

Copy Right Infringements in Cyberspace: The Need to Nurture International Legal Principles

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Abstract

Copy right violations have become rampant since the advent of Cyberspace and the development of related information technologies. Numerous factors like ease of sharing digital content, low cost of distribution and download, lack of supranational authority to regulate, difficulties in tracing violators, uncertainties in determining jurisdiction over infringing acts, etc., have contributed to increasing copyright infringements. Various stakeholders are faced with the dichotomy of new opportunities and threats related to copy rights in cyberspace. Unique opportunities offered by new technologies call for effective solutions to counter relevant threats, than to wither cyberspace. This paper investigates the scope and limitations of legal regimes in combating copyright infringements in cyberspace. The paper first identifies relevant opportunities and threats related to copyrights in cyberspace. Secondly, the paper analyses various legal challenges pertaining to copyright protection in cyberspace and investigates the role of domestic copyright regimes. Finally, the paper examines the viability of international legal regimes in providing solutions to various challenges identified.

Key Words: Digital Copyrights, Copyright Infringements in Cyberspace, Legal Challenges in Digital Copyrights,

Limitations of Domestic IPR Protection, Role of International IPR Regimes.

1. Introduction

“Spider Man” struck the web before he hit the screen! “Star Wars” started on the net before it broke on the screen! Pirated copies of these Hollywood blockbusters were reported to have been distributed on the Internet even days before their intended release. As a consequence, analyst predicted that up to one million people would have freely watched these films before they were officially released. Copyright threats are not limited to few blockbusters but are rampant in cyberspace, affecting a range of digital products. Moreover, flagrant violation of copyrights is just a tip of the iceberg of a much serious problem of Intellectual Property Rights (IPR) threats in the Internet.

The advent and growth of Internet has resulted in the creation of an unruly and anarchic space called the cyberspace, which poses extremely serious threats to copyrights. Threats to copyrights existed even before Internet, however, they have manifested at alarming levels since the advent of World Wide Web (WWW). The increased levels of copyright threats in cyberspace could be attributed to some of the unique characteristics of the Internet, the new possibilities it creates and its unprecedented growth worldwide. For

example, the ubiquitous nature of Internet often makes it difficult to trace or attribute copyright violations to a particular jurisdiction.

Internet is a two edged sword for business fraternity. On the one hand, business firms look for greater development of network technologies in order to increase the viability and quality of digital content delivery. On the other hand, the growth of the very technology has resulted in increased levels of violation of their IPR. For example, increase in broadband speed, while enabling faster and efficient delivery of digital content, increases the risk of widespread copyright violations. Development of related technologies like bit torrent in a broad band environment enables unauthorised high-speed and simultaneous multi-source transfers of large amounts of data. Such technologies, while offering new opportunities for businesses, have the potential to act as a tool for flagrant copying and illegal distribution of copyrighted materials. As network and Internet technologies continue to evolve, the magnitude and multiplicity of IPR violations continue to grow. In spite of copyright threats and other challenges that remain, Internet is hailed as one of the best innovations since the industrial revolution and an indispensable business channel for the future. Research as well as experience shows that Internet is inevitable for various walks of life including business operations. Under such circumstances there are increasing calls to seek solutions to the growing copyright threats rather than to quit cyber space. This paper addresses the copy right threats that emanate from cyberspace and identifies the ensuing legal challenges. The paper aims to investigate the scope and limitations of legal solutions offered by different legal regimes in domestic and international context.

Firstly, the paper looks into the various opportunities and threats relevant to copyright holders in the Internet. Internet provides copyright holders with new opportunities to exploit their rights. However, if the ensuing threats outweigh the benefits, such opportunities will be unattractive and underutilized. Legal regimes are called for to take cognizance of the new range of threats and address them in order to facilitate the exploitation of the new opportunities. Therefore, the paper addresses the scope of new opportunities and the extent of threats that emanate from the Internet. This is expected to lay the foundation for the subsequent analysis as to the viability of the different legal regimes to address the identified concerns.

Secondly, the paper identifies relevant legal challenges in combating copy right threats in cyberspace. Although the issues of copyright protection are quite settled in the conventional IPR context, copyright issues in cyberspace create a range of new challenges. Addressing these legal challenges will be the major tasks of both domestic and international copy right regimes. Based on various threats and legal challenges identified, the paper will probe into the viability of domestic and international IPR legal regimes to address the cyber IPR challenges. The paper will probe into some relevant limitations of domestic legal regimes in offering copyright protection in cyberspace. In this process, reference will be made to domestic legal systems in general and no single system will be the primary focus. In the international context, two major legal regimes namely the World Intellectual Property Organisation (WIPO) regime as well as the World Trade Organisation's (WTO) Trade Related Intellectual Property Rights (TRIPS) regime will be primarily examined. The strength and weaknesses of both these regimes will be analysed and the effectiveness of both the regimes in

addressing cyber IPR challenges will be tested. Other relevant international regimes pertaining to copyright protection will also be referred to.

2. Opportunities v Threats in Cyberspace

Venturing regional or global markets use to be a prerogative of mainly big business firms and multinational corporations (MNCs) before the advent of WWW. The exponential growth of WWW and its potential for global market reach has enabled even smaller firms to target global markets. The parallel growth of personal computing devices, affordable to individuals, has enabled the WWW to expand its tentacles to households and thereby create easier access to a large pool of individual consumers worldwide. The information superhighway so laid, transgresses national borders virtually merging different geographical markets into one single market. Ironically, the WWW not only acts as a superhighway for information sharing but also creates opportunities for content delivery, payment of price etc online. These unique features have particular relevance to copy righted digital products. Unlike some products and services, where WWW mainly acts as a marketing or advertisement network, for digital products it has the potential to act as a complete business channel.

The global reach of markets, in general and the personal reach of consumers, in particular made easier by the WWW had created a range of opportunities for not only business firms but also to individuals dealing with digital contents. Individuals' works of art and the writers of software were enabled for the first time to exploit their work globally with out the need for distributors, retailers or middlemen. Like individuals, the small and medium size business firms, who

were once confined to limited geographical markets, now saw the new opportunities to reach virtually any market in the world. Internet broke the stigma that only "global companies have global market access" by enabling many small business players to compete globally through relatively lower investments and costs.

Internet enabled global reach had indeed prompted a spate of new players as well as new forms of services entering the markets in almost all industries. Innovation was the buzz word and sky was the limit for dot com firms, who mushroomed during the hay days of Internet boom. Although many dot com firms witnessed disastrous fall since the boom, it was attributed mainly to the business models of respective dot com firms than the Internet itself as a potential business channel. In spite of the dot com failures, Internet continues to strive with more and more conventional business firms exploiting its potential at different levels of their business processes.

The benefits of global access made possible by the Internet, is not just limited to the firms who offer products and services but also to the consumers. The consumers have global reach too, in their look out for products and services made possible through Internet. Cyber savvy consumers has greater choices and reach for products and services from virtually any part of the world than the conventional consumer, who had to be content mostly with what was offered in proximity. Thus the global reach is a two way process benefiting both ends of business interests as well as consumer interests. However, new opportunities came along with new threats.

The threats that emanate from the characteristics of Internet are multifaceted. Not only business firms and consumers face new threats but also the society at large.

