

**COPYRIGHTS AND COPYDUTIES – IMPORTANCE OF THE PUBLIC
DOMAIN FOR DEVELOPING COUNTRIES**

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ABSTRACT

Developing countries need to rethink their copyright policy in light of the abundant information flows across the world. A nation's copyright policy is a pivotal source determining the forms of control that can be exercised over access to published information. The thrust for a global regime of trade related intellectual property rights (TRIPS), which includes copyright, was initiated by the United States of America in the eighth Uruguay round of GATT talks due to intense lobbying from its domestic knowledge based industries and with unequivocal support from Europe and Japan. The inclusion of TRIPS within the subsequent WTO framework has gone a long way in aligning and harmonizing intellectual property of most WTO member states with the US viewpoint. New digital technology, enabled by the Internet, is imposing a fresh challenge to conventional copyright policy. Large copyright owning organizations argue that digital media allows for an increasing possibility for piracy. Providing higher protection standards is therefore necessary. This argument led the US lawmakers into signing the Digital Millennium Copyright Act of 1998. Though a US law it has trans-national implications. A crucial dimension to the DMCA Act, beyond the US domestic horizon, is to explore how such a new copyright act will have impact on other countries, particularly developing ones. Protecting access to digital information at one end of the world through new copyright acts will have crucial consequence for the rest of the world.

1. INTRODUCTION

The international copyright rules of an information saturated society are being laid down by well heeled lawmakers financially courted by the biggest and the most powerful players in the field, all with little public debate or media scrutiny. In such a climate of rapid developments and abundant information flows across the world, it is urgent that developing countries like India rethink their copyright policy. It is important to recognize that a nation's copyright policy is a pivotal source determining the forms of control that can be exercised over access to published information. It is by now rather well known that the strong thrust for a global regime of trade related intellectual property rights (TRIPS), which includes copyright, was initiated by the United States of America in the eighth Uruguay round of GATT talks due to intense lobbying from its domestic knowledge based industries and with unequivocal support from Europe and Japan (Santoro, 1995; Smith, 2004). By knowledge based industries I specifically mean industrial activity with high labor skills, technology and R&D intensive in terms of expenditure in innovative activity and which seeks to protect its intangible assets through Intellectual Property. These industries, particularly, entertainment, telecommunications, software, pharmaceutical and bio-technological were immensely successful through the decade of the 1980s in persuading the US state to introduce and aggressively push TRIPS through the GATT talks (1986-1994). The inclusion of TRIPS within the subsequent WTO framework has gone a long way in aligning and harmonizing intellectual property rights of most WTO member states with the US viewpoint.

New digital technology, enabled by the internet, is however imposing a fresh challenge to conventional copyright policy. It is being argued by many large copyright owning organizations that the digital media allows for an increasing possibility for engaging in intellectual theft. Providing higher protection standards than allowed under earlier terms of copyright legislation can help to compensate and perhaps minimize the attendant loss in revenues. This argument seems to have convinced the US lawmakers into signing the Digital Millennium Copyright Act of 1998. DMCA basically allows the copyright owner to put a cryptographic or technological lock around a work in order to control unauthorized access, copying,

performance or display of the work. It becomes illegal to both circumvent that lock or to supply any product, service or technology that's designed to help anyone else circumvent that lock. Any person "privately" engaged in the development or distribution of circumvention technology, which otherwise is allowed under copyright's "fair use" doctrine, is at risk of being held criminally or civilly liable. Many such cases, as discussed later in the paper, have already proliferated.

Though a US law DMCA has trans-national implications, as it may begin to mediate access to cyberspace for people living in other countries. Critics of the law have pointed out that there are many grave consequences of such an act, the primary one being reduced "fair use" access and a diminished public domain (Lessig, 2001a; Samuelson, 1999). The internet is a medium that is easily accessible from any part of an increasingly wired world. Much of the world continues to access the high density of information traffic originating out of the United States. The English language continues to dominate the internet with approximately 78% of all web sites and 96% of e-commerce web sites. It is true that not all English web-sites originate from the United States, but a lot of non-English speaking native people do still depend on English sites for information and transactions. (Lyman and Varian, 2000). Protecting access to such information at one end of the world through new copyright acts will, I want to argue, have crucial, even if unintended, consequence for the rest of the world.

Digital technology is already making possible unprecedented access to information to ever larger number of people across the world. Given such changes what will be the new structures of information regulation? Will such information produced at and perhaps controlled from geographically distant horizons render obsolete certain important aspects of copyright sovereignty for developing countries? The newer implications if not addressed early enough by developing countries like India will catch us completely unawares in the near future. The present attempt is to make an intervention at the conceptual level of potential policy options for developing countries. It is beyond the scope of this article to delineate in detail the practical examples to a strong copyrighted information age for developing countries.

