

Protecting intellectual property is real, not theoretical. Consider the following American inventions and whether or not they would have come about in a climate of weak intellectual property protection:

- The telegraph in 1835
- The light bulb in 1880
- Air conditioning in 1902
- The transistor in 1947-1948
- Marshmallow Peeps in 1952
- 8-track cartridges in 1965

Part I

A Tale of Two Continents

By David Williams

America and Europe have two different visions of how to succeed in business. Europe does it without really trying, and America does it the old-fashioned way, by working hard and making higher quality and more desired products. This is particularly true in technology, which is one explanation for the European Commission's ongoing crusade against successful U.S. companies.

The European Commission (EC) is the executive branch of the European Union. The EC contains 27 independently elected commissioners, who then elect a president. The current president of the European Commission is José Manuel Barroso, and Neelie Kroes heads the Committee on Competition, a committee charged with creating and enforcing rules to guarantee a fair and free European market. Much like the United Nations, the EC has become entrenched in its own interests, one of which is to stop the spread of American economic influence throughout Europe. There are several prominent cases in which the EC has shown a complete disregard for intellectual property, antitrust laws, and court decisions in the U.S.

This protectionism was on display during the attempted merger of General Electric and Honeywell. Originally approved by the U.S. government, the merger was rejected by the EC in July 2001 because it was thought that the new company would control too much of the aviation market. When he announced the deal, John F. Welch, then-Chairman and Chief Executive of G.E., considered it a forgone conclusion that the merger would pass regulatory approval. Reacting to the EC's decision, Welch said, "The European regulators' demands exceed anything I or European advisors imagined, and differed sharply from antitrust counterparts in the U.S. and Canada."¹¹

The most egregious example of how the EC uses its power to affect business in the United States is its crusade against Microsoft. The EC began its antitrust investigation into Microsoft in 1999. It contended that by including its Windows Media Player with its operating system, Microsoft had an advantage over other manufacturers of media players. The EC also claimed Microsoft did not disclose enough technical data about its operating systems that would allow competitors to manufacture compatible programs.

Many of these arguments were addressed and resolved in the U.S. case against Microsoft. Citizens Against Government Waste (CAGW) tracked that case and monitored the \$30 to \$60 million cost of that litigation to taxpayers. The initial district court decision to break up Microsoft was overturned by the U.S. Court of Appeals. A consent decree was finalized in 2002, and still covers some of Microsoft's business practices; the decree expires in November 2007.

In June 2007, U.S. District Judge Colleen Kollar-Kotelly rebuked Google's attempts to join the Microsoft antitrust case with the company's complaints about the Windows Vista operating system. Google had filed a formal complaint with the Justice Department in November 2006 claiming that Microsoft's Vista operating system discriminated against users of Google's desktop search, and subsequently petitioned the court to be made a party to the consent decree. Judge Kollar-Kotelly rejected Google's Johnny-come-lately attempt to pile on and have its competitive conflicts with Microsoft adjudicated by government fiat. In fact, Microsoft will be making modifications to Windows Vista, addressing Google's concerns. Kollar-Kotelly stated that the interests of consumers are already fully represented by the plaintiffs in the case.

More importantly, since *U.S. v. Microsoft* was settled, technology has rapidly advanced on many fronts. The iPod has erupted in popularity, the Mozilla Firefox browser continues to eat into the market share of Internet Explorer, and Google is viewed by many as Microsoft's most serious competitive threat.

Rather than following the U.S. antitrust decision through what is known as comity for court findings, or acknowledge the rapidly changing technology marketplace, the EC decided in 2004 to ignore the U.S. consent decree and punish Microsoft for allegedly violating European antitrust laws. The EC required Microsoft to hand over valuable intellectual property, unbundle its software, and pay a \$612 million fine, the largest ever handed out by the EU at the time.

The penalties imposed by the EC are being appealed to the Court of First Instance; the decision is expected on or about September 17, 2007. In the interim, the failure of technology by government design is best illustrated by the dismal sales figures of the non-Media Player operating system (XP-N) mandated by the EC's decision. Total sales of XP-N were about 1,700 in 2005; no original equipment manufacturers ordered a single copy. Sales of the full Windows operating system in Europe were approximately 30 million. Market penetration of the EC-ordered XP-N version: .0057 percent. When governments decide what people should buy, the products do not sell.

The attack on Microsoft has been almost nonstop over the past four years. In May 2006, the company was hit again by the EC with a retroactive fine of \$357 million. It was particularly troubling that the EC issued such a fine for noncompliance with its previous requests for data on interoperability a week before the final deadline the EC had set for Microsoft to provide such information. Microsoft complained, with justification, that the EC kept moving the goalposts in terms of the detailed information it needed. The decision to impose the fine seemed to give the EC unprecedented power to dictate the terms of global competition and deny intellectual property protection to successful companies.

In March 2007, the EC threatened Microsoft with new fines over the price the company charges other vendors for interoperability information. The commission based its position on its view that "there is no significant innovation in these protocols." In essence, they were trying to force Microsoft to give away its intellectual property. The EC ignored an analysis by PricewaterhouseCoopers, which found that Microsoft's proposed prices for protocol information are at least 30 percent below the market rate for comparable technology. As time goes by, the EC's case against Microsoft appears weaker and weaker as the fines grow higher and higher.

The EC has also gone on the offensive against other successful American companies, including Apple and Intel.

In June 2006, the Norwegian Consumer Ombudsman filed a complaint against Apple for violations of that nation's consumer protection laws. The Norwegians alleged that Apple violated that country's law by refusing to allow MP3 players other than iPods to work with iTunes and not allowing songs purchased on other music mediums to work on their software.¹² France, Germany, Sweden, Denmark, Finland, and the Netherlands have all added to Norway's case, and later brought the "evidence" to the EC.¹³

Nearly 40 percent of Apple's \$9.6 billion in sales comes from outside the United States. Credit Suisse Group analyst Robert Semple projected that Apple could sell 309 million European iPods by 2009.¹⁴ The EC clearly wants to limit Apple's success and level the playing field for Apple's competitors, whose products cannot compete in the marketplace.

Another point of contention between the EC and Apple is pricing. The EC alleges that Apple only allows people to download music from iTunes in their country of residence. The EC claims this is a problem because the cost of downloading songs on iTunes is higher in England and Denmark than in other countries. The EC's complaint does not mean that Apple has an illegal monopoly; it alleges that Apple is cheating European consumers.¹⁵

In March, 2006, the French National Assembly adopted a copyright reform bill that would have outlawed closed digital rights management (DRM) technologies such as Apple's FairPlay, which runs the iPod. The objective was to protect free software. The legislation would have forced DRM developers to create open standards for their technology to allow software developers to add support. In other words, it would cause Apple to make its intellectual property available to competitors at no cost. Apple called the idea "state-sponsored piracy." The French Senate subsequently approved legislation that would allow companies to keep their trade secrets secure. One senator noted that such protection is not just for Apple, but also for start-ups in France.