Business firms are exposed to increased competitions and a range of threats relating to different façade of their business operations. Threats to copyrights are classic example. The very fact that the Internet has a global reach exposes the copyrights held by business firms and individuals to unprecedented threats, many of which are highly difficult to monitor, trace and clamp down. Similarly, consumers while availing more choices and reach for global products and services are exposed to serious threats related to online fraud, security of financial transactions, individual privacy etc, the origin of which is global and again difficult to trace. The society at large pays its price too by the very fact that the impact of the intrusion of Internet into different walks of life and sections of society have resulted in many social repercussions and are highly difficult to measure or monitor. The growth of Internet and the explosion of activities in it, therefore, have proved to be difficult to regulate.

Various other specific opportunities created by Internet and their parallel threats are widely identified. Many of these opportunities have implications for copyrighted digital products. One of the areas, where Internet has proved to add value and increase efficiency for business firms is in logistics. "Just in Time" business strategies enabling the supply and distribution of goods and services on time have been made easier with Internet. This concept is even more efficient in case of digital products, where instant delivery of digital products to ultimate consumers could be carried out with out much or any logistics involved. However, this new opportunity for spontaneous delivery had increased the scope for piracy and free distribution of copyrighted products. Internet had eliminated the risk of running out of stocks of digital products, if they were to be stored in conventional medium like a tape or a

compact disk and then stored in a store for sales. However, Internet as a channel for delivery of digital products had opened up the Pandora box involving a range of threats including unauthorized online public broadcasting, deep linking and free access to copyrighted products, illegal sale and distribution of copyrighted products, etc.

Online and instant payment mechanism is often heralded as one of the new opportunities created by Internet for increased cash flow for business firms. But the security implications and the subsequent consumer lack of trust on online shopping are well known. Internet is said to have reduced the gestation period for the launch of new businesses or products. It is relatively easier to start up a new business or introduce a new product, which is no doubt a great opportunity for new players and small firms, particularly in the digital products sector. However, this had resulted in lowering the entry barriers, prompting competition from virtually any part of the work. Even individuals writing their own software codes could now compete with major business firms dealing with digital products. Although branded digital products may not feel the pinch of the competition emanating from small software developers or individual code writers, threats could manifest substantially if they are offered as freeware. Freeware distributors or developers, who share the software codes freely, may not be able to threaten big players with out the low cost distribution made possible through Internet.

Internet has brought in apparent cost reductions and increased productivity for business firms. However, it is argued that use of Internet for online sales lack the human factor present in traditional sales, which is more ideal to ascertain and respond to consumer tastes. Also consumers may not be able to personally feel and appreciate most of the products before they could make a

decision to buy. This could be particularly striking in certain types of products like works of art, which could be subjected to online sales. Consumers may fail to appreciate the worth of an art online as much as they might do in person. In that sense, the valuation of a copyrighted work might be diminished if sold online. As the technology continues to evolve and grow, newer opportunities with even more threats are bound to arise, many of which are no doubt will have copyright implications.

The opportunities v threats discussed here are limited only for the purpose of demonstrating that use of Internet for exploiting copyrights involves apparent costs and benefits. In order to ensure that the benefits outweigh the costs, various related measures are needed to improve Internet as a viable channel for E-commerce in copyrighted products. Various measures are being adopted to increase the utility of Internet for exploiting copyright. Often technological measures are adopted to protect copyrighted products online. Unfortunately, technological measures to protect copyrighted products are often vulnerable to other circumventing technologies and could not provide a fool proof protection. Although protection technologies are increasingly becoming inviolable, relying solely on them may not provide a total guarantee. Often other measures are needed to supplement technological measures in order to consolidate copyright protection in cyberspace. There are a range of measures, which could be relevant in this context. They include policy measures to strengthen copyright protection, social measures to educate consumers against piracy, economic measures including support programs to encourage the use of licensed copyright protected products, punitive measures to discourage copyright infringements, etc. Different set of measures have a different

utilitarian value and they together help develop stronger copyrights protection in any given society.

Among various measures highlighted above, the role of legal measures in improving the copyright protection in cyberspace is increasingly found indispensable. The relative significance of legal measures is due to the apparent limitation other measures may suffer. Copyright threats emanate globally due to the international character of cyberspace and any measures to improve copyrights protection should have a potential to create a positive influence globally. Not all types of measures may have this potential. Social or economic measures, for example, may often be effective in a given society but may not create a global impact. Legal measures on the other hand could be an effective set of tool in improving global protection for digital copyrights. Legal measures to protect copyrights in cyberspace, however, face different challenges which need to be addressed effectively. One of the challenges is related to the international character of Internet, which warrants international legal solutions. Cyberspace is international in character. The opportunities and threats also emanate internationally. Therefore, a logical hypothesis could be drawn that effective protection of copyrights in cyberspace can only be guaranteed through a strong international copyright legal regime. In order to verify the hypothesis, the paper will identify the legal challenges pertaining to copyright protection in cyberspace and test the strength and weakness of relevant international legal regimes in addressing those challenges.

3. Legal Challenges related to Copyright Protection in Cyberspace

Threats to IPR in cyberspace are rampant. This leaves legal fraternity with

various IPR challenges. These challenges are more often difficult to identify and address. As technology continues to grow, new business applications and online business strategies are being developed, and this continuous state of flux does not leave much room for legal manoeuvre. Internet as such is relatively a new field for legal regulation. It may not be an exaggeration to observe that the cyberspace created by Internet is still anarchic and even the general legal attempts to regulate the same are still in its rudimentary state. Moreover, legal principles relating to E-commerce operations are generally slow to develop. The slow legal response could be attributed to various reasons including the continued evolution of cyber technologies, the infancy of E-commerce operations, digital divide among and within nations, lack of consensus with regard to standards of protection and methods of regulation, etc. IPR protection in cyberspace is no exception. The slow adaptation of legal regimes to cyberspace environment is particularly striking in case of IPR. Added to the fact that countries generally do not feel the need or urgency to regulate cyberspace, many of them tend to disagree with regard to the standards of IPR protection. This has left many domestic legal regimes with little or no specific norms addressing IPR in cyberspace. Among various forms of IPR, the threats to copyrights in cyberspace have gained particular prominence due to the commercial potential of cyberspace for digital products. Specific legal challenges related to copyrights in cyberspace need to be understood clearly before investigating whether existing copyright regimes are equipped with effective provisions to address the challenges.

Many legal challenges relating digital copyrights are highly technology oriented. Internet technology had created whole new methods of exploitation of copyrights.

Copyright holders could exploit their rights in a whole new range of technology-enabled means. Likewise, technology enables consumers to access copyrighted works through new means and methods. Since the common enabler for newer forms of copyright exploitation as well as its consumption is technology, any attempt to regulate either one of these activities tends to beg the question what happens technically?

Although, more often it is possible to define the technical process behind a particular cyber transaction, the challenge still remains in defining the transaction legally. The classic example, in this context could be the question of whether copyright violation takes place at different stages and processes when a copyrighted work is transmitted in a network and accessed by computers. Technically it is possible to define and identify that. When a copyrighted work passes through different nodes in a network, a temporary copy is made in each of the intermittent computers or nodes. Also when the work is accessed in a particular terminal, a temporary RAM copy is made through caching even if the work was as such not saved intentionally (Trotter, 1997). The question of whether the involuntary, automatic copies made, amounts to the breach of a copy right is a question, on which different jurisdictions may take different views. This demonstrates the difficulty that although the underlying technical process is understood clearly, the legal challenge may remain (to legally define whether a copy right violation takes place or not). Apart from the issue of violation, the questions relating to the nature, meaning, and scope of copyrights rights are not clearly settled in the context of cyber space. Therefore, one of the major legal challenges in digital cyber copyrights today is definitional and consensus may not be reached quickly and easily due to the infancy of the relevant legal regimes.