2. KNOWLEDGE "PIRACY"

To begin with let us first appreciate the sudden importance that Intellectual property (IP) has gained within the last decade. There are two immediate reasons for its global prominence. The first and the most commonly referred and easily invoked reason is the claim, by IP owners, that through "piracy" there is considerable theft of intellectual property all over the world but particularly so in developing countries (Litman, 2000). Such piracy, it is claimed, leads to considerable loss by the owners and producers of intellectual property, especially from the developed world. Global theft of billions of dollars is therefore to be prevented at all costs. The International Trade Commission, articulating the dominant IPR viewpoint, claims that foreign "piracy" of United States IP costs the country approximately \$40 to \$60 billion per year (Johnson, 2003). Mudiwa (2002) and Shiva (1997) have contested the assumptions behind such sweeping claims. It is also worth mentioning briefly that equating "piracy" in the 21st century with 18th century imagery of "savage" pirates who robbed and killed violently in the south china seas is rhetorically rather inflated. Nevertheless given the growing importance of knowledge based industries in the western world, especially the US, there is considerable stake in preventing "piracy" through a stronger protection of IP.

2.1 Legislative Lobbying by US Copyright Industries

As indicated earlier, the second set of reasons for the prominence of IPR is related to the intense lobbying by relevant industries of the United States. By the early 1980s the knowledge oriented industry heads in the United States were quick to anticipate that the protection of intellectual property would help them reap rich dividends. Under the leadership of the Chairman and Chief Executive Officer, Edmund Pratt of Pfizer, a transnational Intellectual Property Committee (IPC) was instrumental in transforming "intellectual property from a lawyer's specialty into an international trade issue of great concern to governments around the world" (Santoro, 1995). IPC was rather successful in forging coherent relations between US, European and Japanese industry heads to secure global protection for intellectual property through the GATT negotiations.

The momentum built by IPC through the 1980s and early 90s was further consolidated by the present generation of knowledge industry leaders. The media, entertainment, pharmaceutical, biotechnological, telecommunications industries are among the highest campaign supporters of US elected officials. The drug industry contributed a total of \$230 million for financing campaigns in the 1999-2000 US elections, the communications industry was number 4 with \$133 million and the health industry number 7 with \$96 million among industry contributors during the 2000 US election cycle (Centre for Responsive Politics, 2004). The US Congress is definitely more alert and receptive when claims such as the following are made by industry representatives: "the copyright industries are responsible for some 5% of the GDP of the United States", and that "they gather in more international revenues than automobiles and auto parts, more than aircraft, more than agriculture" (Valenti, 2002). It is further stressed that copyright industries are creating new jobs at three times the rate of the rest of the economy and that the "[US] movie industry alone has a surplus balance of trade with every single country in the world" (Valenti, 2002). Just to stress on the IP national level strength, developed countries hold more than 90% of all patents worldwide. The 10 most developed countries accounted for 84% of global Research and Development, controlled 95% of the US patents of the past two decades and captured more than 90% of cross-border royalties and licensing fees. On the other hand by 1989 at least 40 developing countries did not grant either product or process patents or both for pharmaceutical product innovations. With TRIPS introduction in 1995, these countries were forced to move in one step from zero to twenty years of protection (UN Human Development Report, 1999).

Intellectual property industries receive rich dividends when the US Congress and Senate finally confirm legislation that considerably favors their interest. IP protection is now even possible for "ideas" and "expressions" that twenty years ago would not have been possible: chemicals obtained from ancient plants from tropical regions of the world including India, for genetic cells, for folkloric music, for business methods or even words like "Olympics" (Mudiwa, 2002; Schultz, 2004; Shiva, 1997). Is intellectual property actually becoming so tightly woven around new patents and copyrights among other forms such that they may begin to affect the fertility of the open public domain?

3. COPYRIGHT BARGAIN BETWEEN PROTECTION AND THE PUBLIC DOMAIN

Copyright grew in considerable prominence since the early 1990s, when the use of internet, closed source and open source software were beginning to alter the landscape of digital copying technology. Copyright is an important public policy tool for authorizing protection of any newly authored work. There are many aspects to protection authorized by copyright. Principally it includes the right to protect one's artistic expression, the right to make copies, authorize others, create derivative works such as translations, sell and perform works publicly and finally petition courts for relief in case others seek to infringe on any such right (Vaidhyanathan, 2003). There are many kinds of works covered by copyright. Some of them include: musical performances, literary works such as novels, poems, plays, reference works, newspapers and computer programs; databases; films, musical compositions, and choreography; artistic works such as paintings, drawings, photographs and sculpture; architecture; and advertisements, maps and technical drawings. Copyright work is framed in a specific medium of expression, for instance, either in the performative, analogic or digital forms.

