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Power and Interdependence: International Intellectual Property Rights in a Networked World[1]

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Abstract

Unexpected advances were achieved in the protection of international intellectual property rights during the NAFTA and Uruguay Round of trade negotiations. The United States also unilaterally extended the intellectual property rights of US firms through such measures as the Digital Millennium Copyright Act of 1998. Critics worry that the balance between innovators and users has tilted too far in favor of the owners of intellectual property and that poorer people and countries are disadvantaged. This chapter examines the implications of the globalization of stronger intellectual property rights protection for knowledge production, wealth creation, educational opportunity, and equity in access to new breakthroughs.

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”We live in an era of interdependence.”

“Interdependence among societies is not new. What is new is the virtual erasing of costs of communicating over distance as a result of the information revolution.”

Robert O. Keohane and Joseph S. Nye, Jr.[2]

I. Introduction

Globalization and the rules and treaties that support the governance of an interconnected, networked international economy proceed in fits and starts, not along a smooth, predictable path. The central themes of international relations are invented and reinvented with some frequency, but the fundamental issues of power and the management of global relations remains quite constant. During Robert Keohane’s distinguished career, he has witnessed and often helped shape and critique our thinking about fundamental concepts such as realism, transnational relations, complex interdependence, transgovernmental relations, and globalization. He has helped turn buzzwords into useable concepts and constructs.

In this spirit, this chapter situates the ongoing debate concerning intellectual property rights and international intellectual property management in a political economy framework related to power and interdependence in a global arena. This is a departure from the norm. Most of the literature generated on intellectual property issues is legalistic. It concentrates on what is and is not permissible under the law, mostly national laws, given changing technological parameters. By contrast, this chapter views international intellectual property in terms of efforts by existing firms to defend their

[2] Robert O. Keohane and Joseph S. Nye, *Power and Interdependence* Second edition (Boston: Scott, Foresman, 1989) p. 3 and Robert O. Keohane and Joseph S. Nye, “Power and Interdependence in the Information Age,” *Foreign Affairs*, September/October 1998, p. 83.

power and position and protect their business models in the face of technological change and global interdependence.

The situation in the intellectual property arena is akin to what the science fiction writer Frederik Pohl once dubbed a "Cool War." No missiles are fired. No bombs are dropped. Companies and countries seek advantage by undermining and sabotaging their foes' efforts to grow and prosper. Everybody does it, so everybody underperforms and the public suffers. Our situation is not quite so grim. New technologies hold so much promise that both rich and poor, within and between countries may benefit. But, these benefits are unequally distributed. The gap between rich and poor widens. Benefits arrive more slowly and are smaller than they might be for those who need the most help. The struggle is made more complex because the conflict pits gigantic corporate behemoths wedded to often antiquated business models against pesky, innovative startups that often can be crushed, purchased, or co-opted. The stakes are high -- domination of the emerging global information economy.

The strong protection of intellectual property (IP), especially international intellectual property (IIP), may run counter to the interests of innovators and of many traditional and developing societies.[3] Imposing strong protection of intellectual property limits and crowds out the distribution of what Keohane and Nye call "free information" that is created and distributed without financial compensation. Innovation slows. The proliferation of "commercial information" that is bought and paid for, by contrast, reinforces the power of strong states and commercial firms and may limit new ideas and

[3] Intellectual property includes patents, copyright, trademarks, trade secrets and other more exotic protections. Patents industries such as aerospace and biotechnology rely on invention. Copyright industries, such as software and entertainment, are built on creative expression through literature, music, etc. Here, the focus is mainly on copyright and patent protection. The analsys switches back and forth, somewhat too cavalierly, between the two.

innovators. In short, the irony is that as trade barriers have been dismantled, world technology markets are being further regulated by "ratcheting up the global IPRs." This is another example of countries imposing new nontariff barriers even as they lower or eliminate tariffs on imports.

In traditional societies the practice, going back as long as anyone can remember, is that the elders pass down their wisdom to the next generation. It is their responsibility as ancestors to ensure that those that follow them are taught what they need to know. They are compensated with respect, not with money. This mindset is alien to international negotiators. So far developing countries have not been able to sustain this traditional position and have do not believe they have benefited from the new IP standards that they reluctantly accepted. Their growth prospects may actually be undermined by the new IP regime. (Maskus and Reichman. 282)

Two developments accelerated the breakdown of the status quo. First, despite claims that "information wants to be free," the commercialization of the airwaves and the proliferation of ISPs that offer Internet and Web access introduced the idea that users would pay for information, or at least for copyrighted and specialized information. Also, the keepers of traditional knowledge are further perplexed when outsiders, learning of ideas common in an oral tradition or written in a language out of the mainstream, claim this newly discovered intellectual property as their own. (McCalman. 12-13)

Second, on the international level, companies are pushing hard to globalize their control over their IP. The creation of global broadcasting, communication, and information networks fostered interdependence but also deprived the elders of their knowledge advantage. "We are no longer linked to our past by an oral tradition which

implies direct contact with others (storytellers, priests, wise men, or elders), but by books amassed in libraries, books from which we endeavor - with extreme difficulty - to form a picture of their authors. (Levi-Strauss. 1968) Today, oral traditions are turned into scientific notes and books are in danger of being supplanted by video images and the World Wide Web.[4] Students in many countries still absorb some traditional wisdom, but youth watch television and movies and learn what is new and what is cool from their peers, not from old fogies. Even getting American teenagers to watch old black and white movies is a nearly impossible task. After they assessed the impact of TRIPs on their economies, developing countries began to focus their efforts on improving their bargaining position in the Doha Round of trade talks and in the World Summit on the Information Society (WSIS) talks scheduled to resume in Tunisia in November 2005.