The next set of legal challenges in regulating copyrights in cyberspace is related to the ubiquitous and cross border nature of Internet. This set of challenges can be highly technology oriented. Firstly, it should be technically possible to identify the source and access of copyrighted works to specific legal jurisdictions. The mere fact that a particular cyber transaction may involve networks and nodes across various borders would leave the transaction quite complex. Even if the technological feasibility exists to trace activities related to a copyrighted work to a particular jurisdiction, often there may be no domestic legal provisions addressing cyber IPR issues. Some domestic legal regimes are attempting to bring in their first generation of cyber laws, many of which tend to be general or in some specific areas like recognition and enforcement of electronic transactions. Domestic IPR regimes addressing IPR in cyber space are relatively limited and often disparity may exist. Even if there are domestic measures, technological feasibility exists to surpass national governments or regulation (Wu, 1997), casting doubts about their potential to protect cyber IPR. Moreover, many domestic jurisdictions have relatively new or newly standardized general IPR regimes (influenced by international regimes like WTO), which hardly address cyber specific IPR. Therefore, even though the trans-border nature of the Internet transactions may point to conflict of law solutions (to resolve questions of jurisdiction and applicable law), (Driscoll, 1999) the drain or disparity in domestic IPR legal principles makes it a less viable option. The WIPO itself affirms that a relatively limited attention to the conflict of law solutions in IPR is mainly due to three factors namely 1) the territorial nature of the IPR systems 2) the need for introducing minimum IPR standards across jurisdiction and 3) the reliance of IPR system on registration as a means of enabling protection of certain rights. (WIPO, 2002).

The limitation of conflict of law solutions therefore reinforces the need for a vibrant international legal regime protecting copyrights in cyberspace.

A major legal challenge pertaining to protection of digital products is related to the scope and limitation of the legal protection granted by traditional copyright laws. Traditionally, copyrights are perceived as exclusive rights conferred on the authors of literary and artistic works, to reproduce, distribute, perform and display their works publicly. Copyright laws protected the expression of the ideas by authors and unlike patent rights did not protect the ideas themselves or other related interests. However, in case of certain digital products like computer programs or databases, the scope of protection offered by traditional copyright laws is considered to be insufficient. This is mainly because of the new technologies, which have created range of possibilities for exploitation and use of digital products that often make the scope of protection insufficient. Legal regimes are forced to conceive new ways of protection of digital products, which often go beyond the scope of protection offered under traditional copyrights laws. Similarly, the traditional way of filing copyrights protection is also challenged by cyberspace. Before the advent of cyberspace, authors of works filed copyright protection in individual markets, where they intend to exploit their works. Such protection was limited to the jurisdiction of the markets where copyrights are granted. In the virtual world of cyberspace the demarcation of individual markets are often blurred and the need to protect copyrights beyond individual markets arise. However, it would not be practically possible to file for copyrights protection in all conceivable markets, where cyberspace could reach. Even if such a measure were to be taken, the resulting protection may not be uniform, given the diverse standards of

protection offered by domestic regimes. This unique legal challenge created by cyberspace call for the development of international copyright regimes addressing digital copyrights.

The case of copyright protection to digital products has the potential to tilt the fine balance copyright regimes aim to achieve traditionally. The philosophy behind legal protection of copyrights is to strike a right balance between the need to stimulate creation through grant of copyrights to authors and the need to ensure the interest of the public to access information. The fine balance is achieved through granting rights and imposing limitations for both creators as well as the public. The creators are granted certain exclusive rights as referred before, however, limiting them to a specific duration and subjecting the rights to a fair use principle. The duration limitation makes the copyrighted work available in the public domain after the expiration of a prescribed period. Once a work is in the public domain all the exclusive rights of the creator comes to an end and could be freely copied by the public.

The fair use principle enables the public to avail a "fair use" of the copyrighted works even during the period, when the creator of the work enjoys the exclusive rights. What amounts to a fair use is often a subject matter of debate and may differ among countries, although certain uses including citing in academic works etc are generally considered to be a fair use. The interest of the public to access information is often guaranteed through these limitations imposed on the exclusive rights of the copyright holder. Similarly, the interest of the copyright holder is guaranteed through the prohibition of copying until the work is in the public domain and the restrictions of use within the threshold of a 'fair use'. However, as digital and network technologies continue to evolve

the point of balance between different interests are often challenged. Technological means are often utilized by both interests to breach the traditional limitations that are imposed aiming at striking a balance. Copyright holders, for example, use a range of new technologies in cyber space in order to restrict access to their works that could have the potential of denying the fair use, which is otherwise permissible. Similarly, a range of technologies are at the disposal of the public that enable them to easily access copyrighted materials in cyberspace, which often breach the limitations of fair use. The new technology enabled possibilities threaten to tilt the balance traditional copyright regimes aim to achieve. This is one of the major challenges legal regimes face with regard to the issue of protection of copyrights in cyberspace.

Issues of 'fair use doctrine' and 'implied licensing' are bound to raise debates in case of digital copyrights in cyberspace. Whether linking a copyrighted works online is a fair use and whether the fact that some one has made an IPR work available on the Internet amounts to an implied license etc, are some of the arguments that are bound to arise in dealing with copyrights in cyberspace. A related legal challenge that arises with regard to copyright protection in cyberspace is the need for refining the fair use principles suitable for online context. It is argued that the means of access and methods use of copyrighted products in an online environment have expanded and therefore there is a need for corresponding expansion of the fair use doctrine reflecting the online reality. However, such calls are increasing resisted by digital copyright interest groups, who argue the contrary. Given the increasing threats to copyrights of digital products in an online environment, copyright interests even call for the abolition of very doctrine of fair use. This is one of the interesting examples, which demonstrates how arguments relating

to the scope and limitation of copyright could differ between traditional media and cyberspace.

One of the fundamental challenges related to copyright protection is the diversity in legal principles and regulation of copyrights in different domestic jurisdiction. Although, international legal regimes like the Berne Convention on copyrights exist, diversity in domestic copyrights protection continues to exist. A classic example in this regard is the duration of copyrights granted to the authors, where in spite of the prescription by the Berne Convention, diversity continues to exist among independent countries. Such diversity existed even before the advent of Internet. Legal principles relating to cyber copyright protection is no exception. Even though some international treaties addressing digital copyrights have been agreed among nations, diversity is witnessed in domestic implementation of the treaty obligations. Moreover, many countries have hardly enacted any legal provisions specifically addressing digital copyrights. So diversity in legal protection and lack of digital specific copyrights in domestic jurisdiction is one of the legal challenges facing copyright protection in cyberspace. A related challenge pertaining to digital copy rights in cyberspace is the enforcement. The open environment of Internet and freedoms enjoyed in information super highway, often prompt fears regarding effective enforcement.

Some of the major legal challenges relating to digital copyrights protection arise from the unique characteristics of cyberspace. The international character of cyberspace creates the need to promote copyright protection for digital products in different domestic legal regimes. However, measures to stimulate individual domestic regimes to create digital specific copyrights

or to update existing laws are received with mixed response. The existence of digital divide between developed and developing world does not create the urge for the latter to introduce legal regimes addressing digital copyrights. Moreover, developing countries often perceive copyright protection to be mainly beneficial to developed countries, since major copyright holders typically originate from the developed world. Therefore, it is often challenging to convince different domestic jurisdiction around the world to update or introduce legal regimes to protect digital copyrights.