It is essential, for our purpose here, to situate the debate on copyright protection within the terms of an original bargain between the state and the citizen. English Law was among the first to grant copyright protection as a right for authors of inventive works (Boyle, 1996; May, 2000). The basic idea was to provide an artificial monopoly or an exclusive state granted right to an author or creator for a fixed number of years in return for the work to mark a re-turn to the public domain at the end of its monopoly term. By providing exclusive protection through copyright monopoly, it is expected that an author would have better incentive to create original work. In this light it is interesting to observe that the US Sony Bono Copyright Act of 1998 has extended the copyright hold for an additional 20 years, to a total of 70 years after the death of an author. It was made possible largely due to the lobbying of Disney Corporation (US Sony Bono Copyright Act, 1998). One important safeguard that was introduced to sustain equilibrium between the protective and open domains was to acknowledge that general facts or ideas, such as basic principles

of natural sciences, cannot be copyrighted. It is only original expression of such ideas that can be protected.

A state sanctioned balance between protection and openness can be undermined if greater focus gets placed on the former as opposed to the latter. Original creators of copyright legislation understood the potential threat posed by long years of exclusive monopoly rights. For instance, Thomas Jefferson wrote about the irony of copyrights: "It's peculiar character ... is that no one possesses the less, because every other possesses the whole of it. He who receives an idea from me, receives instruction himself, without lessening mine; as he who lights his taper at mine, receives light without darkening me" (Vaidhyanathan, 2003). Lessig (2001b) also mentions an interesting detail on early US legislation, "When the United States was formed, the constitution gave congress the power to grant "authors" exclusive rights for their "writings" for a "limited time" to - as the constitution expressly states - "promote progress." The promote progress clause for copyright legislation, which commentators have variously attributed to giving importance to the flourishing of the public domain, is unique in the constitution's enumeration of powers; as every other clause leaves such a purpose unspecified; only this clause says what the power must be used for.

3.1 Fair Use, First Sale and the Romantic Author

One of the most vital measures of copyright was provided in terms of a "fair use" concept, which is the ability to use suitable portions of copyright material for various "private" purposes. For instance, such fair use covers non-commercial academic copying of texts and articles. The fair use doctrine meant that unauthorized but legal use of a copyrighted work was clearly possible. There are four non-exclusive factors that determine whether any particular use counts as fair use or an infringement. These four factors are: (1) the purpose and character of the copyright use, including whether such use is of a commercial nature or is largely for nonprofit educational purposes; (2) the nature of the copyrighted work itself; (3) the substantiality of the portion used in relation to the copyrighted work as a whole; and (4) the effect of the use upon the potential market value of the copyrighted work. A court examines these factors in judging the assertion of infringement by the copyright owner on the one hand and the assertion of fair use by the alleged infringer on the other.

Copyright legislation has also included the idea of "first sale", which broadly means that one can resell or lend, say a book, to who ever one wants at whatever terms deemed necessary by the reseller. One can briefly summarize by stating that there are three main stakeholders in the copyright debate: the state which is supposed to represent the best interests of the citizen and also protect the author or creator, the copyright owner who could be an author or a corporate entity owning the copyright and finally the large public itself. The state is supposed to play the balancing act between the interests of the public at large and the monopoly rights holder.

I have already mentioned the rallying cry of intellectual "theft" and the intense lobbying by related industries as crucial elements in providing an argument for strengthening copyright laws. Underlying the overwhelming corporate organizational support for stronger IP protection is an important conceptual assumption that begs closer examination. It springs from a strong embrace of the claim of an indisputable "originality" of the author in creating any new copyrighted work. The more one believes that an "author" has invested considerable energy in inaugurating a radical rupture from any prior work to produce something entirely original the more can the author claim the need for higher levels of copyright protection. The idea of such a "romantic author" at the center of earth shattering new creations has been subjected to considerable scrutiny. Is authorship really all that heroic? Is it not more of a social process? Critics have mentioned four factors that should limit the ability to claim such unquestionable originality: (a) the importance of a progressively more interactive medium that an author needs to constantly collaborate with, particularly in terms of the increasingly straightforward and easy access to prior work through newer forms of technology; (b) the importance of a rich public domain, whether in literature or in music, from which an author draws her inspiration; (c) that most authorial works are actually incremental rather than revolutionary in terms of their breakthroughs and (d) that IP owners are increasingly the publishers and large corporations who buy or lease out the IP rights rather than the authors or actual creators themselves and who are many times unequally dependent on the former for earning revenues for their

work. (Boyle, 1996; Toynbee, 2004). There are clearly therefore limits to claims of originality as expressed by copyright owners and advantageously used by them to argue for greater protection.