The remainder of this chapter is presented in five sections. The next section looks at what might occur if industrial countries and global firms succeed in using international intellectual property rules to enhance their power vis-à-vis other countries and competitors. Then, the impact of recent international negotiations and U.S. law concerning IP on the global power balance is considered. The third section assesses the effectiveness of governance and enforcement measures designed related to international IP. The fourth section assesses the relationship between effective IP enforcement and

[4] In December 2004 Google announced plans to create a vast online reading room by scanning and indexing all of the books in the Stanford and University of Michigan Libraries and additional volumes from the libraries of Harvard, Oxford University, and the New York Public Library. John Markoff and Edward Wyatt, "Google Is Adding Major Libraries to Its Database," *New York Times*, December 14, 2004. http://www.nytimes.com/2004/12/14/technology/14google.html

innovation. Finally, four scenarios for the future that relate to what occurs in the international IP arena are suggested.

II. The Balance of Power Shifts: NAFTA, TRIPs, WIPO, and DMCA

The major surprise of NAFTA and the Uruguay Round trade negotiations was the unexpected "progress" made on intellectual property. During the negotiations to create the agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs) in 1994, trade ministers trespassed on and trampled the turf patrolled by the guardians of the Paris Convention for the Protection of Industrial Property (1883) and the Berne Convention for the Protection of Literary and Artistic Works (1886), which the United States did not sign until March 1989. The new, muscular WTO trumped an ossified World Intellectual Property Organization (WIPO). Many countries agreed that innovators should be fairly compensated for their ideas and that stronger, though not necessarily harmonized; international intellectual property rights protection was required. Pressed to retain their relevance, WIPO finally met in 1996 to amend the Berne Treaty to take into account digital content and distribution.

The fundamental contention here is that domestic and international intellectual property protection traditionally maintained a delicate balance between the rights of innovators and the rights of users. The efforts to strengthen international intellectual property rights have a long history. (Sell. esp. 107-140) During the past twenty years on a domestic and international level that balance has shifted more strongly in favor of the innovators through a series of new laws and treaties that significantly broadened and strengthened the scope of intellectual property protection and extended its range into new

information arenas. Organized industry lobbying interests brought more money and focus to the table than diffuse users. More often than not, they prevailed.

I sympathize with the arguments of Lawrence Lessig and Pam Samuelson that as intellectual property protection is expanded and extended it threatens the freedom, creativity, and dynamism of the Internet. Indeed, the struggle over whether the FCC or the ITU should impose Internet regulation that hands significant control over its development to large companies is ongoing.[5] There also is considerable concern that if an appropriate balance is not achieved, the imposition of new intellectual property standards will retard IT and wireless innovation, suppress creative risk taking, and even undermine development prospects in many parts of the world. For example, what should constitute fair use of digital information available online? In the wake of debt crises and economic downturns developing countries arguably are more vulnerable to economic persuasion than in the past. The United States, the largest market for exports of most developing countries, sees it as fitting and proper that countries that are unwilling to open their markets, discourage piracy, and improve protection of American intellectual property rights should be threatened with and then punished with trade sanctions. That did not hinder the United States from imposing stiff barriers to imports of steel and agriculture during the first two years of the Bush administration.

It also is worrisome when the distinction between real innovations, those that deserve IP protection, and opportunistic patent and copyright protection becomes blurred. This seems to be underway. For example, biotech companies are busily patenting DNA fragments and molecules from tropical forest plants and organisms that might yield new

[5] One fear is that firms and governments might use the WSIS to secure control over domain names and then censor the Internet.

pharmaceuticals. At the same time, they made certain that developing countries could not seek primary patents by exempting "plants and animals other than micro-organisms" from patent protection. (TRIPs. Article 27.3(b))

In addition, process patents are proliferating. Thus, Amazon.com claimed that the idea of one-click checkout was unique and patentable. Priceline.com made the same argument for its "name-your-own price" concept. The patent office concurred, granting exclusive rights so broad that they cover almost everything. Further, when a newcomer spends heavily and comes up with a real breakthrough the holders of patents and copyright holders that have been displaced do what they can to blunt the power of innovators. For any competitor or new innovator that dares to develop new processes or products that vaguely resemble existing patents or copyrights must anticipate that they will be subjected to costly legal battles before they can proceed. For their part innovators have responded in various ways, including by embracing the concept of a cultural commons and the open source movement in software to try to free themselves from the grapples of Microsoft and other dominant players.[6] Even when a real breakthrough occurs, the innovator is likely to face sustained opposition to establishment of its right. For example, to establish its CDMA2000 3G wireless standard Qualcomm had to break down a long-established patent pooling system run by the telephone oligarchs.

Globalization involves greater access to each other's resources and markets. Questions abound. To what extent should countries be open for trade and competition and allow further interconnectedness of their economies? Who should decide – the

[6] Some old line companies such as IBM also have moved in the direction of loosening their control over some of their IP and embracing Linux open source software. SVP for Technology John Kelly notes that by providing free access to 500 of their software patents marks "the beginning of a new era of how I.B.M. will manage intellectual property." Steve Lohr, "I.B.M. to Give Free Access to 500 Patents," *New York Times*, January 11, 2005, C1.

countries themselves or international treaties signed by states but administered by international institutions? How will globalization be impacted if corporations from industrial countries use their clout and expertise to ensure that they gain advantage from this global interconnectedness? In short, as everyone struggles to thrive rather than merely survive, who should own and control information and ideas? What is it worth? And, how should creators and innovators be compensated?