The final law, which went into effect on August 3, 2006, allows French regulators to force Apple to make its iPod player and iTunes online store compatible with rival offerings. Regulators will set the terms for asking companies to open their formats to rivals. Much could also depend on the law's interpretation by the French courts, as well as the stance taken by recording companies.

Unfortunately for Apple and other technology companies, it appears that other European governments may follow France's example. Legislation or regulations to open up iTunes have been introduced in Britain, Denmark, Norway, Poland, and Sweden.

In 2001, the EC began an investigation into allegations that Intel forced PC manufacturers to use Intel chips. In July 2005, EC investigators raided Intel offices in two countries looking for evidence of antitrust violations. Despite the antitrust case against Intel brought by Advanced Micro Devices in the United States, the Europeans decided to conduct their own investigation. It was originally based on evidence from the Bundeskartellamt, the German consumer practices organization.

According to a July 31, 2007 article in *The Wall Street Journal*, "As with its continuing case against Microsoft, the Commission isn't responding to gripes from customers or consumers. The investigations were prompted by AMD, which has launched legal proceedings around the world against its archrival. This regulatory forum shopping includes a pending lawsuit in a federal court in Delaware filed two years ago."¹⁶ The same article noted that the fines could be 10 percent of Intel's global sales, or 3.5 billion Euros (approximately \$4.7 billion).

Other developments depict the problems facing U.S. companies in the EU. First, on April 24, 2007 EC Competition Commissioner Neelie Kroes told an American Bar Association conference in Washington, D.C., that more drastic remedies may be necessary for companies that the EC believes continue to abuse their market dominance, such as Microsoft. Kroes claimed that the EC had “never, ever before encountered a company that has refused to comply with commission decisions” and “may have to look for a more effective remedy” such as breaking up the company. Her claims were countered by U.S. antitrust enforcers, who continued to maintain that the EC’s actions against Microsoft were based on faulty economic principles.¹⁷

An April 26, 2007, *New York Times* article described a wave of mergers in the European Union, while noting the protectionist actions of individual countries and companies. The *Times* said “political leaders in France, Italy and Spain speak unabashedly about keeping national assets from foreign buyers.”¹⁸ The conservative new French president, Nicolas Sarkozy, has spoken of protecting “national champions” in critical industries. The former head of the Social Democratic Party in Germany, Franz Müntefering, referred to hedge funds and private equity investors as “locusts.”¹⁹

The only certainty in technology is progress, which can only occur without government intervention in the marketplace. The U.S. government and the competitive nature of its economy impose far fewer restraints on innovation than the EU. The EU makes it difficult to do business, while failing to respect antitrust decisions in other nations.

In the end, the EU continues to have an inferiority complex with the competition that streams from the United States. Attempting to pilfer Microsoft’s, Apple’s, or Intel’s intellectual property rights opens the door for other competitors who can’t succeed in the marketplace to tie up the courts and waste tax dollars bringing lawsuits against successful companies. The stakes continue to be high, and the effect of the EC’s various fines and decisions on innovation will reverberate throughout the world.

Part II

International Property Rights: Making the World a Safer Place to Live, Work, & Trade

By Scott LaGanga

The Significance of Property Rights

Property rights are the vital prerequisite for economic progress and prosperity. In many countries around the world, the legal right of ownership is taken for granted as individuals are offered choices in the manner by which they desire to utilize their property. Yet citizens of other nations often lack these same options, which are established upon principles of freedom and capital markets.

This lack of control over property can be due to a failed legal structure for the establishment of a right of property under the government and the lack of enforceability of such rights. Such a shortage of suitably established property rights and rules of law is detrimental to a nation's social and economic development, and, subsequently, its relations with other countries. Not only will a weakened structure lead to a consequent lack of trust in the legal property rights system, it also negatively influences foreign direct investment, which can otherwise aid development in many emerging economies.

Property rights are fundamental human rights. They do not belong to property; they belong to people who hold them with respect to property. The definitions of "property" and "property rights" as given by the *Encyclopedia Britannica* and *Merriam-Webster's Collegiate Dictionary*, respectively, are the following:

Property: an object of legal rights, which embraces possessions or wealth collectively, frequently with strong connotations of individual ownership. In law the term refers to the complex of jural relationships between and among persons with respect to things. The things may be tangible, such as land or goods, or intangible, such as stocks and bonds, a patent, or a copyright.

Property Right: a legal right or interest in or against specific property.

Eminent Domain – Finder's Keepers

Frederic Bastiat, a classic liberal French economist, said, "Life, liberty, and property do not exist because men have made laws. On the contrary, it was the fact that life, liberty, and property existed beforehand that caused men to make laws in the first place."²⁰ These were laws to protect the fundamental concept of private property ownership.

Eminent domain, which was once known as the "despotic power," was historically very limited and only used for public projects such as roads or schools. Federal and state governments seized private property for such public use and provided the owner with just compensation. However, this changed in 2005 after the Supreme Court's decision in *Kelo v. the City of New London*.²¹ Government at all levels now has the power to seize private property for private enterprises in order to increase tax revenue, stimulate economic development, or even assist in job creation. This liberal interpretation of eminent domain infringes on the most fundamental of rights and endangers property owners across the nation.

The *Kelo* decision had a unifying effect for the property rights movement, as many Americans began to realize their own personal property was under assault. They saw, perhaps for the first time, that property rights are a real and tangible asset, and that there are clear winners and losers when personal property is not adequately protected.

Following the *Kelo* decision, the Institute for Justice cited more than 10,000 cases of eminent domain abuse.²² According to the Reason Foundation, “over the last year, 47 states have begun reviewing their eminent domain laws, and 23 governors have already signed laws that restrict the use of eminent domain to varying degrees.”²³ Despite the passage of such laws, property owners everywhere must be aware that the right to private property is no longer as guaranteed as it once was under the Fifth Amendment to the Constitution.

Let the Taking Begin

Another major threat to personal private land ownership is the Federal Government Land and Building Ownership Act. The federal government owns 653,299,090 acres of land, yet Congress is constantly attempting to buy more land with taxpayer dollars. According to the Senate Homeland Security and Governmental Affairs Subcommittee on Federal Financial Management, \$25 billion is being wasted in unused federal property.²⁴ Most recently, the Wind Cave National Park Boundary Revision Act (S. 276), P.L. 109-71, will allow the government will purchase more than 5,900 acres of land, despite the current construction and maintenance backlog in the National Park Service (estimated at \$1 billion in 1997 with subsequent increases each year).²⁵

A Tale of Many Countries

In 2007, the Property Rights Alliance (PRA) released the first International Property Rights Index (IPRI). The IPRI is the product of a research program named after influential property rights advocate and economist Hernando de Soto, president of the Institute for Liberty and Democracy (ILD) in Lima, Peru. The IPRI categorizes countries on a scale of 1 to 10 (“1” being the weakest and “10” being the strongest protector of property rights) according to their strength and effectiveness in the defense of private property rights, both physical and intellectual. The IPRI measures levels of property protection using three variables: Legal and Political Environment (LP), Physical Property Rights (PPR), and Intellectual Property Rights (IPR).