Given the apparently increasing odds in favor of protection and against the possibility of replenishing the public domain, what are the options available? It is clear that if the public domain is not constantly replenished there is considerable danger of it becoming infertile and unable to inspire new generation of copyrighted work or unavailable for unrestricted common use. The stream of copyright work remaining useful for the public domain will decrease by either protecting works too strongly or by undermining fair use provisions. Newer copyright legislation, principally being inaugurated in the United States appears to be doing this. It is my argued view that the struggle for the future shape of an important aspect of copyright policy is being fought principally in the west, the repercussions of which will be felt all over the world. So while copyright is being strengthened, the need for a corresponding copyduty to sustain the importance of the public domain is being gradually weakened.

4. COPYRIGHT CHANGES INTRODUCED BY RAPID TECHNOLOGICAL ADVANCEMENT

The legislative animation in US copyright laws is shifting towards granting greater protection and comprehensive “exclusive rights” to copyright owners. We are rapidly moving from an earlier era of unauthorized though legal use of copyrighted material to all unauthorized use as illegal (Litman, 2000). The 1998 Digital Millennium Copyright Act (DMCA) of the United States is a good example of a legislation many copyright oriented industries seek. The DMCA was ostensibly legislated in the United States in view of the recommendations made by World Intellectual Property Organization Copyright Treaty (WIPO) signed in 1996 by nearly one hundred and sixty countries. Many authors have suggested that the terms of DMCA go well beyond the general recommendations made by WIPO, especially in terms of the legislative support made available to the content providers within the copyright industry (Samuelson, 1999; Soghoian, 2003).

According to these critics, the law is unbalanced as it basically provides considerable power to the copyright content providers at the cost of the consumer’s access to information, especially with reference to her “fair use” rights. The owners can now legally put a cryptographic or technological lock around a work in order to control unauthorized access, or copying, or performance or display of the work. In such a case it is illegal to both circumvent that lock or to supply any product, service or technology that’s designed to help anyone else circumvent that lock. Any person “privately” engaged in the development or distribution of circumvention technology for digital media, which should be allowed under copyright’s “fair use” doctrine, is however at risk of being held criminally or civilly liable. Further, digital or internet enabled access can be even more tightly restricted with embedded software codes and shrink-wrap and click-wrap licensing agreements.

All former protections envisaged under US copyright laws are currently under threat with the shift to the digital domain. Stallman (2004) suggests that copyright’s role has been completely reversed. It was set up to let authors restrict publishers for the sake of the general public. Digital technology has transformed it into a system to let publishers restrict the public in the name of the authors. Under digital communications structure there are principally three new developments that have dramatically altered the nature of access of all information. These are: a) zero marginal cost of copying, b) zero cost of transmission especially over the internet and c) almost negligible cost of producing/posting new information on the World Wide Web. With such zero or near zero costs for reproduction and reproduction of information, the digital based industry feels threatened and wants to reduce “theft” and the attendant risks to its high rates of profitability. In such a new technological context, the “fair use” doctrine, a fundamental principle of copyright doctrine, is increasingly being seen as an aberration and could quickly become irrelevant or even illegal.

Few examples will help to highlight the newer issues with the DMCA legislation. In an earlier era, videotape machines were seen as a potential threat by some in the copyright industry as it allowed for users to tape television content without authorization for later personal viewing, referred to as “time shifting”. Samuelson (1996) provides an interesting interpretation given to the fair use concept by the US

Supreme Court: "Universal and Disney once sued Sony to stop distribution of its videotape machines, arguing that private noncommercial copying of their motion pictures by purchasers of Betamax machines was no more excusable than the theft of a necklace because the thief intended to wear it only at home for noncommercial purposes". "The Supreme Court", it appears, "pointed out that the person who steals a necklace deprives its owner of possession and use of the item, whereas the copying of programs off the air "does not even remotely entail comparable consequences for the copyright owner" (Samuelson, 1996). The Court held that it was "fair use" for consumers to copy programs off the air for time-shifting purposes. However in the present post-DMCA context US courts seem to be much less generous with similar provisions (Mulligan, Ozer and Nielsen, 2004).

There is now a plethora of "copy-protected" CDs that are appearing on the US marketplace (Rick Boucher, 2002). Over 10 million copy-protected discs are in circulation, according to Macrovision, a vendor of copy-protection technology. Sony has claimed that it has released over 11 million copy-protected discs worldwide. A significant proportion of all CDs released in the U.S. will be copy-protected by the end of 2004. The crucial question however is whether in the drive to insure protection against infringement is such technology going overboard by interfering with or preventing fair use expectations of millions of consumers. One cannot use such copy-protected discs on MP3 players, although making an MP3 copy of a CD for personal use is still deemed as fair use. The greater irony is that unlike the videotaping machines which allowed users to "time shift" for later viewing, a company that distributes tools to "repair" such unusable CDs, restoring to consumers their fair use privileges, will run the risk of lawsuits under DMCA's ban on circumvention tools and technologies.