III. NAFTA, WTO, and the Doha Round IP negotiations

In short, since the 1980s international intellectual property protection has surged much higher on the international economic agenda. The rules today are more global and tougher, even if they are unlikely to be fully harmonized anytime soon. The North American Free Trade Agreement (NAFTA), completed in 1993, provided for strong IPR protection in Canada, Mexico and the United States. (Other countries seeking membership in NAFTA in the future will be required to agree to these provisions.) A year later signatories to the Uruguay Round TRIPs agreement, which was built on the Paris Convention, agreed to support somewhat weaker baseline protection for copyright, patent, trademark, trade secret, and other forms of IPR.[7] In the aftermath of these treaties, who wins and who losses?

The TRIPs agreement provides a laundry list of ground rules that signatories promised to use to provide intellectual property protection in their countries. It does not layout a harmonized system of copyright, trademark, and/or patent protection. Countries promised to extend IP protection to cover new and innovative processes and products

[7] Although the NAFTA accord was signed a year before the TRIPs agreement, the basics of the TRIPs accord were reached before the NAFTA agreement. This allowed the three parties involved in NAFTA negotiations to craft a somewhat stronger instrument.

including computer programs, integrated circuits, plant varieties, and pharmaceuticals. Countries also agreed to provide the same IP protections for domestic and international, and for imported and locally-produced goods and services. Poorer countries were given longer transition periods to come into conformance with the treaty. The poorest signatories could delay compliance until 2005 and may delay until 2016 before fully applying patent protection to pharmaceuticals. Even that is proving difficult to achieve because many developing countries had no existing IP institutions; few experienced experts and administrators, few lawyers and no judges with the necessary expertise, and they could not afford to divert scarce funds and manpower to creating them.[8]

The NAFTA agreement focused on these same issues but was stronger because only three countries were involved and the only developing country involved, Mexico, was highly motivated for the overall free trade agreement to succeed.[9] (Hufbauer and Schott) For this reason, once ratified, the agreement could be put into force without a lengthy transitional period for signatories to come into compliance.[10] Specifically, Article 17 of the NAFTA agreement increased IP protection on four fronts in the Americas. (1) It widened the range of what could be patented and established a long patent period. (2) Copyright protection was extended to cover new technologies including software databases and sound recordings. (3) It narrowed the conditions under which compulsory licensing was allowed and beefed up contractual rights in copyrights.

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[8] *The Economist*, June 23, 2001. It is worrisome that restrictions on technology transfer via TRIPs may hamper development prospects.

[9] Efforts to create regional IP agreements also became a focus of attention within the European Union and APEC.

[10] Carlos Primo Braga notes that another major difference between the NAFTA and TRIPs agreements was that TRIPs offered no "pipeline protection" so products patented before the TRIPs ratification are "not entitled to any protection in countries that did not provide protection in this area." p. 109.

(4) The three signatories agreed to put the agreement into force quickly and to establish meaningful enforcement mechanisms to give it teeth. (Callan. 17-18).

Doha Round trade negotiations are underway, but predictably stalled. The declarations related to TRIPs at the Ministerial Conference in Doha, Qatar, clarified existing obligations, particularly with respect to implementation and set out a preliminary agenda for the future. The Doha Declarations appear to aid developing countries; especially the poorest of them, by securing greater flexibility in using IP rights, especially as related to public health issues and domestically produced generic drugs. The Ministers at Doha issued a separate declaration on public health and intellectual property. In light of the international AIDS crisis and other public health emergencies, ministers acted to mitigate the tension between improving public health and strengthening intellectual property rights. For example, countries such as Brazil and South Africa needed to find a way to reduce the price paid for desperately needed, expensive AIDS drugs. The Declaration recognized that to meet the demands of national public health emergencies governments may need to suspend or alter certain international intellectual property rights obligations. Although the industrial countries and their pharmaceutical industries agreed to loosen their intellectual property rights to deal with life-threatening epidemics, the United States and the EU made sure that highly profitable luxury and lifestyle drugs such as Viagra and weight-loss medicines were not granted more flexible IP treatment.

In addition to public health concerns, the Doha negotiations agreed to visit or revisit several issues raised by TRIPs that are important to developing countries. The Doha negotiations also raised a number of new IP issues such as the use of patents, trade secrets, and copyrights to protect traditional knowledge and folklore, the relationship of

the Convention on Biological Diversity to the TRIPs agreement, and provisions to enhance the transfer of technology to developing countries. Other issues include efforts to protect plant and animal varieties and to refine the use of geographic location identification (often associated with the quality or reputation of products such as wine) to ensure that products originate from the place and manufacturer that is claimed. (McCalman)

The United States has a long history of being reluctant to join certain international agreements. The United States worried that international institutions and treaties would restrict its sovereignty and freedom to act in its own interests. Recent examples include its refusal to sign on to agreements covering landmines, global warming, and the establishment of an international criminal court. In this vein, the main reason the United States did not sign the Berne Agreement for more than a century was that the United States would have had to repeal its own statute (17 U.S.C., section 601) that "required first publication in either the United States or Canada for a copyright to qualify for U.S. copyright protection under U.S. law." (Bettig. 221) There were ways U.S. publishers could get around the law, of course, but even when the statute was allowed to expire in 1986, some U.S. copyright owners opposed ratification of the Berne Treaty because it contains a moral rights clause that allows authors "to object to the any distortion, mutilation, or other modification, … which would by prejudicial to his honor or reputation." (Article 6bis) Of course, the television and movie industries that routinely adapt creative works, alter screenplays, or "colorize" old movies, thought this was a terrible provision. Ultimately, interests that were gathering to fight piracy and promote international IP protection and enforcement prevailed and the United States signed the

Berne Agreement. Predictably, when the NAFTA and TRIPs agreements were negotiated, they did not contain clauses related to moral rights.

Mexico and other developing countries are constantly reassured by the United States that the IP agreements that they accepted are in their interest. They remain unconvinced. They complain that the United States is for free trade when it is in their interest, but that it turns protectionist when free trade undercuts American industries like steel, agriculture, software, or Hollywood. America accepts agreements that further its goals but refuse to do so if it believes American sovereignty could be eroded. The view from the developing world is that the United States is rich, arrogant, highhanded, and often duplicitous.