Another characteristic of cyberspace involving third parties (other than copyright holders and the public), in the exploitation and access to digital products creates the whole set of legal challenges. Unlike the conventional environment relating to an IPR transaction, cyberspace involves the role of many intermediaries. Online service providers play an important role in providing necessary infrastructure for the copyright holders to exploit their digital products online. Similarly, Internet Service Providers (ISPs) provide the basic access to Internet and the ultimate access to copyrighted products. The role of these intermediaries and how they should be regulated is a major challenge for legal regimes related to digital copyright protection. The role and liability of intermediaries like the ISPs and other service providers with regard to attributing contributory infringement will prove to be highly challenging (Kostyu, 1999). The debate is divided as copyright interests urge for the liability of intermediaries, while service providers oppose the same. The role of the service providers in an infringing scenario may range from their servers being used for hosting infringing materials to their network being used to transmit infringing content. Similarly, the infringing act may take place with or without actual knowledge of the service providers. Legal debates exist

with regard to imposing liability on service providers in each of the different scenarios based on their degree of involvement and the knowledge of the act. It is a major legal challenge to bring consensus among different regimes with regard to imposing liability on service providers related to copyright infringements in cyberspace.

As discussed earlier, the technological developments often enable the public to easily breach copyrights in cyberspace. The availability of circumventing technologies in particular and the vulnerability of information technology in general often raise legal concerns in effectively protecting the interest of copyright holders. Legal regimes are increasingly prohibiting the use of circumventing technologies, which may provide access to copyrighted works or may enable various forms of use other than what might have been licensed by the copyright holder. However, the development is not uniform among various domestic jurisdictions and this causes a specific legal challenge. A circumventing act, which is illegal in a domestic jurisdiction, may be totally legal in another jurisdiction. In the cyberspace scenario, which is international in nature, the diversity in legality of the act causes a major legal challenge, which is not easy to resolve. The legal challenges that emanate from technology are not confined to the public, who access the copyrighted works using circumventing technologies. The issue is equally challenging with regard to copyright holders using technological means to avoid statutory requirements. Copyright holders increasingly adopt a range of technical means, which are capable of denying even fair use permitted by legal regimes. Often such measures may totally deprive the public from having any access to the relevant work, which defeats the fundamental objective behind the philosophy of granting copyright protection. Moreover, copyright holders could deny access to

certain fundamental elements of the copyrighted works in order prevent users to from modifying the work suitable to their specific needs. The good example in this regard is software licensing. It is increasingly common not to disclose the source code in order to prevent reverse engineering or restrict their use only to contemplated applications. The non disclosure of source code by copyright holders is also a subject of debate, which challenges the right of copyright holders to limit potential use of licensed products. Similarly, technological feasibility to introduce terms and require users to accept them before use of digital products often enables copyright holders to circumvent statutory requirements.

Introduction of licensing terms for access and use of digital products both in online and offline environment are increasing becoming common, which poses a striking legal challenge. Technical feasibility to permit the use or access to digital products upon the condition of acceptance of licensing terms introduced by copyright holders is increasingly encouraging them to choose contractual regimes in protecting their rights. However, the choice of such contractual regimes often overrides statutory requirements to allow a minimum threshold of access or use. Particularly, such contractual regimes could enable the copyright holders to stringently restrict the use of the licensed works, even to the extent that many technical consequences of using them online could amount to the breach of the license. By the virtue of the characteristic of a contractual regime often users, who accepted the terms, may not be able to demand from the copyright holders more than what is undertaken in the contract. The increasing use of shrink-wrap licensing or licensing terms for online use or access are increasing posing legal challenges to different legal regimes. Naturally, the debate is divided as to the need to regulate such

contractual regimes in order to discourage their use to circumvent statutory requirements relating to copyrights. The extent to which the contractual terms could be allowed to circumvent copyright statutory requirements also differs between domestic legal regimes. The legal challenge to harmonize different domestic regimes in this regard is particularly relevant, given common use of such contractual regimes for international cyber transactions.

Major legal challenges pertaining to copyrights also emanate from the potential of Internet to offer new types of business models or services. Internet had opened up a range of new possibilities for online dot com firms to generate revenue using innovative online business models, which may not be viable in an offline environment. The business models could either deal with copyrighted products directly or may provide a related service, which had copyright implications. An interesting feature of some of these business models is to provide a free platform or services to attract more online users and generate revenue through selling advertisements to third parties. One such online business model, which has serious implications for copyrights, is the peer to peer services enabling online exchange of digital products. Companies like Napster for example, provided the necessary infrastructure to enable peer to peer exchange of copyrighted digital music. Such services created mammoth threats to copyrights held by music industry and incurred them huge losses. When Napster was ultimately sued by the music industry, it raised a range of legal challenges pertaining to copyrights in cyberspace. Questions including the relevance of fair use exception in online peer to peer exchange, the extent of liability of online peer to peer service providers for facilitating copyright infringements, etc have raised unique challenges for legal regimes. Similarly, in

resolving the Napster case, a range of challenges arose in enabling the firm to continue to offer the services legally in the future. The Napster case was resolved with a relative ease since the impugned activities could be sued in a single jurisdiction and the firm agreed to comply with the ultimate decision of the case.

The resolution of Napster case, however, does not mean the legal challenges relating to peer to peer exchange has been settled. The extensive nature of cyberspace, spanning across numerous jurisdictions continues to pose greater legal challenges relating to peer to peer exchange of digital products. Development and circulation of online technologies like Bit Torrent, enables highly decentralized distribution and downloading of copyrighted digital products. Use of such technologies could relate a single infringing act to several jurisdictions, making legal enforcement highly challenging. Also peer to peer service online service providers could adopt a highly decentralized structure spanning numerous jurisdictions in order to avoid effective legal actions. Therefore, the peer to peer exchange feature of cyberspace would continue to raise major legal challenges in protecting digital copyrights until a greater international cooperation is achieved in combating the same.

4. International Legal Regimes and the Protection of Digital Copyrights

International legal efforts to address IPR in cyberspace are still in its very early stages mainly due to the infancy of the cyberspace itself. The potential and the capabilities of cyberspace are continually developed, resulting in new uses, applications and business models. Legal response is slow to come both at domestic and international level due to this state of flux. The nature of cyber operations need to settle before a trend

could be established and a meaningful legal response is made. Even in the areas where the cyber trends are quite settled, some times legal responses are slow to come. The luke warm legal response could be attributed to legal challenges or debates that remain. The dichotomy between adequacy of existing legal instruments and principles versus the need to develop new set of legal principles or regimes exists with regard to the question of cyberspace regulations as well. Moreover, there are divided views as to the need for regulation of cyber space versus conservation of online freedoms. Such challenges tend to surface frequently with regard to various aspects of legal regulation pertaining to cyberspace, including IPR in cyberspace. Achieving a fine balance between the interest of an IPR holder and the licensee, with out sacrificing various technological advantages offered by cyberspace is the key to any successful cyber IPR regime. Achieving such a fine balance is not an easy task at an international level, where the interest is also divided between developing and developed world. The urge to regulate IPR in cyberspace differs because of the cyber divide between countries. Countries who have adopted cyberspace quickly feel the need for regulation more than those who are slow to enter the cyber age.