The basic assumption behind the IPRI is that effective protection of private property translates into an increase in long-term economic well-being. The IPRI quantifies and ranks countries on various levels of protection. Implementing this tool as a base, estimates and projections can be made to determine a country’s likely path based on its policies toward property and economic development.

For example, China ranks 45th out of 70 in the IPRI and has an overall property rights protection score of 4.4.²⁶ The pro-China crowd will argue that this is a step in the right direction. Currently, Chinese citizens have private ownership rights to their homes (since 1990) but not to the land underneath them. Newer laws in China grant citizens longer control over the land, but not ownership of any type. Therefore, China could seize land at any point due to the residents’ lack of true ownership – there is no need other than to impose further regulation and control for China to exercise formal eminent domain. Based on historical perspectives and IP challenges such as high levels of copyright piracy, it appears China is opening the doors to trade and closing the windows on property rights. The government economic structure is one of exports and inputs, centering on trade, yet the social structure is such that

this system can occur without actually giving citizens further individual rights. The enforceability of copyright and trademark violations, such as pirated DVDs, footwear, and clothing is still amorphous.

However, China appears to be doing more to improve its international image with regard to personal property rights. The “Property Law,” which covers the creation, transfer, and ownership of property, was formally introduced at the National People’s Congress on March 8, 2007, and is scheduled to go into effect in October of this year. This law will “give peasants marketable ownership rights to the land they farm. ...If they could sell their land, tens of millions of underemployed farmers might find productive work. Those who stay on the farm could acquire bigger land holdings and use them more efficiently.”²⁷

In South America, Venezuelan President Hugo Chavez has established his own version of socialism and nationalism. Almost everything, from land rights to utilities, is under the sole control and ownership of the Venezuelan government. Not surprisingly, Venezuela ranks 66th out of 70 countries with an IPRI ranking of 2.9 out of 10.

Consider a 2001 movement called “Revolution for the Poor” that allowed the government to confiscate privately owned land judged to be idle or unproductive. Recently, the Chavez regime began seizing hundreds of thousands of acres of land owned by private firms and individuals. On the heels of his announcement that he will remain in charge until 2013, Chavez nationalized all forms of telecommunication. Viewing this as one more step toward a completely socialist regime, companies involved in trade, foreign investment, and external access to healthcare have fled the country and have no interest (as there is no incentive or a private market) in returning. Venezuela is the classic example of how nationalist protectionism and a complete lack of property rights protection leads to economic distress.

Economic Justification and Theoretical Framework

The implication that the North (more developed countries) has a greater vested interest in property rights protection is largely based on the fact that mean incomes in the North are higher than the South (less developed countries [LDCs]). Therefore, with this presumption as well as possibly a larger market for innovative products, it is not surprising that there lies a greater capacity for innovation in the North.

PRA research fellow Alexandra C. Horst concluded that those countries similar to LDCs that offer protection for innovators may increase the responsiveness of innovation of domestically produced and protected goods and services.²⁸ Top performing countries in the IPRI are among the richest economies in the world, thus supporting the claim that high levels of property rights protection (both physical and intellectual) are positively correlated to higher incomes. With a per capita income of more than seven times that of lower performing nations, the positive correlation between property rights protection and economic well-being is undisputed.

Intellectual property rights have a positive economic impact from the most to the least developed countries. A study of 95 countries from 1960 to 1988 found that strong patent protections “had a significant effect on growth in all cases, with the greatest effects occurring in both the high-income countries where the innovations were developed and those low-income countries where strong patent protections encouraged the importation and inward foreign direct investment of innovations.” A study conducted in 2004, which examined 80 countries over four time periods from 1975 to 1994, confirmed these findings.²⁹

Despite the anti-trade advocacy that emerged in the mid-1990s and outdated dependency theory from the 1970s that was resurrected around the same time (two theories that advocated that Third World poverty is a cause of colonialism and there is no solution except greater financial aid), property rights advocates argue that the surest route to poverty alleviation continues to be economic development and trade liberalization. Increased transparency, global trade, and access to foreign markets through export-led growth make developing economies an attractive place to do business. However, multi-national corporations may be wary of investing in a country if that country does not have open and explicit efforts to protect private property. Therefore, the establishment of a domestic infrastructure dedicated to the protection of private property is the only way to guarantee stable and sustainable growth.

However, it is important to note that having a large market is not by itself a condition for a government to grant stronger patent protection. Economic modeling shows that the optimal patent strength in a closed economy still remains independent of market size. This occurs because both the marginal benefit of stronger protection and the marginal costs associated with the distortion are proportional; the supply elasticity may remain the same or even decline as more resources are employed in the R&D process.³⁰ The role of market size in generating different incentives has much to do with the relative effectiveness of a nation's policy instruments. In an equal model between two countries, since patents generate deadweight loss in countries affording greater intellectual property rights protection, the country that can more effectively stimulate innovation with a given strengthening of its patent protections will have an incentive to provide stronger protection.

The optimal patent policy is found by equating the sum of the extra deadweight loss and the extra consumer surplus loss that results from expanding the fraction of imported goods.³¹ This condition depends on a country's individual policy and global stance on property rights. Sound infrastructure, government transparency, and a liberalized economy are required to achieve optimal conditions.

Why Intellectual Property Must Be Protected

Government control of personal property, such as land through eminent domain, is not the only type of personal property infringement. Through legislation, regulation and litigation, the U.S. government continues to play a role in the life of the individual property owner. Unfortunately, these same tactics are being utilized and dictated in the arena of intellectual property usage. The United States Patent and Trademark Office (USPTO) defines intellectual property as:

Creations of the mind – creative works or ideas embodied in a form that can be shared or can enable others to recreate, emulate, or manufacture them. There are four ways to protect intellectual property – patents, trademarks, copyrights or trade secrets.³²

Once a domain mainly considered by the affected investors and companies, public interest in intellectual property protection has risen substantially as the vast majority of the world is now affected by its success or failure. As the Shapiro/Hassett study found, “The value of the ideas and innovation that the U.S. economy generates is more than \$5 trillion a year, roughly 42 percent of the country's gross domestic product and far more than any other nation's GDP...”³³ Finding it hard to avoid, consumers realize that IP is not only about patents, copyrights, and movie piracy, but also that IP protection incorporates counterfeit pharmaceuticals and imitation manufactured products, ranging from automotive to aeronautical parts, that can affect one's health and safety. The implications surrounding purchasing a fraudulently produced designer handbag off the street, only to watch the stitching unravel immediately after use, applies to car and plane parts as well.

Imagine the destruction associated with an entire airplane company that outsourced purchasing to a third party supplier who unwillingly purchased faulty, black-market airplane parts, only to realize post-installation that the “stitching was unraveling” mid-flight. The same is true in the area of healthcare, where AIDS drugs and other life-saving prescriptions, if not protected and their intellectual property rights enforced, will begin to “unravel” and become increasingly harmful to consumers.

