

Copyright Protection in the Digital Environment: Indian Perspective and International Obligations

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With the advancement in the digital technology, the distribution of the copyrighted material on the internet has brought about a drastic change in the pre-existing laws. Unfair use and illegal downloading of copyrighted material such as software, videos, songs etc. have developed into a major problem in the digital domain. To overcome these problems several technological and legal measures have been taken up such as development of tools like Encryption, Digimarc, Watermark, besides framing of various international treaties and agreements including TRIPS, Anti-counterfeiting trade agreement (ACTA), WIPO Copyright Treaty (WCT), WIPO Performance and Phonogram Treaty (WPPT) etc. Indian Copyright Act after amendment of 2012 seems to be effective enough to resolve the issues concerned with infringements in the digital domain hence debate is going on if India should sign WCT and WPPT and the matter is still under consideration of the Government of India. The development in the digital environment has altered the boundaries for the copyright holders to look at the protection of copyrighted material through various techniques. The present article deliberates about the Indian Copyright Act, various international copyright treaties, limitations and exceptions provided by TRIPS and also looks towards the usefulness of various treaties available for the digital domain. Furthermore, steps to control the misuse of copyrighted material are also discussed. The article concludes with some suggestions and ideas that could be useful for regulating the unfair use and illegal downloading of the copyrighted material.

Keywords: WIPO, TRIPS, Indian Copyright Act, WCT, WPPT, Digital Rights Management (DRM), Rights Management Information (RMI), Berne Convention

Copyright is an important intellectual property (IP) right for protection of expressions of the creator of literary, artistic, musical work, cinematograph film and sound recordings etc. and plays an important role in promoting innovation and creativity. Copyright is a leading global intellectual property right for controlling the reproduction of work and also grants IP rights to a person, group of individuals, or organizing parties who are involved in presenting their work in public like broadcaster or performers. Copyright comprises a set of exclusive rights granted to authors, producers, creators, or performers depending upon the type of original work which includes the right to copy, distribute and adapt the work.¹ Copyright grants a bundle of rights to the creators to protect their original work such as right to broadcast, right to display, right to produce the work, right to reproduce the work, right to perform publicly.

Piracy in the Digital Domain in India

Change is the law of nature and process of change is very natural; the biggest change in today's era is in

digital domain. In twentieth century, protection of work by copyright has become a major challenge because of the emergence of new category and kind of work such as software, digital music and videos, etc. The related issues in the digital domain are associated with the distribution and amount of content that has to be distributed. In the digital domain, copyright infringement can be carried out at a low cost, with an ease and also without compromising with the quality of work. Besides this, serious issues that are coming up include fake websites and e-commerce, illegal downloading of songs and videos are some of the biggest concern of this era. Copying content and introducing a new website has become a new fraud in the digital domain that causes high revenue loss to the owner and a huge profit to infringer as every click on the fake web page benefits the infringer. There are several reasons of infringement practice but majorly observed reason behind piracy is the easy usage of internet and easy availability of the internet. The internet on the other hand is responsible for carrying out business online which is termed as e-commerce. Fast speed, ease and flexibilities of digital technology

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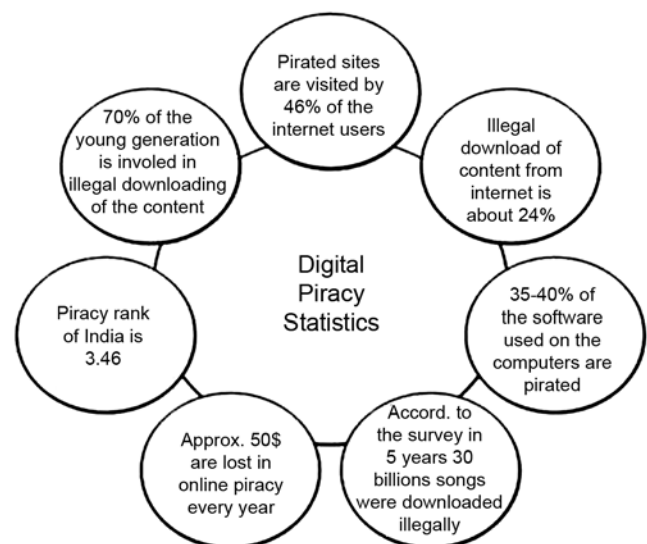
have made people to work online as the information beyond geographical boundaries can be collected with an ease. Copyrighted material is easily transmitted and distributed using advanced technology around the globe using internet without authentication and authorization of the owner; hence there is a real need for the protection of the work without any boundaries. Digitization has brought a revolution and also has helped people for working online as it provides ease for carrying out business, entertainment sector and education etc. Benefits of digitization have also brought some disadvantages with it. The biggest problem encountered in the digital domain is piracy. In India pirated products such as pirated soft wares, videos, movies CDs, pen drives, music CDs are easily available in the market at a much cheaper rate.² Besides piracy there is a big issue of downloading of databases and other useful information from the internet. In our day-to-day life we see many road side stalls and suppliers who sell pirated DVDs, CDs on demand. They have all the new releases with them that hardly cost 30-40 rupees per movie, sometimes these pirated CDs are available on hire also and there is no question and objection on the quality of the video and sound. This ease in the availability of pirated movies and games, promotes piracy and consequently effects "Business".