Given the ubiquitous nature of cyberspace, which expands beyond the geographical and political territories of nation states, the development and consolidation of international legal regime to regulate IPR in cyberspace, is increasing called for (Tanya Poth, 2003). Among various IPR related to cyberspace, copyright protection seems to provoke much debate due to the increasing nexus between digital applications and cyberspace. Moreover, copyrights in cyberspace prove to be much controversial. The main reasons include the new ways of making copy right works

available online, new forms of access and uses of such works etc and the ensuing legal complexities.

Principles of copyright protection and international copyright regimes exist but the main difficulty arises as to their scope in being applied to cyberspace. Many of the copyright issues in cyberspace are quite unique and challenging and specific legal regimes to address cyber copyright issues are required. Since the advent and growth of WWW, various international efforts have been attempted to address cyber copyright issues. The scope and extent of the principles addressing cyber copyright protection were mainly divided based on the interest of copyright holders *versus* the interest of cyberspace users.

On one hand, copyright holders demand high levels of copyright protection, virtually making almost every use of a copyright work in cyberspace a violation. The United States' *National Information Infrastructure Report* (NII Report, 1995) with regard to amendments to the US Copyright Act is often cited as a classic example for the extraordinary protection demanded by copyright interests. Had the recommendations of NII Report would have been implemented it is argued to have the effects of making even temporary RAM copies illegal, making the digital transmission as transmission to public, eliminating fair use doctrine where ever it could be licensed, taking away the "first sale rights" enjoyed by the print copies, attaching copyright management information to digital works to trace, making it illegal to circumvent encryption and other forms of protection, making ISPs liable for the content in their network etc. (Michael Lean, 1997). Although the recommendations of the NII Report have not been implemented, it gives a good picture of the scope and extent of protection, copyright interest groups are

seeking to achieve in cyberspace. On the other hand, the proponents of freedom of cyberspace demand total liberty in cyberspace, arguing that once a copyrighted work is made available on the Internet, it is in the public domain and hence are free to copy, use and distribute. Apart from the copyrighted works that are not made available on the Internet by the copyright owners for the purposes display or trail etc; there are a whole gamut of pirated copyright works that are distributed on the Internet with out the consent or knowledge of the copyright owners.

4.1 WIPO and Digital Copyrights

The closer analysis of the views of both the copyright owners and the proponents of freedom in cyberspace clearly reveals demands for regulation of the use of cyberspace mainly favouring interest of the respective parties. The World Intellectual Property Organisation (WIPO) copyright regime is one of the earliest initiatives aiming to balance the interests by addressing the copyright issues in cyberspace. The *Copyright Treaty 1996* and *Performances and Phonograms Treaty 1996* are the two major international legal instruments relating to cyberspace created under the auspices of WIPO. There is also an on going work of a Standing Committee on Copyrights and Related Rights in the field of protection of audio visual performers and broadcasting organizations. However, the WIPO regime does not effectively address many crucial issues pertaining to the copyright challenges in cyberspace and also suffers from various limitations. In both WIPO treaties only a scant reference to digital network environment is made in form of agreed statements as a foot note in contrast to concrete obligations. However, the fact that the WIPO regime is a pioneering attempt to address digital copyrights makes it a very important international initiative in this

regard. A detailed treatment of the both WIPO treaties is beyond the scope of this paper, however, relevant provisions will be analyzed below. A closer analysis of WIPO Copyrights Treaty would reveal the scope and limitation of protection related to digital copyrights.

The WIPO Copy Right Treaty 1996 at the very outset, in the preamble, highlights certain specific needs in order to provide adequate solutions to the related copyright questions raised by new technological developments. It specifically acknowledges the profound impact of the development and convergence of information and communication technologies (ICT) on the creation and use of literary and artistic works. It underlines the need to introduce new international rules and to clarify the interpretation of certain existing rules related to copyrights. The preamble recognizes the specific need to maintain a balance between the rights of authors and the larger public interest.

The WIPO Copyright Treaty reemphasizes that copyright protection extends only to expressions and not to underlying ideas, procedures or related methods of operation or mathematical concept. With regard to reproduction rights, the treaty interestingly makes a reference to digital environment in the form of an agreed statement. The statement provides that the relevant provisions of the Berne Convention related to reproduction and the exceptions apply in the digital environment and the use of works in digital form. It is provides an understanding that the storage of a protected work in digital form in an electronic medium would constitute a reproduction under the Berne Convention. Article 4 of the treaty guarantees that computer programs are protected as literary works in all modes and forms of expression. Article 5 of the treaty recognizes that all forms of compilations of

data or other material, by reason of the selection or arrangement of their contents constitute intellectual creations and thereby are protected. Such protection is, however, not extended to the underlying data or the material and does not prejudice any copyright related to them.

WIPO Copyright Treaty addresses three specific rights namely the rights of distribution, rental and communication to the public. The right of distribution confers on the authors an exclusive right of authorizing the making available to the public of the original and copies of their works. However, the treaty does not prescribe the conditions relating to the exhaustion of the right of the authors after the first sale or other transfer of ownership. The treaty provides the freedom to the signatory countries of this treaty to determine those conditions as they deem suitable to their domestic regimes. With regard to the right of rental, the treaty specifically recognizes the exclusive right of authors of certain types of works in authorizing the commercial rental of their works to the public. In case of computer programs, where the program itself is not the essential object of the rental such right is excluded. Similarly, exception is provided for the commercial rental of cinematographic work unless it leads to widespread copying. Again, the signatory countries of the treaty are provided with the freedom to determine the degree of this right in certain instances. With regard to the right of communication to the public, the treaty provides the authors an exclusive right of authorizing any communication to the public subject to relevant provisions of the Berne Convention. Although the treaty guarantees the above rights, they are subjected to specific and general limitations.

Apart from the specific limitations recognized with respect to each rights, there is an umbrella clause under Article 10, which

provides the signatory countries the freedom to impose other limitations or exceptions to the authors rights granted under the treaty. The set of freedom granted to the signatory countries to limit or modify the guarantees under the treaty could defeat the purpose of achieving harmonized standards of protection among domestic regimes. However, it is interesting to note that countries could use this freedom to address digital copyrights in their domestic regimes. In this context, a reference to digital environment is made, again in form of an agreed statement, that signatory states could use this freedom to devise new exception and limitations (apart from those considered acceptable under the Berne Convention) that are appropriate for a digital network environment.

The treaty requires the signatory countries to provide legal remedies against circumventing of technological measures imposed by authors in order exercise their rights and to restrict unauthorized use or acts not permitted by law. If this express obligation on the signatory states is implemented widely, it could bring in much needed deterrence against the use of circumvention technologies in cyberspace. The treaty also interestingly addresses the issue of Rights Management Information (RMI), which is relevant to the popular Digital Rights Management (DRM). The treaty requires the signatory states to provide legal remedies against anyone who knowingly performs a prescribed set of acts affecting the RMI, including its removal from the copyrighted works and distributing, importing, broadcasting or communicating the same. The treaty also requires the signatory countries to provide enforcement procedures and expeditious remedies against any act of infringement of rights including remedies that will prevent and deter further infringements.

WIPO Performances and Phonograms Treaty, 1996 (WIPO PPT) is a relatively comprehensive regime in comparison with the WIPO Copyright Treaty. Limitations of space do not permit a detailed analysis of the WIPO PPT. However, some major highlights of the treaty along with the relevant provision for digital environment could be discussed. The WIPO PPT, interestingly, imposes a 'National Treatment' obligation on the signatory countries to the guarantee exclusive rights specifically recognized under the treaty, including the right to equitable remuneration. The treaty deals with a range of rights of performers including moral and economic rights and the related rights of reproduction, distribution, rental etc. The treaty also addresses a range of rights related to producers of phonograms. Other related rights like right to remuneration for broadcasting and communication to public and obligations concerning technological measures and rights management are also dealt with. Like the Copyrights Treaty, obligations to provide enforcement measures are imposed on the contracting states.