A clear example of U.S. efforts to enhance their own industries came at the December 1996 WIPO conference in Geneva. To paraphrase Pam Samuelson, the United States pushed for, but ultimately did not achieve the establishment of new international IP norms for the information industry. The United States delegation, led by Bruce Lehmann, Commissioner of Patents and Trademarks, sought to (1) grant exclusive rights for copyright owners to control virtually all temporary reproductions in the random access of computers; (2) treat digital transmissions of protected works as copies distributed to the public; (3) limit the power of states to limit or make exceptions to the exclusive rights of copyright owners even for fair use and first sale privileges, (4) allow copyright owners to challenge the manufacture and sale of technologies or services that would make it possible to get around technological protections of copyrighted works; (5) protect the integrity of rights management information associated with protected works in digital form; and (6) create new legal protections for the contents of databases. Along

with their European counterparts, American negotiators pursued “high protectionist norms” that “would enable their industries to flourish in the growing global market for information products and services.” (Samuelson.1997, 373)

In the aftermath of the Uruguay Round the United States continued to press to strengthen and harmonize international intellectual property protection. In the absence of multilateral negotiations the United States embarked on negotiations to establish model bilateral free trade agreements (e.g. with Jordan) and bilateral investment treaties (e.g. with Nicaragua) that contained TRIPs plus provisions on IP. The idea was to ratchet up the level of IP protection by combining a process of “forum shifting,” with coordinated bilateral and multilateral negotiations, and entrenchment of minimum acceptable standards of IP protection in international agreements.” (Drahos. 16-22) Developing countries were apparently promised that if they went along with the multilateral IP accords the EU and the United States relax some of the standards in bilateral discussions. This did not occur, although the EU was somewhat more flexible than the United States.

IV. Increased Domestic IPR and Enforcement: the DMCA

The United States during the Clinton years strengthened and extended the rights of property rights holders, especially with regard to digital content and distribution. Large commercial holders of intellectual property such as the Intellectual Property Committee, the International Intellectual Property Alliance, sector groupings such as the Pharmaceutical Manufacturers Association, the Recording Industry Association of America, and the Motion Picture Association made lobbying for "hard law" and tough enforcement a priority for their members and for the United States government. Their

most stunning success came in 1998 when Senator Orrin Hatch (R.UT), then Chairman of the Judiciary Committee, gave teeth to legislation implementing the WIPO treaty amendments. What emerged was the Digital Millennium Copyright Act (DMCA) of 1998 that tipped the delicate balance between the rights of innovators and the rights of users in favor of large firms that owned the copyrights. In short, TRIPs on the international level and the DMCA on the domestic level represented victories for large commercial interests that "institutionalized a conception of intellectual property rights based on protection and exclusion rather than competition and diffusion." (Sell. 2002, 172) Critics in the United States and globally predicted that small, innovators in both the developed and developing worlds would suffer. So far the empirical analyses bears this out, suggesting that "there is relatively little evidence that stronger IPRs stimulate local innovation, at least in the short to medium run." (Branstetter. 369) Those critics more focused on equity and development also were worried that consumers in developing countries would be transferring significant intellectual property resources to developed country firms, but would receive practically nothing in return. This opinion seems to be on the rise among developing countries.

Specifically, the Clinton Administration moved forthrightly in support of the copyright industry. With the rise of digital rights, innovators were favored over users.[11] The original Clinton administration Intellectual Property White Paper proposed giving

[11] Two rumors, neither confirmed by hard evidence, are sometimes offered to explain the shift. First, President Clinton was supported by the entertainment industry and by Silicon Valley and he repaid his debt. Second, some of his detractors suggested that Bruce Lehmann, Clinton's IP tsar, hoped to succeed Jack Valenti as Hollywood studios' chief lobbyist and was trying to demonstrate his credentials as an IPR hawk. (This did not occur. Valenti stayed on until September 1, 2004 when he was succeeded as President of the Motion Picture Association of America by Dan Glickman, who had served as Clinton's Secretary of Agriculture.) Or, more simply, Clinton officials may have done what they believed was right.

copyright owners control over all digital copyrighted works, their reproduction and transmission. They would have eliminated fair-use rights whenever it could be licensed and deprived the public of first-sale rights (including electronic forwarding). The Clinton Administration proposed attaching copyright management information to digital copies of a work and to protect every digital copy of every work technologically. It was suggested that online services should be required to become copyright police responsible for implementing pay-per-sue rules and that copyright rules should be taught to children in school. (Samuelson. 1996, 136)

The White Paper was toned down. Still, it ultimately helped inform the Digital Millennium Copyright Act of 1998, which significantly strengthened copyright protections. One key element of the DMCA was the "anticircumvention" provision that restricts the cracking of code that protects copyrighted material and the creation of code that cracks code that protects copyrighted material. (Lessig. 2001, 187) In short, it is illegal to circumvent anti-piracy measures that are embedded within commercial software or to manufacture or distribute devices that can defeat unscramble encryption codes. This provides almost the same protection that AT&T once enjoyed when it was illegal to attach any device to AT&T's network that was not made by Ma Bell.