Another example points out how Sony enforced a system of far reaching geographical restrictions thereby raising significant global anticompetitive issues. Sony attacked Playstation "Mod Chips" which are basically accessories that modify Playstation consoles to permit games legitimately purchased in one part of the world to be played on a games console from another geographical region. Sony sued the mod chip manufacturers simultaneously in the U.S., the U.K., and Australia. In the U.S., Sony sued Gamemasters, Inc., distributor of the Game Enhancer peripheral device, which allowed U.S. Playstation users to play games purchased in Japan and other countries. Although there was no visible infringement of Sony's copyright, the court granted an injunction under the DMCA's anti-circumvention provisions, effectively banning the use of a technology that would permit users to use legitimately purchased non-infringing games from other geographical regions (Fox, 2002).

Finally I would like to add that the DMCA also seems to allow for potential censorship by permitting copyright owners to force internet service providers (ISP) to remove any material from the internet and the World Wide Web if the copyright owner believes the material to be infringing in nature. This clearly has consequences for political freedoms that the internet enables for people around the world. The copyright owners can enforce removal of "adverse" material by simply sending the ISP a written legal notice stating in good faith that the material is infringing. If the ISP fails to quickly remove access to such claimed infringing material, the provider itself can become liable for any infringement that might be found. It is quite evident that most ISPs will rather err on the side of removing the claimed "infringing" material than challenge the copyright owner. What is interesting is that such demands for removal occurs without an independent judgment of whether actual infringement is in fact occurring. One notices that the only judgment is that of the copyright owner (Loren, 2000).

I am suggesting that stronger intellectual property rights being given to IP owners, enabled by new technological developments in the digital realm, will produce a marked shift in the erstwhile legislative poise between ownership rights and the needs of the public domain. The former will get enriched at the cost of the latter. It appears that there have already occurred four kinds of surrender of important copyright safeguards. These are: 1) the surrender of balance to greater industry control as evidence through DMCA induced litigation; 2) the surrender of the public domain to a greater serving of the private needs of large corporations; 3) the surrender of the due process of "republican" deliberation within the nation-state to a greater influence over policy making by large transnational organizations and 4) the surrender of culture as manifested through "fair use" to technology or new software coding of electronic locks (Vaidhyathan, 2003). The important question to ask is what does this digital shift in copyright expression mean for a developing country like India where the mobilization on issues pertaining to

copyright is negligible (Samuelson, 2002b)? Are we immune to such decisive changes given our geographical distance from the United States and given our still continued dependence on a non-digital medium?

5. IMPORTANCE OF THE PUBLIC DOMAIN – OPEN SOURCE TRADITION

My argument so far has been that the public domain is under threat from new forms of copyright protection envisaged by powerful copyright oriented industries of the United States. Their protective muscle can alter the digital landscape through intervention over the internet with encrypted software and anti-circumvention technologies. It is important for developing countries to recognize a threat that may at times appear distant on the technological horizon but can nonetheless have serious long term implications. The question I want to raise and attempt to address is can developing countries that are “lower down” on the ladder of technological growth take advantage of other, more open, paradigms of knowledge distribution. Ha-Joon Chang (2002), a theorist of “late development” has made an important intervention in the development literature. One important thread of his argument developed in his book, “Knocking away the ladder” is that developed western countries have literally resorted to blocking or knocking away the development strategies of developing countries that were once themselves used by the former in moving up the developmental ladder (Chang, 2002). Most of his examples refer to the foreign trade policy instruments that can be feasibly employed by developing countries at the present juncture. The blocking of initiatives generally happens through the developed world’s considerable control over international institutions which in turn exercise tremendous influence over developing countries.

Sometimes such control can also be exercised through domestic legislation that wittingly or unwittingly has global implications. I have argued above that such is potentially the case with the DMCA. Given such attempts at blocking or burdening the development strategies of developing countries, it becomes essential that such countries explore any and all such means that lessens their overt dependence on the developed world. I want to therefore make a case that there is a need for creating some degree of independence at the level of copyright policy for developing countries. Such self-determination within the area of copyrights is possible by creatively intervening in the mode of sustenance of the public domain.