Other than the general provisions, what is interesting to note is the specific reference to digital and network environment made in the foot notes of the various provisions of the treaty, similar to the WIPO Copyright Treaty discussed before. However, more references to digital environment are made in these footnotes in the form of agreed statements. It is agreed that reproduction rights and the relevant exceptions recognized under the treaty, apply to digital environment, in particular to the use of performances and phonograms in digital form. Countries also agreed an understanding that storage of a protected performance or phonogram in digital form in an electronic medium would constitute a reproduction. It is also agreed that the general freedom provided by the treaty for the signatory states to impose

limitations and exception, would also permit them to introduce new exceptions and limitations that are appropriate to digital network environment. Although many such statements were agreed on between countries, on certain issues related to the level of rights of broadcasting and communication enjoyed by performers and phonogram producers in the digital age, no consensus could be reached between countries and they were left for future resolution. This reveals both the sensitivity of the matter as well as the lack of certainty among countries to agree on legal standards relating to digital issues.

In spite of trying to address different rights, WIPO regime suffers from various drawbacks. Firstly, WIPO regime even though is a good first step in the direction of addressing cyber copyright issues, it is by no means all-comprehensive in addressing all major challenges identified. The WIPO regime itself suffers from want of provisions or clarity with regard to various rights addressed. Secondly, WIPO regime does not seem to have the potential to bring in uniformity of copyright standards relating to cyberspace among different countries. The disparity in copyright protection in different jurisdictions around the world may not be remedied by WIPO regime. WIPO lacks tooth of enforcement and the member states may reflect the provisions of the WIPO regime different, still resulting in disparity of standards. Some of the domestic and regional initiatives in the context of USA and European Union seem to have already shown such different levels of adoption in their domestic legislation. (David L. Hayes, 1998). This is bound to result in a situation whereby, in spite of the some ideal provisions in the WIPO regime, disparity and uncertainty of cyber copyright issues will remain. The objective and purposes of the WIPO regime seems to be defeated by individual countries trying to take advantage

of the leeway that exist in the implementation of the regime.

Thirdly, apart from the threat of domestic jurisdiction adopting different standards of implementation of WIPO provisions, there is a relative lukewarm response to WIPO regime itself. As of May 2006 the number of contracting parties to the WIPO Copyright Treaty 1996 stood at 59 and where as the number of contracting parties to WIPO Performances and Phonograms Treaty 1999 reached 58. WIPO regime has so far failed to bring much enthusiasm among different countries that have signed but not enforced the treaties. The response has been relatively slow, as many countries seem to adopt a wait and see approach. One could possibly argue that the lack of authority of WIPO regime and the lack of urgency on part of countries to update domestic IPR regimes have been the major causes of the slower implementation of WIPO regime. Finally, the reference to digital and network environment in the WIPO regimes is scant and limited. Such references are not in the form of concrete obligations on the signatory states. They have only been referred as 'statements' agreed on by countries, which could only serve as an indication of what course WIPO regime could take in the future. With regard to some sensitive digital issues even agreed statements could not be achieved between countries. Therefore, in spite of some direct reference made to digital and network environment in the WIPO treaties, the regime still needs to progress further to effectively address copyright issues in cyberspace.

4.2 Copyrights and Other Related IPR in Cyberspace

Apart from copyrights, there are other IPR related issues in cyberspace. Detailed discussion of those IPR is not warranted

here. However, some pertinent IPR issues, closely connected with copyrights in cyberspace could be discussed. Firstly, the issue of trademarks in the context of domain names have surfaced at significant levels in cyber space. Since the advent of WWW, the significance of the domain name has been ever growing, as it is considered as the main identity of cyber ventures. Domain names are significant from a trademark rights perspective, (Weinberg, 1999) than from a copyright perspective. Although many of the conventional threats to the trademark rights exist in the cyber space, the main area of controversy has been the issue of domain names. Often domain names are registered by cyber squatters who had no interest in running a business but to register the domain names of the very popular trade marks and try to cash in by later transferring the name to the trademark owner for huge sums. Conventional trademark principles have not contemplated domain name rights as part of the trademarks, and this led to the initial confusion as to whether trademark principles can be expanded to domain names. Trademark owners are concerned about the infringement as well as the dilution of their trademark caused by domain name threats. The growing significance of cyberspace presence and identity warrants the expansion of the conventional trademark rights to include domain names.

Unlike copyrights in cyberspace, cyber trademark issues have not witnessed exclusive treatment by international regimes. Numerous challenges exist in developing cyberspace specific trademark legal principles at an international level (David W. Maher, 1997). Beyond domain name issues, there are a range of trademark issues that ultimately are more likely to be important than domain disputes (Sally M. Abel, 1999). The range of trademark issues that may specifically arise in the context of cyberspace including issues of trademark

dilution, abuse of trademark online, unauthorized use of trademarks in meta tags, etc have not been effectively identified or addressed by international regimes. It is rather domestic legal regimes in some countries that have addressed the issues, however, with differing standards and principles. Unless the trademark principles in the specific context of cyberspace are developed internationally, the only hope is the extension of application of general principles of trademarks to cyberspace. However, as we have seen in the case of copyright, the general principles may not be adequate to resolve all cyberspace trademark issues.

In case of patent rights, the issue of patenting of software or possibly E-business models etc are in vogue in different jurisdiction. Patents for software are sought as an alternative to copyright protection. Patent protection may not sound very relevant in the context of cyberspace, except for the underlying hardware which provides the network infrastructure for cyberspace. However, the relevance of patents continues to grow in the context of protection of software and business models on the web (Yen-Chun Jim Wu, 2005). With regard to patenting of business models generally and patenting of E-business methods in particular, there are diverse views. The proponents of patenting E-business models argue that it will stifle innovation on the Internet (R.Laurie and R. Beyers, 2001). The antagonists of patenting E-business models argue that they such methods are inferior to other patentable subject matter and should not be granted protection. (John R. Allison and Emerson H. Tiller, 2003).

Similarly, with regard to the issue of patenting of software, diversity of views exists and the patentability of software is not uniform among countries. The proponents of patenting software see potential general

benefits like technological development and specific benefits like stimulating innovation in intangible information processing methodologies (Richard S. Gruner, 2003). The antagonists on the other hand argue various undesirable consequences that may result in granting patent protection for software. For example, it is argued that such patents may lead to the misuse of rights including monopolistic behavior of patent holding software firms (W.N.Holmes, 2000). Some scholars take a hybrid view, by arguing that patents should be granted when software implements business methods and such patents should not be made available only for the business models. (Rochelle Cooper Dreyfuss, 2000). Because of the increasing implications of software or online business models for copyrights in cyberspace, the issues with regard to the patenting of software or business models is highly relevant in discussing digital copyrights. Moreover, software is generally considered as a subject matter of copyrights and not patents, which calls for an investigation of possible implications of this shift.