The fundamental criticism leveled at the DMCA (and other laws designed to protect intellectual property rights) is that the "law is that they are so broadly drawn that all sorts of companies might use it to stifle competition." (Wildstrom. 26) Copyright protection grew out of print technologies. As Ithiel de Sola Pool long ago pointed out, First Amendment rights were applied most easily to print. Built on English copyright foundations, American copyright law "created private rights to published works" while

simultaneously providing “for a legal public domain consisting of works on which copyrights had lapsed or to which it had never applied.” (Starr. 115) Faced with new technologies, copyright and to a lesser extent patent holders have tried to prevent works from going into the public domain. This is an effort to counteract the Web and broadband communications technologies that allow the widespread, inexpensive distribution of perfect copies of digitized information. So far digital books have not won widespread readership. It is awkward and unnatural for most people to read large amounts of text on screen. But even at much shorter length what is the appropriate manner for protecting digitally distributed intellectual property? One especially insightful literary critic asked simply, "Who will "own" an interactive novel after it has been repeatedly been interacted with?" (Lanham. 18) We may not get a chance to find out. The challenges for copyright holders of music and increasingly movies provide even more complex threats.

Copyright holders have attacked, often with all the legal firepower at their disposal, efforts to use and modify intellectual property in print and online. For example, in 2001 Houghton Mifflin announced plans to publish Alice Randall's *The Wind Done Gone*, a parody or sequel of Margaret Mitchell's 1936 novel *Gone With the Wind* from the perspective of the African slaves in the household. Mitchell's descendants argued that the story was theirs to control until 2031 (extended from 1992 by the new copyright law) and sued to stop publication. Ultimately, the novel was published but the tremendous expense involved in getting through the courts could discourage writers and their publishers from issuing parodies and sequels in the future (Lessig. 2001, 198-199).[12]

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[12] Similarly, Edgar Rice Burroughs Inc., the estate that Tarzan’s creator, set up in 1913 has tried to curtail distribution of the humorous novel *Tarzan Presley* published in mid-2004 by New Zealand author Nigel Cox, claiming that it "infringes their intellectual property rights" including

George Lucas is frustrated by fan edits of the "Phantom Menace" that cut back the screen time of the irritating Jar Jar Binks. Similarly, a Stanley Kubrick fan released the "Kubrick edit" of Steven Spielberg's "AI."

The problem is not that someone gets it cheap, because otherwise they would not get it all. It is not unusual for IP holders to charge much less and even much less per user in poorer countries for their products and services than they do in major markets. Studios and broadcasters use such dual pricing schemes to provide movies and television shows to developing countries for what they can get, not for what they think they should get. By charging less to poorer customers in developing countries the goal is to reduce incentives to piracy while maintaining profitability. Property rights owners can deal with low rates of return so long as there is not outright piracy. IP rights holders often are at least as concerned with creating the legal precedent of compensation for their innovations as in the absolute amount.

Piracy and parallel imports are much more disturbing to copyright holders. Piracy from music to movies, from Naptster to China is theft, although it also is true that the copyright holders have done everything conceivable to terrorize and alienate their customers. An even more serious problem comes when developing countries re-export cheap or pirated products to industrial countries impacting sales to those who could otherwise afford to pay. Hong Kong after its return to China provides an example. IP holders want to be paid top prices in Hong Kong, but recognize they need to discount

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the name Tarzan and other aspects of the man-raised-by-apes character. The novel tells the story of Presley "raised by gorillas in the wild jungles of New Zealand, scarred in battles with vicious giant wetas, seduced by a beautiful young scientist" who gets a record deal with Elvis Presley's producer and has 30 No 1 hits. Tom Cardy, “Legal Eagles target Tarzan,” *The Dominion Post*, December 2, 2004.

their prices to sell to the rest of China. Even after China's entry into the WTO, there remains a huge temptation to re-export legitimate and pirated products from China to Hong Kong and beyond. The problem is even greater when films and music are available on the Web before they open in theaters or are issued by the music companies. For example, despite extreme precautions *The Matrix Reloaded* was available on the Web before it opened in theaters. This prompted the filmmakers to open the third Matrix installment at the exact same moment everywhere in the world, despite time differences. Or, when Madonna tried to prevent her album from being downloaded hackers promptly hacked her Web site and made all the tracks available to anyone who wanted to download it.

Finding and maintaining the right balance between innovators and users recurs over and over again as a critical challenge facing policy makers. Copyright guru Paul Goldstein concisely frames the public policy dilemma. He notes that "if society withholds property rights from creative work, the price that producers can charge for access to it will begin to approach zero; their revenues will diminish and, with them, their incentives to produce more. But if society confers property rights on creative works, prices will rise and the information produced will reach smaller, wealthier (or more profligate) audiences, even though it might be that the work could be disseminated to everyone else at no additional cost." (Goldstein. 177)

V. IPR and Innovation: Two Case Studies: Music and Pharmaceuticals

Consider two case studies. First, there is a copyright-based sector that is threatened by the rise of the Internet and digital copying–the music industry—which first

saw the new technology as a threat, before the movie (Grover and Green) and software sectors (*CNN.com.* Technology, January 7, 2005). Second, and more briefly, a patent-based sector– the pharmaceutical industry – is considered. It has immediate relevance to innovation and prosperity in developing countries.

(1) Copyright, Innovation and the Music Industry

Is anybody surprised that teenagers around the world download music for free because they can? Napster may be gone and Kazaa under attack, but the genie is out of the bottle. File sharing, in one form or another, is exploding and will continue to do so. The more the music companies struggle to retain their old business model and prosecute offenders, the more negative the public's perception of them becomes. The trend is clear. In 2002, according to the International Federation of Phonographic Industry, about 2.3 billion legitimate CDs were sold worldwide and almost another billion were pirated. Just two years before legitimate sales peaked at 2.5 billion, compared to only about 600 million pirated copies. (*Financial Times*. April 28, 2003, 14) Global sales fell an additional 7.6 percent in 2003, although the slippage declined in the second half of the year. (IFPI) Lobbying legislators for draconian laws (that could also cripple innovation on the Internet); suing distributors, universities and students; or threatening to freeze offenders' computers and potentially damage them will not stop the avalanche that is poised to obliterate them. These firms were hopelessly mired in an antiquated business model and did not know how to revamp it. Rather than seeking a better business model they struggled to hold on to their power for as long as they could.