Efforts must continue to protect IP both domestically and abroad. International regulatory bodies such as the World Trade Organization (WTO) must not allow member nations to abuse regulations meant to protect international commerce and IP rights. Specifically in America, knowledge is a great economic asset. It is unseen, influential, renewable – and vulnerable.

Piracy and theft of intellectual property cost the United States an estimated \$250 billion and 750,000 jobs per year.³⁴ With such a large niche in the market, American businesses and international firms are closely guarding their IPR through trade secrets. The lax enforcement of rules and regulations regarding IP protection internationally has led to a dangerous trend for countries to take advantage of loopholes in current IP legislation for their personal advantage. The abuse and misuse of international standards, such as Articles 30 and 31 of the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement, by countries such as Thailand and Brazil, result in a global trading system where suppliers are afraid to enter due to compromised standards and slipshod enforcement. By manipulating international laws and failing to protect IPR, these countries are not only hurting the parent company that produced these goods, but also poorer countries that desperately need help may not receive it in an insecure market.

Thailand – Drifting into Dangerous Territory

TRIPS violations are currently being examined as a result of the reckless actions of the Thai government. As of February 2007, Thailand has issued compulsory licensing (CL) for several patented drugs.³⁵ In addition, the government claims it will import or manufacture several patented drugs that treat AIDS and other illnesses using CL to get around paying any costs to the patent-protected producer. This type of international patent violation cannot go unchecked.

Those who contend that Thailand is operating lawfully under the TRIPS guidelines do so using the following arguments:

- Thailand is well within rights on the basis that TRIPS has no limitations whatsoever on the grounds under which a country may issue a compulsory license, and
- Human health should trump intellectual property.

To dispel such myths, it is necessary to outline why Thailand is in violation of the TRIPS Agreement :

- Thailand did not make efforts to obtain authorization from the proper holder of the patent (Abbott Labs), thus violating Article 31 of TRIPS.
- *The Wall Street Journal* reported on July 2, 2007, that 80 percent of software sold in Thailand is pirated, along with 60 percent of motion picture works and 50 percent of records and music, according to the International Intellectual Property Alliance report.³⁶

- The TRIPS agreement states that consultation requirements may be waived in event of national emergency or extreme urgency. However, AIDS issues have been prevalent and ongoing for decades and are not considered a threat to Thailand. Thailand's AIDS population is relatively low compared to the rest of the world.³⁷
- Thailand's use of the compulsory licensing in this case is allowing the government to intervene for the private economic benefit of Thailand in matters that should be regulated by the market.

If Thailand receives a “pass” on a CL issue that directly violates the nation's TRIPS agreement with the WTO, then the door is open for other countries, perhaps even rogue nations, to claim CL for their benefit.

Article 30 of TRIPS states that there are “limited exceptions” to the protection of patents, which may be accepted if they “do not conflict with a normal exploitation.”³⁸ Thailand, however, shifted spending from healthcare to the military, then used CL to get out of paying for patent rights, which is above and beyond normal exploitation. This behavior is not uncharacteristic of Thailand. Using the IPRI, Thailand is ranked 32nd out of 70 countries, with an overall score of 5.4 out of 10.³⁹ Even more troubling, their IPR score is 4.4 out of 10, further illustrating that empirical data is useful in predicting dangerous trends and patterns.

Given Thailand's IP record, the country's behavior must be checked by the entire international community, not merely the United States. The central issue here is whether or not the WTO is prepared, as a global governing trade body, to enforce sanction violations or not. If the WTO is unable or unwilling to do so, then a dangerous precedent is being set for nations to disregard IP laws and subsequently harm the global economy.

If Thailand was, as the anti-IP crowd states, using Article 31 for “public noncommercial use” of AIDS medicine, then, under current Thai law, the drugs would be provided on monopoly-like basis by Thailand's heavily controlled and closed Government Pharmaceutical Office. But they are not. Allowing Thailand to get away with its actions will create a “slippery slope,” where cures for real epidemics may not reach Thailand or other countries.

International pricing of drugs should not be regulated by any single government, but rather determined by optimal market functions as a result of command economies using supply and demand modeling.

Brazil – A Dangerous Game of “Follow-the-Leader”

Following Thailand's ill-advised actions, Brazil recently issued CLs that will allow for the importation of a cheaper version of a patented AIDS drug. Merck offered a 30 percent reduction of the price of \$1.59 per tablet; the Brazilian government did not feel this was “affordable.” The fact that the WTO is allowing countries to decide what is an acceptable price to pay for a product or service will lead toward isolation and stagnation. In a global trading system, security and trust goods are the life line that commerce flows upon. Brazil had no justification to reject Merck's offer. A company spokesman said in response, “As the world's 12th largest economy, Brazil has a greater capacity to pay for HIV medicines than countries that are poorer or harder hit by the disease.”⁴⁰

If unchecked, countries will use CL to obtain drugs each time the price is deemed “too high.” There are great implications for US-based drug companies, which last year spent \$55.2 billion on risky and costly research and development (R&D).⁴¹ Brazil, a middle-income country with a ranking of 42nd and an overall score of 4.5 in the IPRI, must not be allowed to continue on its course. If the WTO does not strictly enforce Article 31 of the TRIPS Agreement, R&D and further work to develop expensive but life-saving drugs (primarily used by LDCs) could slowly come to a halt.

Africa – Population at Risk

Beyond the dangerous trends of middle-income countries using CL to obtain medicine without actually paying for it is an even bleaker picture. Neither Brazil nor Thailand, two countries using CLs to obtain AIDS drugs, have an AIDS epidemic, the disease affects less than 30 percent of the population). If drug companies pull out of such nations, their residents will be left without access to life-saving medicine. If this continues to happen, large pharmaceutical companies are going to terminate efforts on research, development, and clinical efforts to combat diseases mainly found in less developed areas.

Consider Africa, where Ethiopia has an IPRI ranking of 68th out of 70 and an IPRI score of 2.7.⁴² While Thailand’s AIDS population is decreasing, Africa’s is increasing exponentially, with more than 60 percent of the entire continent infected: This is an epidemic. If the actions of countries such as Brazil and Thailand are not stopped, efforts to help mid-income nations, and, more importantly, LDCs, could start to shrink. While Brazil and Thailand could seek assistance elsewhere, or pay for medicine, African countries have no other options.

iPod, IP, EU, DRM...and other jargon

Perhaps one of the best-known issues surrounding the protection of IPR has to do with patents: more specifically, digital rights management (DRM) and Apple iPod. DRM is a systematic approach to copyright protection for digital media. One of the purposes of DRM is to prevent illegal distribution of patented content over the Internet. This was developed in response to the rapid increase in online piracy of commercially marketed material, which proliferated through the widespread use of Napster and other peer-to-peer (P2P) file exchange programs.⁴³ Apple uses DRM to place “secrets,” if you will, inside a music file, and “keys” inside the iPod to unlock these secrets. Therefore, if the music is stolen and attempted to be played on any device, the user will not have the appropriate “key” to unlock the file, making it worthless.