Different practical implications relating to the use of cyberspace may arise if patents are granted for software programs instead of copyrights. Many of the online operations are highly dependent on running of different software programs. The extensive and automatic nature of online operations spreading through various computer systems and networks would mean using the support of different software all the way around. Anyone who uses a patented invention without authorization of the patent holder is generally held to violate the rights of the patent holder. In the context of an online operation, the issue of infringement by use is bound to raise a lot of controversies as many of the online operations may make use of different patented software. Use of a network may trigger the running of infringing

software at some remote sites without the knowledge of the online user. Even if the user is aware it is argued that it may not be within his control to halt or bypass the online activity and may incur liability for infringement of patent rights (Dan L. Burk, 1993). As a result assessing patent right infringement in an online context will be highly controversial and so will be its regulation. Such patent right related implications are bound to arise, when there is an increased trend to claim patent protection for software programs. Such implications may not arise if relevant software is granted a copyright protection, in which case automatically triggered use of software online could fall within the exception of fair use.

Although it is quite common to protect software programs through copyrights, there is an increasing interest to seek patent protection for software programs on the grounds of limitations of other types of protection. The protagonist of patent protection for software argue that copyright protection is insufficient form of protection for software since the emphasis is on the literal copying rather than protecting the innovation in a software. The patent protection of software is a more extensive protection than a copyright protection and there is an increased trend to seek the same. Many domestic jurisdictions like USA, Denmark and Panama are already offering patent protection for software. Apart from software or computer programs, patent protection issues also arise in the context of E-commerce models, design of E-payment systems, cryptography, data compression techniques, etc. However, domestic regimes which grant patent protection are limited. Also, unlike copyright protection, there are no specific international initiatives to lay down the principles of patent protection in cyberspace.

4.3 WTO Regime and the TRIPS Agreement

The range of challenges pertaining to copyrights in cyberspace, the scope and limitations of related international initiatives prompts an investigation on WTO regime, which has successfully incorporated IPR within its agenda. WTO regime attempts to broadly but effectively protects IPR under its TRIPS Agreement. Although the scope of IPR protection under WTO could be argued as narrower, the fact that the regime is one of the highly successful regimes makes it a viable regime for addressing IPR. WTO regime boasts one of the highest numbers of adhering states with 149 countries and territories being its members as of 11 December 2005. The fact that the TRIPS Agreement is bundled with the general agreement establishing the WTO means that all the member states have to automatically adhere to the TRIPS Agreements. Since the successful establishment of WTO in 1995, many states have either introduced or modified domestic IPR legislation in order to comply with the TRIPS Agreement. This makes TRIPS a very successful international IPR regime. The provisions of the TRIPS Agreement provide an effective IPR protection covering all three major forms of protection including copyrights. Limitation of space does not permit analysis of the various protection offered by the TRIPS Agreement. However, some major improvements offered by the TRIPS Agreement in contrast to other major international regime needs to be mentioned.

Although the various IPR instruments like the Paris Convention 1883 (as amended in 1967-generally "Paris Convention") (Industrial Property), Berne Convention 1886 (Copy right), Rome Convention (Neighbouring rights), Washington Treaty 1989 (Integrated Circuits), UNESCO Universal Copyright Convention 1952 etc

provided the foundation for different forms of IPR protection, their limitations are quite obvious. Firstly, none of these instruments covered all major IPR. Secondly, these international IPR regimes did not have enforcement or dispute settlement mechanism. TRIPS fills in the gap to some extent, as the effective enforcement and dispute mechanism under the WTO could be effectively utilized for trade related IPR protection as well. The relevance of TRIPS to the general principles of IPR enshrined under the above international treaties is very obvious. TRIPS Agreement makes a direct reference to above international IPR conventions and requires its members to generally abide by the principles. Apart from reference to those general principles, the TRIPS Agreement introduces other important principles like most favoured nations (MFN) and national treatment into IPR protection. (Seamus Simpson, 2004).

The fact that WTO regime has been widely adopted, to which TRIPS is an inalienable part, naturally warrants an investigation to test the viability of WTO to protect IPR in cyberspace. Before analysing the potential of TRIPS to regulate cyberspace, one need to acknowledge the major limitation it may suffer. TRIPS being a trade specific regime, any IPR, which is sought to be brought under its purview, needs to be related to a trade distortion issue. This limitation may not make TRIPS regime a viable forum to develop general principles of cyber IPR. However, one of the major utilities of TRIPS is related to its potential as a mechanism for 'enforcement' and 'dispute settlement', which remain as major shortcomings of other international regimes. Given the potential strength of TRIPS scholars criticize having a piecemeal approach to digital copyrights and argue that the same should be internationally protected under TRIPS mainly due to its power to require enforcement through trade sanctions,

which other international copyright treaties lack. (Manavinder Singh Bains 2003). A combined effect of specific IPR regimes with WTO regime could prove to be an effective solution for trade related cyber IPR challenges. For example, WIPO could be a very good regime to develop the general principles of digital copyrights like the 1996 Copy Right Treaty and TRIPS could be used to enforce the same as much as it is related to trade related IPR (Mort, 1997). This may not be unprecedented as TRIPS has already some similar provisions of WIPO regime built into it. For example, TRIPS complements existing WIPO regime by providing that its main provisions shall not derogate from existing obligations of the members under WIPO (Art 2(2), TRIPS).

Interestingly WTO members are required to comply with substantive provisions of Paris Convention (Art 2(1), TRIPS), which could mean even if a WTO member country had not undertaken obligations under the Paris Convention (Thomas Pletscher, 1996). Similar if the principles of WIPO Copyright Treaty could be incorporated within TRIPS regime it would enable the effective enforcement of new WIPO copyright principles under the TRIPS platform. At present the WIPO Copyright Treaty (which is a special agreement within the meaning of Article 20 of the Berne Convention) expressly limits itself by providing that the treaty shall not have any connection with treaties other than the Berne Convention. However, Article 9 of the TRIPS agreement recognizes the principles of Berne Convention specifically between Articles 1 to 21 and requires the WTO members to comply with the same. The implications of the limitation of connection expressed by the WIPO Copyright Treaty *viz-a-viz* the express recognition of the relevant provisions of the Berne Convention under TRIPS regime may need to be reconciled before the potential of

WTO could be explored. However, the greater recognition of major WIPO regimes under TRIPS makes it a potential platform for the future to effectively enforce digital copyright principles developed by WIPO.

Moreover, the TRIPS regime provides some express principles relating to the protection of digital copyrights. Article 10 of the TRIPS Agreement calls for the protection of computer programs as literary works under the Berne Convention and the compilation of data or other material as intellectual creation. Apart from the all perceivable utility of TRIPS Agreement in its current form, some scholars call for a possible future amendment to TRIPS regime in order to increase its potential to protect IPR in cyberspace. Since TRIPS Agreement was created before Internet became popular in the mid 1990s, it is argued that TRIPS needs an update taking the development of cyberspace into account. For example, it is proposed that digital copyrights could be effectively enforced through anti-circumvention measures by prohibiting international trafficking in circumvention technologies using the TRIPS Agreement with appropriate amendments. (Manavinder Singh Bains 2003). Similarly, the concern as to the limitation of TRIPS regime in not foreseeing the growth of Internet and the ensuing challenges is indirectly addressed by the general interest of WTO recently to include E-commerce issues within its agenda. There is an increasing focus of WTO in E-commerce issues, which also indicates the general drive to expand the tentacles of WTO to cyberspace. This is an encouraging sign as more E-commerce transactions are related to trade, the higher the scope of application of WTO regime to cyberspace. Some of the major IPR threats arising in cyberspace could be traced to e-commerce or business transactions. Sovereign members of the WTO are also seen as willing to accept its expanding role in E-commerce related

issues. (Mary Rundle, 2005) The development in this direction of increasing E-commerce focus of WTO, to some extent addresses the concern as to the limitation of TRIPS to regulate IPR in cyberspace.