Famously, legal costs ultimately forced the original "Napster" out of business. The music industry persuaded the courts that Napster's millions of fans were breaking the

law when they downloaded music from the Web without paying for it. Other free music providers such as KaZaa, Gnutela, and Limewire that popped up to replace Napster have proven more difficult to drive out of business. KaZaa for example has about 70 million registered worldwide users downloading free content. But, every major record company is suing them for copyright infringement. If they are served and the courts find against them, their ad revenues would not be sufficient to pay off their judgments.

Record company losses are real. Purchases of music CDs are down. However, the losses claimed due to software and intellectual property violations are inflated. Industry calculations assume that all those who illegally copy music, videos, or software would otherwise pay full retail price to obtain the pirated intellectual property. (Schneier. 25) This obviously is incorrect especially for teens and those in developing countries who simply do not have the money to pay full price.

The only real choice for the music barons is to reinvent themselves and dramatically alter their business practices and approaches. This process began with the introduction of Apple's iTune technology in April 2003 and its wildly successful iPod music player. Apple's new iTune Music Store program charges 99 cents per song for legal downloads that are simple and easy. Baby-boomers and even their children seem willing to pay for their music. In its first month there were approximately one million downloads, far more than anticipated. (Leonard) After a year legal download were averaging about 2.7 million per week. (Singer) Inevitably, legal competitors such as Wippit entered the fray and began competing by offering even lower prices for legal downloads. These outlets provided a mechanism for distributing music over the internet and still maintaining an IP revenue stream.

Ultimately, the music companies and other copyright companies are fighting a losing battle if they do not innovate in their business models.. The technology that allows downloading music or copying DVDs exists and will be used despite the best efforts of the record companies and studios to suppress them. Indeed, some predict that despites its slow start Tivo-like digital video recording devices that automatically record television programs (sometimes skipping the commercials) could lead to major changes in the way people interact with the media.

(2) Pharmaceuticals and Basic Health

Pharmaceutical firms are patenting the rainforest, but also believe that they are entitled to full price for drugs in developing countries.[13] But, after the post-9/11 anthrax scare in the United States, the German company Bayer happened to be the sole producer of Cipro, the drug of choice for safeguarding against anthrax exposure. Suddenly, when the demand for Cipro increased but the supply was short, U.S. policy altered direction with regard to full payment to the legitimate patent holder. The existence of the HIV/AIDs scourge reinforced the process. U.S. Government thinking began changing, culminating when the United States agreed that cheaper HIV/AIDs drugs should be available in Africa and other desperately poor, stricken countries and acquiescing to Doha Declaration changes in TRIPs to allow this.

Pharmaceutical firms are caught in a bind. It may cost billions of dollar to develop, test, and gain approval for new drugs in industrial countries. Some of these new drugs fail to pan out or subsequently need to be withdrawn. Moreover, patent on drugs are shorter in duration and more difficult to extend than copyrights on creative works.

[13] Similarly, tobacco firms long ago trademarked marijuana cigarette brand names like "Acapulco Gold" just in case selling marijuana becomes legal.

This creates incentives for pharmaceutical companies to concentrate on incremental improvements or on potential blockbusters that will sell for high prices to those who can afford them. There is little incentive to innovate on drugs for diseases that afflict the poor, who cannot afford to pay for them. Thus, pharmaceutical company R&D does not focus extensively on African and other tropical diseases because drug companies do not believe that they will earn enough money from these poor regions to justify the huge, anticipated R&D expenditures that will be needed to control these diseases. As a result, more research and development funds are spent by drug firms in industrial countries on diseases of dogs and cats than on diseases of the tropics.

The Bush administration also remains opposed to efforts to legalize the re-importation of approved drugs from Internet pharmacists located in Canada and elsewhere that would undercut pharmaceutical companies' patent payment receipts. Washington, backed by the drug companies, appealed a decision by a state court in Maine that would allow Maine to force down the cost of drugs there. (Twenty-eight other states are poised to follow suit if the Maine decision is upheld.) In both these instances, the U.S. Food and Drug Administration argues that the health dangers if such services provide cut-strength or counterfeit drugs is outweighs the benefits that the poor and elderly would derive from lower-cost drugs. The consequence is that patients in the United States often pay substantially more for U.S. made drugs than their counterparts in Canada and elsewhere. Those who cannot afford expensive drugs disagree and have mounted an active lobby to change U.S. law. In a display of bipartisan cooperation the U.S. House of Representatives passed a bill that would legalize such imports in late July 2003. A majority in the Senate and the Bush administration remain unconvinced. And,

under pressure from the Bush administration the new Canadian Prime Minister, Paul Martin is considering banning such sales. This would decimate the $700 million in trade exports of prescriptions drugs from Canada back to the United States. (CNN, Health) Overall, just as in the music and movie industries, the pharmaceutical industry is engaged in a war to maximize their intellectual property rights with users in developed and developing countries who would much prefer to pay less, or even nothing for their IP.

VI. Intellectual Property and the Digital Divide

Is the digital divide within and between countries a temporary artifact of innovation. IP initiatives, and other policies or is it something more permanent? Different scenarios are possible. Four are briefly noted here: (1) Things fall apart; (2) Wealth and poverty; (3) Living well is the best revenge; and (4) Sustainable growth. They can be distributed according to whether the gap is widening or narrowing and according to sustainability.