IP issues are at the core of Apple’s DRM dispute with the European Union and France in particular. Apple does not own control over the music itself; it must license the right to distribute the music from the parent companies that control the IPRs. When Apple approaches these companies to license their music for online distribution, they require Apple to protect their music from being illegally copied. The solution was to create a DRM system which places each purchased song from iTunes in protected, embedded software so it cannot be played on unauthorized devices. The catch for Apple was that if the secret software’s security was violated, the company would have a small window of time to fix the problem or the music companies would pull their supply. Therefore, without DRM, or if digital rights are violated and music companies pull out, millions of Apple users will lose the supply that they counted on by trusting a secure and patented product. This is what the anti-DRM and EU crowd are pushing for, without understanding that digital rights protection is required by music companies to secure profits. If they were removed, there would be no iTunes and no iPod because music companies would not license their content to Apple.

According to Apple CEO Steve Jobs, consumers purchased 90 million iPods and 2 billion songs from iTunes in 2007. That equals 22 songs purchased for every iPod sold. The most popular iPod can store 1,000 songs. Therefore, less than 3 percent of the music on the average iPod is purchased from iTunes and protected by DRM. It is unlikely that in the modern age of free markets and consumer-driven capitalism, 3 percent of the music on the average iPod is enough to lock users into buying only iPods. Furthermore, since 97 percent of the music was not purchased by iTunes, iPod users are clearly not locked into using the iTunes to acquire all of their music.⁴⁴

France's new law is not pro-consumer or justifiable; rather, it is an attempt to place electronic distribution and consumer choice under the umbrella of the government. While France's actions are inconsistent with IPRI data, under which France ranks 19th out of 70 with an overall IPRI score of 6.7, the nation's restrictions on IP rights will undoubtedly be reflected in the 2008 IPRI.

The only justification of government involvement in public policy is in the case of a market failure. Conditions necessitating government intervention due to market failure include: to correct for information asymmetries, provide a public good, redistribute wealth, and break-up monopolies. Thus, because Apple consumers have a choice of whether or not to buy Apple products, regulatory policies should not exist that attempt to define the market or determine business models.

Macro Control Levied on Microsoft

Well before Apple introduced the iPod, similar issues involving interoperability and antitrust rulings were brought forth against the computer giant Microsoft by the European Commission (EC).⁴⁵ The EC fined Microsoft \$613 million and ordered the company to offer a version of its Windows operating system without Windows Media Player. Analogous to the claims of France that Apple "locked" users into using iTunes with their iPods, the EC concluded that Microsoft broke anti-competition laws by leveraging its "near monopolistic control" on the personal computer operating system markets to gain a comparative advantage in the market for media players. Furthermore, the EC stated that Microsoft must disclose all details of the software interfaces used by its products to communicate with Windows in efforts to develop fair competition.

Consider this scenario: a small start-up company is competing with other companies for a niche in a certain market. The smaller company uses a different marketing strategy and suddenly pulls ahead. According to the EC, this is an unfair practice and the smaller company should be forced to disclose their "secret strategy" so the market will be fair. This type of precarious precedent infringes upon the basic fundamentals of a supply and demand free market. By attempting to dictate corporate business models, more and more companies will pull out of the EU and consumers will be left with fewer choices. Those believing this flawed logic assume, first, that competition is a bad thing, and second, that regulating interoperability attempts to redefine a corporation business model and prohibits those who are "noncompliant" from doing business in that country.

Thus, regulatory policies prohibit the consumers from having access to a product supplied through the open market, as well as prohibiting the more fundamental principle of consumer choice. But even more astounding is that the fine was, at least in part, imposed for activities expressly permitted under the agreement that Microsoft reached just three years before the EC ruling with the U.S. Department of Justice and affirmed one year after that by a federal district court.

Two Roads Diverged...The Future of Property Rights Protection

Like the famous Robert Frost poem, a proverbial set of roads are splitting with regard to the future of property rights protection. One is the road most traveled, utilized by the United States, Germany, New Zealand, Nordic countries, the United Kingdom, and many other industrialized nations. This is the path of commerce, development, and free trade. At the end of this road are prosperity and economic growth, a higher per capita income, foreign direct investment, and international trust. The other road is the “path less traveled.” However, this path is starting to become more and more well-worn by ill-advised countries. Bolivia, Brazil, France, Mexico, Pakistan, Romania, and Thailand have taken the “wrong path” with respect to property rights protection.

These roads must converge in order for the global trading system to continue to grow, and, more importantly, to ensure international property rights protection and help those individuals who need aid the most. Creating new rules and regulations that define markets and attempt to direct corporate policy is not the way forward. Promotion of standards and enforcement of current rules and regulations by the WTO as well as the United States and the EU standing together is the only way to assure that countries that violate property rights are prohibited from engaging in trans-border trade. The WTO must begin to examine and actively pursue compliance in regions and countries that violate the TRIPS Agreement and abuse compulsory licensing as a necessary precursor to any future trade agreements.

The Path Less Traveled – Property Rights Threats

Nations that choose to protect property rights do so for a variety of reasons. Russia, for example, hosted an international forum this past June to discuss violations of intellectual property rights which cost businesses and the government billions each year. However, one can not be certain if the country’s attempts are genuine. With a focus on bringing capital to the region, the Russian government stated, “Russia...seeks to give foreign investors the most favorable conditions possible. We are constantly improving our system of property rights protection, including intellectual property rights. Our economy is open to foreign investment, including in infrastructure and in the electricity sector.”⁴⁶ The statement also addressed the need to protect IPR and amend laws and enforcement procedures, citing them as issues concerning the WTO.

The move toward protection is a step in the right direction. However, this says nothing about the lack of personal property rights and the adverse legal and political environment – the backbone of proper enforcement. The IPRI gives Russia an overall score of 3.2, ranking 63rd out of 70 countries. Furthermore, its PPR score is 4.2, IPR score is 3.7, and LP score is 1.9 (tied with Pakistan for the second lowest LP score, only ahead of Bangladesh with 1.5).⁴⁷

Given the immense economic incentive to join the WTO, the hosting of the 2012 Winter Olympics, the lack of legal structural reform, lax enforcement, and continued personal property rights abuses, Russia is not close to where it should be. Using empirical data and quantitative sources like the IPRI, despite Russia’s conferences and appearance of property rights reform, there has been little in “actual” reform to affirm such claims.