5.1 Regulating the Internet

A public domain or what is sometimes referred as the commons is a social regime for managing a collectively owned resource (Heller and Eisenberg, 1998). The resource can be physical—such as public lands, forests, the Internet or the airwaves—or intangible—such as knowledge, ideas and creative works, as vested, for instance in public libraries (Bollier, 2003). One of the most visible and the most recently created commons in the world is the Internet. For instance the internet has helped launched many collaborative websites, newsgroups, open source software communities, online archives and peer-to-peer networks. Such commons are built on a larger ethic of openness, trust, sharing and collaboration. Almost anyone is free to build upon the work of others.

As discussed earlier under the DMCA regime, the internet as an area of commons is potentially under threat of becoming enclosed. The cyberspace is also simultaneously facing a different kind of threat. According to Lessig (2001a), newer restrictive regulations are coming into play as we move from the erstwhile narrowband service, provided by thousands of ISPs all over the world, to broadband service provided by a fewer number. As mandated by government policy of most countries, local telephone service providers, although owning the infrastructure, were prevented from interrupting the use of their wires for internet use through local dial-in-modems. This meant that the physical platform on which the internet was born was decisively regulated to keep it open, producing abundant innovation in the internet commons, something that has become part of the common folklore. However under the newer broadband regime the regulatory environment no longer appears to be the same. The cable industry, for instance, has no government ordained obligation to grant others access to their facilities, as compared to the requirement for the telephone companies. Cable industry has already made clear its intentions to discriminate in the kind of internet service that it will provide.

Two clear implications will emerge from the dual impact of DMCA and internet service de-regulation. Firstly, copyright owners and content providers will begin to exercise considerable control over global

information flow and possibly prevent newer innovations that challenge or threaten their established business practices. Secondly, as the global information commons gets gradually enclosed, developing countries development chances that could otherwise tremendously benefit from vigorous, enhanced and creative competition in the various forms of internet delivery mechanisms and newer content could be squandered. As Lessig (2001a) argues “there is no “local”, when it comes to corruption of the Internet’s basic principles.” We are going through a significant moment of transition in terms of global access to information. There is considerable degree more at stake for developing countries than the mere degree of profitability of many large copyright oriented organizations. The important question for developing countries to consider is what the alternatives are that can allow for the further replenishing rather than the depletion of the information commons.

5.2 The Open Source Project

There is a particularly promising innovation within the public domain, one that should hold much interest for developing countries like India. It started with the internet as its backbone in the early 1990s. This innovation began with the creation of the General Public License or GPL in short and was used eventually by many Open Source products including Linux. Section (2b) of the GPL license provides the pertinent note. It says:

You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License (Stallman, 2002).

GPL simply translates into, one can take the open source software – and copy, modify or redistribute it. But if copied, modified, or redistributed, one must not attempt to give anybody to whom one distributes fewer rights than one had in the original material (Moglen, 1999, 2003). One can even profitably sell open source software to consumers such as what Red Hat, a Linux vendor does, but without altering the basic GPL agreement. If any alterations are made to the software it must be put back into the general public license for others to gain from the alteration.

Now imagine for a while, as an exercise in sheer comparison, that back in the days when what was held to be good for General Motors was also good for the United States, an advisory committee of economists had recommended to the President of the United States that the federal government should support the efforts of volunteer communities to design and build their own cars, either for sale or for free distribution to automobile drivers. The committee members would probably have been locked up in a psychiatric ward (Benkler, 2002-03). Yet the Open Source Software [OSS] or the Free Software Movement that grew out of the GPL agreement did exactly this with a volunteer community and has had considerable practical impact. The fascinating question therefore is how does the Open Source Project (OSP) sustain itself against all odds and directly competes against the large proprietary copyrighted software monopolists such as MSN. Are there lessons to be learnt from this experience for the public domain at large? Can the philosophy behind the OSP inspire developing countries to experiment with and initiate changes in the manner with which they deal with copyright information?

To begin with a basic difference exists between the GPL and many Open Source Software packages in that while the former absolutely *requires* any redistribution of GPL software to be released only under the same terms as the basic GPL license, the latter simply *allows* redistribution under the same terms, but does not absolutely require it. So GPL insures that no GPL code can ever be used as part of a proprietary software project while that is not true with OSS. The GNU/Linux operating system, using the GPL license, has developed in a rather robust and stable way and is used by as many as 20 million people worldwide, with an annual growth rate of nearly 200%. The most recent Linux kernel contains more than three million lines of code. Although GNU/Linux is generally considered not yet sufficiently 'user-friendly' for the non-technically oriented user of personal computers, even Microsoft believes that GNU/Linux poses the most significant challenge to its current near-monopoly control of the operating system market. So strongly was the challenge felt by Microsoft that a high-level internal memorandum was circulated in the summer of 1998, which was subsequently leaked and became known as "the Halloween Memo" (Raymond, 1999a). It portrayed GNU/Linux as a direct short term threat to Microsoft's revenues and to its quasi-monopolistic position in some markets. MSN is not the only company that has taken GNU/Linux seriously. Most large

IT corporations including HP, Sun, Motorola and IBM have made major commitments to using the GNU/Linux code. There are also exclusive profit oriented companies such as Red Hat and VA Linux that provide basic services with the GNU/Linux software. They had two of the biggest IPOs of 1999 (Weber, 2000). An Open Source based web-server named Apache dominates its market with over 60% of the web servers and continues to grow relative to proprietary alternatives such as MSN's Internet Explorer. OSS is also doing well in the appliance market.