Figure 1

Four Scenarios

	Non-sustainable Resource Use	**Sustainable Resource Use**
Widening Digital Divide	**THINGS FALL APART**	**WEALTH AND POVERTY**
Narrowing Digital Divide	**LIVING WELL IS THE BEST REVENGE**	**SUSTAINABLE GROWTH**

First, things could fall apart if the digital divide widens, resources are squandered, and the environment is overwhelmed. Manuel Castells argues with passion and eloquence, "uneven development is the most dramatic expression of the digital divide." (265) Moreover, the digital divide within and between countries should not be "measured by the number of connections to the Internet, but by the consequences of both connection and lack of connection." (269). He suggests that the "social unevenness of the development process is linked to the networking logic and global reach of the new economy. … Education, information, science, and technology become the critical sources of value creation in the Internet-based economy." (265-266) To be competitive within a networked world economy countries and firms and individuals within them must have easy access to global flows of capital and information. Castells argues that "The transformation of liberty and privacy on the Internet is a direct result of its commercialization." (170.) It is but a short logical jump from this starting point to contend that if legitimate, legal capital flows and especially information flows are restricted by stringent intellectual property protections, alternatives will be found. If large parts of the population in poorer countries are shut out of the new economy, global criminal activities will arise to create illicit transnational networks instead. (See Rose-Ackerman) Inevitably, such activities undermine the legitimacy and stability of governments and the civic culture and can, in extreme instances, result in the destruction of the rule of law, the collapse of state authority, and even to violence and civil war.

Second, the digital and economic divide could continue to widen even as the size of the pie might remain relatively constant. This incremental, rich get richer, poor get poorer scenario is less apocalyptic but provides an equally troubling vision of a world

divided with pockets of great wealth on islands of intense activity interspersed in seas of endless desperation. Information and intellectual property catapults the techno-nomads (a term coined by Jacques Attali) to wealth and prominence. Most people living in the developed world work long hours and often multiple jobs for a better life for themselves and their children. A few ride new ideas and opportunities to prosperity and significant wealth. The vast majority sees little improvement in their lives and descends further into poverty and insecurity. Sustaining such a world depends on the ability of the United States, the world's only "hyper-power," to have the capacity and willingness to use its military, political, economic, and information superiority to maintain the current status quo.

In these first two scenarios, nobody seriously claims that the music, movie, or pharmaceutical industries are the prime culprits responsible for poverty, corruption, and civil unrest. Indeed, there is a general acceptance of the proposition that outright IP piracy is a crime and that innovators need to be compensated fairly for their breakthroughs so that they earn profits and choose to continue to invest in innovation. However, what constitutes fair use and fair payment may vary substantially from one country to another and from sector to sector even within countries. It is widely recognized, even by IP hawks, that a "country's level of development heavily influences the values placed on intellectual property rights. Developing countries have always been leery of strong IP protection, which favors innovators over consumers, creative production over diffusion, and private interests over social goals." (Callan. 1) This requires innovators and users to dynamically readjust the treatment of intellectual

property as circumstances change. So far, this does not seem to be happening. The pressure is all in the direction of strong and more harmonized IP protection.

Third, a more humane but potentially disastrous scenario imagines a world, where new technology and resource consumption helps narrow the gap between rich and poor in this generation and the next by pulling up the poor without sacrificing the wealth and benefits of the rich in industrial and developing countries. In others words, to borrow from F. Scott Fitzgerald's friend Gerald Murphy, "living well is the best revenge." As has often been pointed out, the wellbeing of future generations may be sacrificed to prop up those now alive. Anyone with some assets can live well for a time if they sell off their furniture and drain their bank accounts to do so. Furthermore, if most of the population of industrial countries is entitled to the good life, why should the billions in China, India, and elsewhere not seek the same standard of living? This is so even though it is obvious what would occur if everyone or even a large percentage of those in the developing world consumed and polluted at the same level as those in rich countries. When resources are used up, individuals suffer, or, in the extreme case, people die and civilizations collapse.[14]

This scenario calls for countries to burn through money and resources now to maintain their lifestyles and perhaps to improve the lot of the many. Those who support this scenario believe that Malthus was wrong. Technological breakthrough is a magic pill that can improve everyone's situation over the long-term and can continue to do so even as new ways to protect resources and the environment are devised. They hope and *pray*

[14] See Jared Diamond, *Collapse: How Societies Choose to Fail or* Succeed (New York: Viking, 2005) which argues that global population growth and environmental degradation could lead to a collapse of civilization as we know it if we do not make wiser choices than in the past.

that future innovations will make water and energy cheap and abundant, save Medicare and the environment, and alleviate poverty and hunger. But, if all they really are doing is buying time now to ease current pressures, it will be up to our descendants to solve the problems we make worse today. This seems to be the preferred scenario of the Bush administration. They do not believe that record deficits and unequal tax cuts are mutually contradictory.[15] The danger of this approach is that Paul and Ann Ehrlich may be correct when they claim that the planet already has many more people consuming much more energy than is sustainable.[16]

Fourth, it is possible, that the optimists are correct that the information revolution (and a subsequent clean energy revolution) will be the instruments of sustainable development that will lift the impoverished without decimating the planet. For this to happen, however, at a minimum communication and information technology needs to be widely and affordably available worldwide. This may at first appear to be a utopian dream, but none of the other alternatives leads to an acceptable, equitable, and sustainable future. To move in the direction of this scenario, information needs to flow freely and thus intellectual property needs to be a tool of innovation and not one of resistance.

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[15] Secular academics will scoff, of course, but some of the most faithful do believe that the coming rapture is imminent and will make all of this planning for the future meaningless. Deanna Swift observes, "What if the rapture, the much-anticipated event in which God summons his faithful followers out of this world, happened on George W. Bush's watch? Until recently this seemingly far-fetched question was the stuff of Christian message boards. But with the White House well known for putting faith front and center, officials are reportedly at work on a contingency plan spelling out how to run the country in the event that President Bush and other top-ranking Christians are 'raptured.'" http://forums.prospero.com/n/mb/message.asp?webtag=lb-prophecyclub&msg=2625.1&ctx=2048

[16] Stephen Schneider, a colleague of the Ehrlich's at Stanford believes that the view among serious scientists is that there is about a 5 percent chance that the world will suffer a catastrophic reversal in the next fifty years because of global warming. He is alarmed that the U.S. government seems quite unconcerned. To put it in perspective he asks how many people would board their next flight if the pilot announced in advance that there was a 95 percent chance that they would arrive safely at their destination. (Personal communication).