Yet while the pitfalls of Brazil, China, Russia, Thailand, and Venezuela have been discussed, they are not the only nations threatening intellectual property rights:

- Argentina still does not provide adequate protection against unfair commercial use of undisclosed test and other data submitted by pharmaceutical companies seeking marketing approval for their products.⁴⁸
- Belize continues to have issues concerning the ability and willingness of officials to seize counterfeit and pirated goods, as well as the nationalization of telecommunication industries.⁴⁹
- Egypt has continuing deficiencies in its IPR enforcement, a problematic judicial system, and the lack of protection against unfair commercial use of pharmaceutical data.⁵⁰
- India needs to increase efforts to strengthen copyright laws and the law enforcement system.⁵¹
- Israel, Lebanon, and Turkey must boost efforts concerning the protection of cable television, pharmaceutical data and patents, and pirated software, music and movies, both on the enforcement and judicial fronts.⁵²

As noted by their corresponding IPRI scores and rankings, it is no surprise that the aforementioned countries must continue to be observed and pressured by the WTO and the U.S. to reform and protect personal and intellectual property rights.

Leading the Way – The Path Toward Progress

The future of property rights protection is not all plagued with dishonesty and corruption. As the world becomes smaller, leaders are realizing that openness and transparency are the keys to successful global integration and poverty alleviation. Thus, the strategic framework that follows consists of property rights protection legislation and other methods to ensure that those who wish to engage in commerce without fear of losing their IPR will have the confidence and protection to do so.

Several countries disenchanted by a complete lack of WTO enforcement have taken the necessary measures domestically to ensure that property rights violations do not continue. Not surprisingly, some of the following countries have relatively high rankings and scores on the IPRI, thus providing further support that assessments based on quantifiable data are the best indicators for directing policy and predicting trends.

A Brussels court ruled against an internet service provider (ISP) in a lawsuit brought by SABAM, a Belgian group responsible for collecting royalties due to performing artists. The ISP, much like Napster, was charged with distributing copyright protected music illegally. SABAM claimed this was the “first such successful judgment of its kind in Europe.”⁵³ Just as Thailand’s use of compulsory licensing creates a negative precedent, the Brussels court decision is a positive precedent for other EU countries.

In Burkina Faso, the Ministry of Culture, Arts and Tourism and the Copyright Office held a three-day meeting to discuss anti-piracy strategies against the more than 10 million pirated cassettes that enter the country each year. For an area rich in local and pan-African tribal music, the influx of pirated commercial music has had a devastating impact on youth culture. At the end of the three days, more than 17,000 pirated compact discs seized by the government were destroyed. Small countries like this often lead the pack in reform.

Estonia is working with non-governmental organizations to track and enforce IPR infringements. Optical disc regulators in Indonesia have worked with a local Motion Picture Association of America consultant to draft new legislation and procedures for production facilities to decrease vulnerability. In Paraguay, new laws and the establishment of Specialized Technical Units to combat copyright piracy have led to the closure of 56 illegal importing companies and the cancellation of 73 import licenses. Efforts to combat IPR violations by middle-to-low-income countries such as these are proof that incentives exist for leaders to choose the right path and that abusing trade agreements such as TRIPS and allowing private property violations to continue is not the way forward.

Global Cooperation, the Only Way Forward

There have been propositions of more laws, more regulations, tougher sanctions, “umbrella organizations,” global IP policing...and the list goes on. However, there are laws in place, regulations do exist, and there is a regulatory body. While these measures exist, they are not properly utilized.

The solution to protecting IPR must entail a comprehensive global plan incorporating education, cooperation, coordination, legislation, and enforcement. Regardless of knowledge, if the tools and options are not available to world leaders and policy makers, education will not make more than a marginal impact. The establishment of an ongoing public/private sector partnership at the global level that consists of global institutions and representatives from the private sector is the foundation of a stable and sustainable plan of action.

Part III

Defining Markets In Innovation: A Closer Look at Intellectual Property

By Solveig Singleton

The world economy is changing. Traditionally, most wealth is tied to physical capital – land, machines, and equipment. More and more, however, wealth is created in the form of intellectual capital – designs, knowledge, and innovation. The ground rules that turn intellectual capital into bundles that can be traded or licensed are defined by intellectual property law. Intellectual property is bought and sold around the world in the form of patents and patented products, copyright licenses and works, and trademarks.

But is intellectual property really property? Physical property – cars, screwdrivers, stoves, cows, and so on – is different in many ways from a formula for a new medicine or from a song. Many people do not “feel” that copying a song without paying is stealing because it does not deprive the creator of his copy; however, even if a significant number of people do so, it deprives the songwriter of his livelihood. Some have argued that physical property and intellectual property are so different that we should not think of IP as property as all.

But there is one central similarity. Producing wealth in the form of intellectual capital is hard work, and requires investment. Just as with physical property, therefore, intellectual property must be protected to sustain the creation of intellectual wealth. Copyright, patent, and trademark rules benefit consumers as well as creators.

As countries seek to establish the rule of law to protect open markets, intellectual property should be protected as well. A sound system of intellectual property requires institutions to establish and publish the law, to adjudicate disputes, and to enforce judgments. The government is involved in defining the legal rights in question (patents, copyrights, or trademarks) but after that, for the most part, steps out of the way. The rights can then be sold or licensed in the market, just like physical goods. “Regulation” in the sense of price control and restrictive license terms, along with other day-to-day intervention into the marketplace, should be avoided.

Many disputes can be handled through the private sector, through civil lawsuits or arbitrations initiated by private parties, not by public prosecutors. This is desirable because defining and enforcing rights in ideas can be slippery, especially as compared to physical property. Letting rights-holders shift all of the costs of enforcement onto the public sector might encourage them to support configurations of rights where the costs outweigh the benefits. Private-sector dispute resolution may also be helpful in some countries in bypassing well-established corruption in public courts or prosecutors. But some public sector enforcement is called for to combat intellectual property crimes tied to terrorism or other criminal enterprises, or for counterfeiting.

In the age of the Internet, the enforcement end of protecting intellectual property has become increasingly difficult. This is particularly true for copyrighted works. Even in advanced economies, public and private lawsuits are too expensive and too slow to stem the tide of millions of illegally copied works. Addressing this problem should be an important goal of the intellectual property system going forward. Effective enforcement institutions should be developed to enforce the law evenly and fairly, replacing the current pattern of bringing token suits, sometimes with unduly harsh penalties, against a tiny percentage of individual offenders. Technology such as digital rights management can also help maintain copyright.

Four Intellectual Property Myths

1. Myth: The price of information and ideas should be zero because products should be priced at marginal cost.

Reality: Economists reject marginal cost pricing because such policies destroy investment.

2. Myth: Intellectual property rights result in information and ideas being “locked down” by their owners.

Reality: The creators of art, books, movies, and inventions want their creations to reach as many people as possible, so long as they are compensated.

3. Myth: Intellectual property rights are monopolies that give their owners too much economic power.

Reality: Patents or copyrights support competition by encouraging inventors and creators to enter new markets; IP gives its owners no more economic power than any other asset.

4. Myth: Intellectual property rights benefit big firms at the expense of “the little guy.”

Reality: Patents are often the best protection that a small inventor has against large firms; copyright benefits creative ventures of many sizes, from solo musicians to big studios.