5.3 The Operating Principle of Open Software Project

Ever since Linus Torvalds released the first incomplete kernel of Linux on the internet in 1991 there has been literally no looking back. By 1994, Linux had reached version 1.0, representing a usable production kernel. Level 2.0 was reached in 1996, and by 1998, with the kernel at 2.2.0 and available not only for x86 machines but for a variety of other machine architectures, GNU/Linux - the combination of the Linux kernel and the much larger body of Project GNU components - and Windows NT were the only two operating systems in the world gaining market share (Moglen, 2003) A large, complex system of code is being built, maintained, developed, and extended in a nonproprietary setting where many developers work in a highly parallel, relatively unstructured way and without direct monetary compensation. Open Source has a "scale of collaboration among geographically dispersed unpaid volunteers previously *unimaginable* in human history" (Moglen, 1999).

Three crucial questions must be raised and addressed for analyzing the Open Source Project as a relevant alternative to a copyright dominated information regime. What is the basic motivation of individuals working for OSP? How is such a large project coordinated and finally how is the complexity of the project sustained over time-spans of more than a decade? Answering these three questions in considerable detail will not be possible in the limited space. I will however summarize the main insights provided by earlier commentators, chiefly Weber (2000).

Why would talented programmers in large numbers choose voluntarily to allocate some time to a project for which they will be, for all practical purposes, rather inadequately compensated? Though some of the top core programmers do get paid at the places of their "daytime" work, for instance Linus Torvalds gets paid by Transmeta, such compensation does not explain the volunteering effort done after work. The political economy of the copyright industry suggests that people will not work unless they have strict property protection and economic rewards for their work, yet then how do we explain the phenomenon of thousands of programmers working voluntarily. Much of the community of developers that contribute to GNU/Linux is geographically far flung, rather large and quite international: the contributors come from at least 31 different countries.

Among the important characteristics that motivate the individuals revolve around issues of a widely available and transparent structure of the OSP. There is always the real promise of learning from something interesting and dramatic happening as opposed to the proprietary software work environment where there is much greater central control and hierarchy. The Open Source Project is becoming increasingly associated with greater value, prestige, reputation and work satisfaction within the software programmer community.

Studying how a complex Open Source Project is internally "coordinated" can also be a fascinating exercise. Most of the programming is disaggregated into parallel modules with extensive networking being the norm. Thanks to the internet such disaggregated networking among far-flung participants is not at all a problem. The Internet has definitely lowered transaction costs dramatically as an IP connection is all that is required to instantaneously access a variety of tools for participation in open source development. The main coordinating role is currently taken up by Linus. His authority which has been earned by his consistent and high value commitment to the project is taken as the starting point for any problems regarding coordination. Linus apparently goes to great lengths to justify his decisions, with excellent documentation.

Finally, how has Linux managed the complexity of its situation with thousands of programmers dispersed in different parts of the world? This is all the more amazing when there is no tradition of a hierarchical command and control structure as in proprietary software production. Managing conflicts in an able and

fair manner is of the greatest importance in the OSP. Eric Raymond, an avid participant and commentator of the project, has observed that conflicts appear to center on three kinds of issues: a) who makes the final decision if there is a disagreement about a piece of code; b) who gets credited for precisely what contributions to the software and c) who can credibly and defensibly choose to 'fork' the code (Raymond, 1999b). Forking the code means the ability literally to take the programming in a new direction that suits the specific inclinations of the programmer. It needs considerable expertise and authority to fork the code as there is bound to be challenges from other programmers. Authority or ownership over the open software project does not come easy.

There are three ways in which someone (or some group) can acquire ownership of an open source project. The first way is simply to have started the project – and so long as the founder is active, that person is the clear owner. The second way is to have ownership delegated on to someone by the existing owner. The owner, it is expected will responsibly delegate the project to a competent successor when the original owner no longer is willing or able to perform his or her role in development, maintenance, and leadership. The third way is to pick up a project that needs work, where the owner has lost interest or otherwise moved on, and demonstrate one's competence. It is customary to make substantial public efforts to find the owner and wait a reasonable period of time before claiming new ownership. It is also generally recognized that ownership acquired in this third way is not the most legitimate until the new owner has made substantial improvements to the project and brought them out to the open source community (Raymond, 1999b).