Yet, IP holders most often threaten abusers with sticks (e.g. lawsuits and sanctions) instead of enticing them to respect IP through the use of carrots (positive rewards and incentives to embrace IP protection). The entertainment and software industries in particular have habitually threatened abusers -- companies that make it possible to circumvent their IP and users of the offending material. This is consistent with the first three scenarios, but not with the fourth. If the world is going to grope towards the fourth scenario, the only one that holds some promise for uplifting lives for the majority of the population, then IP rights need to be exercised on behalf of information development and humanity in all countries and not just on behalf of large firms in the United States, Europe, Japan, and a few other countries.

VII. Towards Rebalancing IIP

What then is needed to restore the balance between innovators and users of IP, especially in developing countries? How might intellectual property relations between industrial countries and firms and developing countries be improved? How might the intellectual property balance between developed and developing countries be restored so that all sides benefit? Transparency, fairness, and generosity all are required.

Without great elaboration the following four conditions need to be created.

1. *Raise the bar for those claiming to establish intellectual property rights.*

IP has become a tool to promote competitive advantage at the expense of would-be rivals instead of an incentive for innovators to innovate. Large firms use their financial heft and teams of lawyers to squash newcomers with a better idea, in developed or developing countries. So, IP rights should be tied to the amount of money invested in

research and development and not just to a fixed time frame. Efforts by copyright holders to extend the period of their copyrights should be curtailed. Limiting the extension of IP protection could help restore the balance between the intellectual property protections afforded to innovators and the needs of users

*2. Promote local support for IPR in developing countries by a*ssuring that their domestic *innovators benefit.*

Empirical studies find evidence that strong IPR protection by developing countries increases both foreign direct investment and imports. (Lesser) That is not enough to convince these countries to implement and enforce strong IP laws. Unless developing countries innovators also benefit from IP protection why would poor countries crack down on piracy? Curbing corruption and illegal IP activities will be ineffective unless there are legal, profitable opportunities available. The dilemma that needs to be overcome resembles the situation with foreign food aid. It may feed the population during a time of drought and starvation, but if countries depend on foreign food aid long term, there is no incentive for farmers to plant their crops or to improve their agricultural techniques.

3. Provide foreign assistance to countries to implement their IP commitments and assist domestic entrepreneurs and innovative firms develop opportunities tied to their national situation.

Even countries that wish to create strong IP protection need help in creating IP laws and institutions.[17] There is little appropriate expertise in most developing countries and spending rare human and capital resources on establishing a system of intellectual

[17] Problems and possibilities of science and entrepreneurship in pre-Web Africa are illustrated in Thomas A. Bass, *Camping with the Prince and other tales of Science in Africa* (Boston: Houghton Mifflin, 1990).

property protection is not high a high priority in any country so outside help will be needed and ought to be welcomed so long as appropriate oversight is in place. Foreign firms, governments, and NGOs "should offer to advise countries that are drafting new legislation, help pay for local IPR improvements, and reward countries and firms that improve the IPR enforcement with favorable publicity indicating that strong IPR protection helped attract their investments." (Aronson. 3) It also would help to promote networking between universities, firms, and experts in developed and developing countries to train experts, transfer technology, and create local partnerships.

4. Developing countries need to keep it simple, honest, transparent and consistent.

Greed and corruption discourage foreign investors and constrain the growth of legitimate business in developing countries. IP rules should be clearly articulated, transparent, and fairly and consistently enforced for both local and international copyright holders. Also, installing a coherent, well-trained and honest administrative and judicial system is critical. Botswana is cited as a model of recent success. In part because their mineral wealth was discovered after their administrative system was firmly in place, Botswana has grown as rapidly as any other country since the late 1980s.

VIII. Conclusion

Will the globalization of intellectual property rights serve to widen or narrow the digital divide within and between countries? If rich countries and their largest firms have now gained the upper hand versus poorer countries and smaller firms, how will that impact relations among these countries? If perceived inequities grow and developing

countries cannot be competitive within a globalized, networked world economy, this could cause globalization to unwind and things to fall apart. Information does not need to be free, but if new ideas and information becomes prohibitively expensive because of tough intellectual property enforcement, those who seek these breakthroughs will take them by whatever means is available.

Similarly, if IP rights are strictly enforced, the digital divide persists, and growth and resource use slows substantially, the gap between rich and poor will grow. Large scale piracy may discourage R&D and innovation, but profit maximization can be equally unsettling. The rights of IP holders need to balanced against the benefits from free and affordable access to innovations. The poorer the country, the less they can afford and the greater should be the price break for legitimate users. Otherwise, great wealth amidst a sea of poverty will grow ever more unstable requiring the United States to persistently exercise its power and influence to keep order.

Even if the gap between rich and poor narrows because developing countries growth spurts rapidly using scarce resources, this is problematic. Without water, oil, and critical resources, devastation follows. Perhaps making information resources abundant could delay the downturn. Longer-term sustainability requires information and communication technology to be available globally. To do so governments and innovative firms need to dynamically readjust their treatment of IP so that the information revolution is part of the solution, not of the problem. In short, the culture of intellectual property needs to evolve. Education, positive incentives, and the exercise of IP rights with compassion are at least as important as threats and legal enforcement. IP rights need to be exercised on behalf of information development and sustainability

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