The Patent System: When Government Defines the Market

With both physical and intellectual property, governments must “do something” at some level to support markets. A market for vegetables could not be set up if vegetable bandits could roam through and steal at will; markets for land benefit from registries of title and liens. It is usually not very difficult, though, to define what is being sold in markets for physical property. Long before democratic governments passed statutes creating the modern state, farmers, leatherworkers, ceramists, and smiths sold their goods in thriving markets. As intellectual capital becomes more important and innovation takes off, the goods being sold are often intangible, abstract and harder to define. Special institutions like the stock market have been created to support markets in advanced economies. The establishment of a patent office is such a necessary regulator. Special courts to hear patent cases may be created as well.

The difficulties with defining rights in intangibles can have serious consequences for the markets they create downstream. If patent rights are defined too narrowly, inventors are discouraged because imitators can too easily capture most of the benefits from their invention. If patent rights are defined too broadly, inventors and ordinary businesses are discouraged because everything they do seems to get them into trouble with patent lawyers. Complicating matters further, a set of patent rules might work well for years with one sector of the economy such as aeronautical engineering or pharmaceuticals, but might not work well for another sector, such as software or computer hardware.

Lawmakers are unlikely to get the rules right from the start. On the other hand, it might not work for legislators to frequently revise the rules, because this opens the door to legislation that favors special interests, or invites sudden, drastic changes that undermine certainty. Interpretations of the rules by the patent office, by national high courts such as the United States Supreme Court, and by courts that specialize in patent decisions are thus very important. It is a critical part of establishing the rule of law and rights in this area to pay attention to factors that tend to support more effective institutions. The section below focuses on the special problem of bringing a government-run patent office to a higher level of function.

Trouble at the Patent Office

Patent law describes what a patented innovation ought to look like, and patent examiners employed by the patent office decide which innovations ought to be patented. Traditionally, patent examiners are government employees. Herein lies a special problem. Government agencies are in many ways less accountable than private firms. If a private firm is not well managed, it will go bankrupt. Government agencies cannot go bankrupt: so long as they are supported by taxpayers, there are almost no consequences to individual bureaucrats or to bureaucracies for failing. As a result, bureaucracies are known for problems with low productivity, low morale, difficulty in attracting top performers, the ineffective use of technology, waste, and, sometimes, corruption.

These problems tend to plague all bureaucracies. (The military is a possible exception, but, then, the military is also something of an exception to the rule that government agencies lack accountability, for if the military is too inefficient, there is the possibility that its officers will actually be killed – the ultimate accountability). But insofar as such problems plague the patent office, their impact is likely to be felt more throughout the economy. Many government agencies impose regulations on top of an already functioning market: consumer protection rules or labor regulations, for example. The market would continue to function, perhaps even better, if the agency stopped doing its work entirely. This is not true of the patent office, however, which defines the rights that are bought and sold in the market. Making matters worse, technical, economic, and philosophical problems raised by cutting edge technologies raise challenges at patent offices on a continual basis that many other agencies face only on an occasional basis.

Here are four widely acknowledged difficulties at the United States Patent and Trademark Office:

- 1) Inadequate funding, partly stemming from the depletion of funds raised from patent fees by the legislature for other purposes (unrelated to the patent system).
- 2) Obsolete technology, especially information management technologies used to weed out weak patents.
- 3) Poor labor/management relations, high turnover, and low morale.
- 4) Meaningless, limited, or distortive measures of patent quality, agency productivity, and individual examiner productivity.

These problems, of course, are interrelated in complex ways. Solving the funding problem can theoretically help update technology and improve salaries and morale. But only in theory. Several studies suggest that money allocated to the USPTO to build new databases for helping examiners with their researchers has been misspent.⁵⁴ One key goal of the research is to identify “prior art,” older technology related to innovations for which patents are being sought. In some new fields, like software and business methods, much of the “prior art” is not patented or written down in scholarly journals. If patents in this area (or many others) are issued without citing non-patented prior art, it is a sign that the examiners have missed something significant. But most issued patents do not cite any non-patent prior art. Indeed, the USPTO does not bother to keep records of this key information.

The measures of productivity that the agency does use cause significant problems in themselves. USPTO examiners are given, at most, two “points” to measure productivity. One point is awarded when they make their first key decision with an application (called an “office action”); a second point when they make their second. To get the most points, therefore, the patent examiner has reasons to always 1) reject the application and 2) accept it when it is submitted the second time. If he accepts it at stage 1), he will earn no more points from that file. If he rejects it again at stage 2), he will earn no more points from the file.

While there is widespread agreement that these problems at the USPTO exist, experts differ as to the extent and significance of downstream effects on markets and the economy. For example, for some sectors of the economy (software, for example) the sheer number of patents being granted is troublesome. A single device, such as a printer, might implicate hundreds of patents. This is partly because of insufficient screening and poor access to prior art at the patent office. To make matters worse, the courts have not always interpreted patent law in a way that “fits” well with the software sector of the economy (for example, by requiring that the details of software functions being patented be disclosed). But some have argued that the majority of these patents are not in fact a problem at all so long as they are not enforced. And some of the changes to patent law or institutions being contemplated as a solution to this problem do more harm than good.

In spite of all these difficulties, the patent system can and does spur innovation. The strongest empirical evidence for this is the growth in pharmaceutical research in the United States since the 1970s, when the patent system was strengthened. Patent system problems are well worth trying to solve.

Solutions at the Patent Office and Beyond

The difficulties with the United States Patent and Trademark Office described above are not unique, though not all patent offices worldwide experience these problems in the same degree or at the same time. Extensive reforms at the patent offices in Britain and Japan in the 1980s, for example, have apparently succeeded in bringing the patent offices there to a higher level of function, albeit not entirely. Even at a “model” patent office, the average claim takes several years to resolve. It is doubtful whether a private firm in the business of assessing the legal status of a new invention could stay in business with such a slow response time.

The questions of whether such problems can be fixed, therefore, and how to do so are important ones. There are essentially three options:

- 1) Making the agency just plain better, so that it lacks the typical negative characteristics of a government agency. Desirable reforms here would include:
 - Improved search technology;
 - Improved productivity measures for examiners; and
 - Improved quality measures for patents.
- 2) Figuring out how to incorporate market forces in a patent office through privatization, partial privatization, or other mechanisms, such as:
 - Allowing the patent office freedom from public sector labor constraints;
 - Ensuring that the patent office can keep the money it raises from fees; and
 - Allowing the growth of firms in competition with one another to vouch for and audit patent quality.
- 3) Designing other patent institutions (legal standards, courts, private institutions and market mechanisms) to compensate for dysfunction at the patent office, such as:
 - Allowing several additional courts to hear patent appeals, rather than centralizing patent decisions in one type of specialized courts;
 - Instituting the “loser pays” rule to discourage weak suits; and
 - Avoiding rules that make it hard for alleged infringers to challenge the validity of patents, such as the U.S. rule that the validity of a patent may only be overruled by clear and convincing evidence, even when the patent examiner did not consider the issue.