Apart from some specific features of WTO regime that may consolidate its potential to address IPR in cyberspace, it may offer some general advantages. Firstly, the TRIPS Agreement could be effectively combined with different WIPO principles relating to various forms of IPR protection. Such combination is plausible because TRIPS covers all major forms of IPR including copyright, patents, trademarks, geographical indications, industrial design, integrated circuits, protection of undisclosed information etc. Moreover, TRIPS also addresses anticompetitive practices, which may be quite relevant in balancing the interest of copyright holders *versus* its users, especially in the context of cyberspace, where the exceptions like fair use doctrine are not clearly settled. The anticompetitive practices arising out of the conditions attached to licenses etc could be addressed, in order to ensure prevention of abuse of copyrights. The anti-competition provisions could thus ensure justice to both the copyright holders as well as its users. The WTO dispute settlement could be an effective platform in developing the jurisprudence of some of the less settled issues of IPR in cyberspace, so long as they are trade related. Moreover, the provisions for TRIPS Council to review the implementation of TRIPS Agreement, as well as its mandate to undertake reviews in the light of any relevant new developments that might warrant modification or amendment of the TRIPS Agreement, makes it highly responsive. Finally, the TRIPS agreement provides for greater transparency between member countries concerning laws, regulations and rulings on IPR. These measures to ensure transparency may be

effectively used to combat interpretative or implementation divergences in IPR principles by different domestic jurisdictions.

5. Conclusion

The growth of Internet, especially the WWW has created a new cyberspace for copyrights exploitation. The analysis of copyrights in cyberspace reveals a mixed result of new opportunities and threats. Cyber technology had offered new ways of commercialization or exploitation of copyrights by business firms and individuals. These new ways have enabled greater scope for global expansion and market reach around the world, promising huge potential for generation of revenue or other means of returns. However, these new opportunities pose parallel threats many of which even undermine the very rights of the copyright holders. The magnitude of threats is unprecedented with the technological feasibility making it possible not only for easier piracy but also for easier distribution of such pirated works to masses by a click of a button. Such threats often outweigh the opportunities offered by the cyberspace, and this calls for increasing regulation of cyberspace to protect copyrights.

The present cyber anarchy has created a range of legal challenges to regulators. The ubiquitous nature of Internet has made many of these challenges international in nature, calling in international copyright regimes for greater regulation of cyberspace. The cyberspace, as such is unregulated and various transactions carried out in the Internet surpass the national regulatory controls. The technological feasibility to surpass national governments or regulation causes doubts as to the effectiveness of any single domestic regime or a select group of domestic regimes to regulate the cyberspace. Moreover, many of the domestic copyright regimes are relatively new ones and as such

may be ill-equipped to address copyright in cyberspace. This calls for increased international co-operation for the regulation of cyberspace including the protection of copyrights. Many of the new forms of transactions in cyberspace are highly technology oriented and any legal efforts to regulate the same have to go hand in hand with the technological growth. Law and technology, needs to combined for effective solutions for many of the cyber space challenges including those related to copyrights. In the context of copyrights many legal principles need to be developed or settled to determine the legality of the transaction in question. Many such pertinent questions related to copyrights in cyberspace have to be clearly settled at an international level. Lack of internationally agreed principles relating to copyrights in cyberspace gives room for divergent domestic standards.

The continued evolution of cyberspace and the rapid growth of cyber technology create a state of flux, prompting a delay in legal response. There are also debates as to the potential of existing international regimes versus the need to create new regimes to address copyrights in cyberspace. Also mindful are the need to balance the conservation of online technological advantages versus the urge to regulate copyrights in cyberspace. The urge to develop regulatory regimes of copyrights in cyberspace is also hindered by the cyber divide existing between the developed and the developing world. The entire complex set of cyber copyright issues indicates a range of potential challenges in developing international principles to protect copyrights in cyberspace.

An introspection of major forms of IPR in cyberspace reveals that copyright will continue to be the most relevant and controversial IPR in cyberspace.

International efforts to address the cyber copyright issues are the first to come under the auspices of WIPO, which is an encouraging development. The 1996 WIPO treaties, for example, contains a range of ideal provision balancing the interest of the IPR holders v the users in a cyber space context. However, in spite of being one of the first efforts in cyber IPR, the WIPO regime suffers from various shortcomings. The analysis reveal that WIPO copyright regime, while providing a set of rights and guarantees pertaining to copyright, provides a greater freedom for domestic jurisdictions to deviate from the common standards. Such freedom may not achieve the much needed harmonization among domestic jurisdictions in developing digital copyright regimes. References to digital and network environment in the treaty have been made only through agreed statements and not concrete obligations. Also a comparison of the range of legal challenges identified earlier in the paper with the issues dealt under the WIPO Copyright Treaty reveals that only few of the issues are dealt by the WIPO regime. A range of other copyrights issues pertaining to cyberspace are not addressed by the WIPO Treaty. Apart from the shortcomings, the lack of enforcement mechanism in the WIPO regime leaves a big lacuna in the system. Also the domestic legislation are slow to respond to WIPO regime, as some of the signatory nations are yet to enforce the treaty principles in domestic regime. Moreover, the number of states acceding to the WIPO regime is also relatively slow. Therefore, even though digital copyrights protection being one of the first to be addressed at the international level, the shortcomings of the efforts dilutes the effectiveness of the mechanism.

The analysis also reveals that other IPR related to cyberspace will have implications on digital copyrights. With regard to the trademarks in cyber space, the main

controversy was centred on domain name issues, although a range of other potential trademark related issues are bound to arise in cyberspace. The other major IPR namely the patent rights are often considered to be not so relevant with regard to cyberspace. However, there is a growing significance of patent rights in cyberspace given the increasing trend to seek patent protection to various cyber tools and programs rather than copyrights protection. The increasing use of cyberspace and various online facilities for electronic commerce may prompt issues as to the infringement of patent rights, which needs to be effectively addressed by international regime.

The general shortcomings of the WIPO regimes prompt an investigation on the TRIPS regime under WTO. The TRIPS regime has been widely acceded by sovereign states and has various interesting features. The significance of TRIPS increases in the light of the limitations of other major international IPR regimes. Although, the TRIPS regime may suffer from being a trade related regime, still it might prove to be a very effective regime in addressing IPR in cyberspace. TRIPS regime provides various advantages like the effective enforcement mechanism, dispute settlement provisions, and provisions for high responsiveness to the continued state of flux of cyberspace etc. Also the limitations of TRIPS regime may prove to be less relevant in the future, given the fact that WTO has an expanding agenda to address more and more areas related to trade, which includes E-commerce. Moreover, the apparent recognition given to the WIPO principles in TRIPS regime provides a hope for a combined use of both regimes to effectively address IPR in cyberspace. WIPO may continue to develop specific cyber IPR principles and the advantageous features of TRIPS regime could be combined with the same in order to create a vibrant international

cyber IPR regime. Such combined efforts will ensure an effective protection of IPR in cyberspace including copyrights in cyberspace, at least in the trade related cyber IPR. Successful experiments and the valuable experience gained in that process should go a long way in enabling the creation of effective international regimes to protect non-trade related cyber IPR. However, until WIPO regime becomes more effective or a comprehensive international regime to regulate the overall IPR related activities in cyberspace is created, cyber anarchy in non-trade related IPR is likely to prevail.

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