What are some basic conclusions that one can make from the organizational success of the Open Source movement? It clearly allows for free re-distribution of software without royalties or licensing fees to the author. It requires that the source code be distributed with the software. It also allows anyone to modify the software or derive other software from it, and to redistribute the modified software under the same terms. In all these basic attributes, open source software is dramatically different from proprietary or copyright software and thus in a rather challenging way the former is a truly unique experiment in sustaining the public domain (Benkler, 2002-03). The power of Microsoft, on the other hand, rests entirely on its ownership of the Windows source code. Microsoft, although a wealthy and powerful corporation and employing a large number of programmers could not for many years retain a large number of testers, designers, and developers required to produce flexible, robust and technically-innovative software appropriate to the vast array of conditions under which personal computers operate (Moglen, 1999).

5.4 Peer to Peer Open Source Collaboration

One might add just for the sake of emphasis that peer to peer collaboration over the internet is not limited to the creation of open source software. There are many other interesting projects: an especially interesting one being the Wikipedia which basically involves two thousand volunteers collaborating to write an encyclopedia (Benkler, 2002-03). The project runs on a free software collaborative authorship tool, Wiki, which is a markup language similar in concept to HTML, but much easier to implement and focused on permitting multiple people to edit a single document and interlocking documents, while generating archives of changes made to each. While 2000 people have not been able to generate a complete encyclopedia in roughly 18 months of operation, they have made substantial progress, producing about 30,000 articles, and readers are invited to test their own evaluation of the quality.

Peer to peer collaborative technologies have also spread rather rapidly in the field of online music distribution. Janis Ian (2004), a musician, makes an interesting comparison of the revenue generation between the conventional delivery models of the copyright music industry and the on-line collaborative system. He states:

"The music industry is up in arms over the fact that it is harmed by free downloads. Nonsense. ... When Napster was running full-tilt, we received about 100 hits a month ... Of those 100 people, 15 bought CDs. ... No record company is [merely] interested in 180 (15x12) extra sales a year. But in my book that translates into \$2700, which is a lot of money to me. ... Face it – most people can't afford to spend \$15.99 [buying a CD just] to experiment. The music industry should be rejoicing at this new [on-line] technological advance!"

In other words for musicians like Janis Ian the writing is on the wall and the music industry would be prudent to take adequate notice. More fascinating for me is the fact that there appear to be numerous collaborative projects that have succeeded in sustaining themselves in rather hostile terrain. Some of these ventures have even gone beyond the expectations of the early critics. These explorations within the medium of a non-copyright or a considerably attenuated copyright regime, as compared to the DMCA, should provide scintillating evidence to developing countries for also taking different, non-conventional kinds of ladders for the development of their information commons. There is much at stake in the kind of path that a developing country will ultimately take.

6. CONCLUSION AND IMPLICATIONS FOR THE PUBLIC DOMAIN

I have argued that if one takes away or weakens the public domain part of the argument from copyright debates, as the current copyright picture indicates, then one is only left with the producer's rights and the need to protect them at all costs. This spawns a system of considerable closure, protection and litigation. Intel's annual litigation budget by the early 1990s, for instance, was believed to be at least \$100 million.

Let us remember that the original idea of a copyright as an artificial monopoly created by the state to motivate authors and creators had another very important side to the bargain, namely that the copyright must relapse into the public domain so as to provide a fertile imaginative soil for the next generation of IP owners. By awarding less stringent protection to intellectual property rights, in terms of both the number of years and the severity of the protection, copyright works can get back as quickly as possible into the public domain and thus allow consumers greater latitude in favorably using the doctrine of "fair use".

The public domain can be also be enriched through creative non-copyright initiatives as such illustrated by the specific example and success of the GPL agreement. Through such explorations in strengthening alternative and "open" modes of information transaction between people, developing countries can chart a different path. An information commons with greater possibilities of openness and feedback with collective participation and decision making must be allowed to thrive (Bollier, 2002).

James Boyle (1997, 2000, 2003) has made an important suggestion on the need for a new economics and politics of intellectual property. Boyle insightfully points out that in the 1950's there was no mobilizing concept of the "environment." It took a while for society more generally to realize that it had a common interest in the preservation of nature. The concept of the "environment" was thus invented, and this concept in turn enabled a powerful political movement to protect it. What is needed, Boyle (1997) says, "is a similar movement to protect the intangible interests we all have in an open information environment, in robust public domain, and in balanced intellectual property law." If intellectual property rights protection were to get very strongly enforced, it will disrupt an already beleaguered information ecology.

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