The most successful model for improvement so far seems to be Switzerland, which used option 2 in partially privatizing its patent office some years ago. The Swiss patent office is now financially independent, with protection from legislative raids on its funding. By contrast, though USPTO raises money from fees, Congress may channel these off for other purposes. Additionally, the Swiss organization has been freed from the restraints on hiring and salaries that typically burden government agencies. Delays are down, and other problems have been reduced as well. Even so, it remains very difficult to measure agency performance on matters like patent quality. Working on using market mechanisms like auctions to help with this problem, option 3, is just beginning.

Patent Reform Legislation

On July 19 and 20, respectively, the House and Senate Judiciary Committees reported out the Patent Reform Act of 2007, H.R. 1908 and S. 1145. The legislation would harmonize U.S. patent law with similar statutes around the world and make other far-reaching changes. Perhaps the most important change is the shift from granting patents on a first-to-invent basis to a first-to-file basis. Traditionally, patent priority was given to the person who could prove he was first inventor, even if he did not file for a patent right away. The Patent Reform Act would give priority to the party that files for the patent first, not the party that first came up with the invention.

Supporters of the legislation claim this change will increase the clarity and certainty of the patent process. In the past, patent filings required expensive and time-consuming investigations to resolve conflicts between inventors who filed at different times while both claiming to be the first to come up with the invention. By speeding up the patent process, proponents claim first-to-file will save the government money and get new ideas into the hands of consumers more quickly.

Another change expands the definition of inventor to include joint inventors and co-inventors. This allows people other than the inventor to file for a patent, even if the inventor is not on board. Presently, many of the most important inventions arise from the efforts of many people and not just a single inventor; the new law will ensure the patent process will respect the rights and interests of all parties concerned.

In addition, the new legislation will bring balance to the awards plaintiffs receive in successful patent infringement lawsuits. Current law provides effectively unlimited damages, even if the lawsuit is frivolous. The Patent Reform Act will allow a plaintiff to recover damages based only on the value of the patent relative to “specific contribution over the prior art.” That will reduce the amount of the potential award.

The legislation must be voted on by both the House and Senate and then be considered in a conference committee to resolve differences before it can be signed into law.

Part IV

Conclusion

In 1952, A.S. Douglas wrote his Ph.D. at The University of Cambridge and created the first graphical computer game. Using an EDSAC vacuum-tube computer, he managed to develop a computer version of Tic-Tac-Toe.⁵⁵ This simple idea started a video game revolution that boasted sales of more than \$13.5 billion in 2006, part of the hundreds of billions of dollars in sales from IP-related products in the U.S.⁵⁶

The lack of respect for intellectual property rights has fiscal implications for taxpayers in America and abroad. DOJ's pursuit of Microsoft cost taxpayers between \$30 and \$60 million while having a chilling effect on how entrepreneurs proceed with their ideas. European innovation is at risk as bureaucratic interference expands and searches for new targets. Government growth comes with a price tag.

Although tangible property and intellectual property are not completely compatible, their protection is essential to creating wealth and advancing economic growth. While personal property has long been secured by common law, the first reference to protecting IP goes back to 500 B.C. in the Greek colony of Sybaris, in Italy. That country was also responsible for the first known patent statute, which was enacted in Venice in 1474.⁵⁷

While that law provided for many of the same concepts as today's IP statutes, including the use and embodiment in physical form of a creative idea, times and circumstances are just a little different. The digital age presents new challenges to long-established principles.

It is already difficult enough to develop new technology without having to be concerned about the harmful IP policies of various countries. The cost of bringing a successful pharmaceutical drug to market is more than \$800 million, or 10 times more than it was 10 years ago. Delays in drug approval and the looming competition of generic drugs mean that a new drug's life cycle is shorter.

Some countries have encouraged their generic drug industry to create products that brand name companies consider to be in violation of their patents. On August 6, 2007, an Indian court upheld a 2005 patent law that allows a drug to be patented only if it is "a new invention or a significant improvement to an existing one."⁵⁸ The court rejected an appeal from Novartis, seeking to patent a modified form of the leukemia drug Gleevec, on the grounds that it was insufficiently distinct from the prior version. Novartis claimed that the ruling would dissuade innovation and reduce investment in improvements to drug companies' products.

In particular, as more governments develop policies that threaten intellectual property, there will be less incentive to invest in technology research and development. Individuals and companies will not wish to spend the vast sums of money that are needed to create new products if they believe that the fruits of their labor will be taken away without sufficient, or any, compensation.

Even consumer products are getting more costly. Proctor and Gamble (P&G) estimates that it would now be two to four times as expensive to develop "Always," one of its feminine hygiene product lines, than it was 10 years ago.

One way that companies are coping with these increased costs of development is by using an open business model, in particular, open innovation. The concept is to create new brands by licensing technologies from other companies around the world, and getting more out of the unused ideas from technology created within a company itself.⁵⁹ Companies as diverse as Air Products, an industrial gas company; Lilly, a pharmaceutical company; P&G, a consumer products company; and Microsoft, a software company, have embraced open innovation.

P&G's goal is to create 50 percent of its new products from outside the company. In Great Britain, P&G is involved in a pilot initiative with the National Endowment for Science, Technology and the Arts, British Design Innovation, and Oakland Innovation to help identify and develop innovative ideas.

The key to success in this effort is the protection of intellectual property. P&G and its partners in the pilot initiative will hold workshops, examine ideas, and provide financial support until the products have commercial viability. If there is no final agreement on licensing the technology, the designer retains his or her IP and can take the concept elsewhere.⁶⁰

This concept can be used in any industry, and has particular application to the high tech community. With ongoing challenges from the EU and other governments that are seeking to dilute the value of IP, companies would be well-served to consider open innovation as a way to reduce the cost of research and development and protect their own and other companies' IP. Such collaboration would increase employee mobility and idea exchange, increase the demand for standards and interoperability, and help small businesses bring their ideas to market. It should also reduce patent litigation. Providing such a result through the private sector would be far better than a government or a court telling any particular company how its products should work with other companies' technology.

On November 2, 2006, Microsoft and Novell announced a set of broad business and technical collaboration agreements, which will be in place until at least 2012, to make Novell and Microsoft products work better together. The companies also agreed to provide each other's customers with patent coverage for their respective products. As a result, customers will be provided with greater choice and flexibility through improved interoperability and manageability between Windows and Linux.⁶¹

Property rights are threatened by everything from regulation and taxation of the Internet to unwarranted legal action against technology companies. This publication is part of the effort to provide increased knowledge of the significance of property rights so that enough individuals will take the steps necessary to prevent the arbitrary taking of such rights by the government.

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³⁶ Cass.

³⁷ While other countries have had an increase in AIDS cases, Thailand decreased from 143,000 cases in 1991 to 19,000 in 2003. While a troubling and preventable disease, nonetheless, in terms of TRIPS justification, this does not constitute a "national emergency."

³⁸ Marrakesh Agreement Establishing the World Trade Organization, Annex 1C, Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), Part II, Article 30.

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