From observations of day to day life, one can conclude that the main reason behind the piracy is a high cost of original CDs, DVDs and software. Availability of the pirated versions of music and films at low cost has encouraged people to buy pirated cheaper DVDs of movies, videos, games and music rather than spending higher amounts for purchasing these original digital products and hence piracy grows like a forest fire. Despite the availability of these pirated CDs of games, music, movies and videos, web links are also available on the internet that are subject of illegal downloading. Easy availability of internet has caused easy, illegal downloading at a much cheaper rate as internet service providers and telecom companies offer internet services at a cheaper rate. With increase in the number of mobile phone users and similar gadgets, technology is easily reaching the public and this is now becoming a very big concern with the progress in developments in the digital environment. Another important concern, in addition to above issues, is associated with broadcast of an original work into public domain over the internet. In today's modern era it is becoming a tough

task to protect the material broadcasted over the internet. Signal piracy is an ongoing theft, which is being practiced nowadays. Broadcast of original material which is meant for particular platform for example cable TV that is being made available on other platforms such as on the internet, would amount to signal piracy and also result into copyright violation. Fig. 1 shows the digital piracy statistics worldwide indicating the percentage of piracy in various areas.

Some sections in the Indian Copyright Act deal with the issues of copyright violations of digital matter besides giving the right to control its usage. In the digital domain, the Copyright Act has to deal with disputes concerned with illegal downloading of movies, music, games, etc. The provisions of the Copyright Act also apply directly to other products such as computer software, transfer of files or sharing of files among the personal computers by peer to peer networks.⁴ In reality it has become very difficult to protect the digital material which is on the internet and at the same time it is also very difficult to restrict the access of the data/material which is being protected.

Yet another issue emerging with the digital revolution is the software piracy. Software piracy comprises reproduction, distribution and use of software. According to a survey it was found that more than 36% of the software used is pirated and stolen one,⁵ consequently there is a price hike of



3#Data based on <http://brandnaille.com/34-startling-internet-piracy-statistics/>

Figure1—Digital piracy statistics worldwide

original software for the consumers and also a high revenue loss to the actual owner of software. Piracy of software is done in several different ways such as downloading of software online from peer-to-peer networks; pirated hard disks of software are available, copying of software for which only user has a license, browsing and then installing a copy of software from an individual and installing it after entering the same product key many a times on several computers.

The other emerging issue with the advent of technology is the duplication of database on the internet. It is less cumbersome to manipulate, reproduce and distribute the content available on the internet and at a low cost which becomes a major problem in the digital environment. The same is the issue with the e-books which are available on the internet and are easily downloadable but the problem comes when these e-books are printed and are sold off at much cheaper rate which leads to high decline in the economic return to the publishers and authors.

Huge losses incurred worldwide due to illegal downloading and online piracy in various industries including film industry, software industry and music industry.⁶ Besides, this yet another serious issue related to doctrine of first sale of books. Doctrine of first sale in the Indian Copyright Act clearly explains that anybody can resell a copy without the permission of owner but cannot sell a copy without the owner's permission. But as it is noticed that generally people sell a copy and keep the monetary returns with them; this creates a conflict between rights to own and distribute a copy and becomes impossible for owner to get back the economic return from the exploitation of a copy, distributed without his consent.

Several other issues such as *fake websites* that are the websites with resembling domain name so that accession to these fake websites increases and that benefits the infringer for example various fake shopping websites etc. with similar domain name. When customers pay money for buying a product online and they do not receive any product due to the website being fake, consequently customer faces problem and loses money because of these frauds on the internet. The Copyright Act renders protection to software part only but website domain, frauds on fake shopping websites, do not come under the ambit of Copyright Act but are deliberated by Cyber Law and IT law.

There are several adverse effects of copyright infringement on intellectual property as well as on

economy including high revenue loss to the owner of the IP, decline in the sale of digital products, addition of extra cost in litigation process, wastage of time in dealing with litigation process, last but not the least very importantly effect on the rise in the cost of original digital products.

Indian Copyright Law and International Scenario in Digital Domain

To solve the issue and to limit the usage of copyrighted material, Indian Copyright Act was established in 1957 and became operative since 21 January 1958. Several amendments have been incorporated since then and recently in the year 2012 to meet the national and international requirements. Copyright, an important IP right, protects only the expression but not an idea, methods of operation, procedure or mathematical concepts as such (Article 9.2 of Berne Convention). Computer programs are protected under category of literary work (Article 10.1 of Berne Convention), compilation of data or material whether machine readable form or in some other form are protected as such (Article 10.2 of Berne Convention). Term of copyright depends on the type of work sought to be protected.⁷

With the technological developments and revolution in digital technology, various digital issues have cropped up. To regulate the usage of a copyrighted material, several international treaties have been framed comprising the extent of use of copyrighted work, limitations and exceptions. World Intellectual Property Organization (WIPO) governs these international copyright treaties besides many other organizations. Sometimes it is required to reproduce or present the same original work for specific non-profitable purposes. For such reasons, there are some exceptions which exist in the Indian Copyright Act for specific work such as, for review or criticism, for research and study (Section 52 of Indian Copyright Act), for reporting current events, in jurisdiction proceedings, etc.

In the Indian Copyright Law, there are exceptions on usage of the content such as, for education and for research purposes, which is permissible, but not for the purposes of entertainment and commercial benefits. Since the material on the internet is downloadable easily and quickly at a low cost which results in a quick distribution of the copyrighted material. Consequently, owners of copyright have a fear of unauthorized distribution of their work as this

causes decline in the economic returns. Various international copyright treaties have been framed such as Berne Convention, Rome Convention, Beijing Treaty, Geneva Convention, Brussels Convention, Marrakesh Treaty, etc.

The IP issues became too complicated with the advancements in the digital technology and digital revolution. Protection of copyrighted material on the web has become a serious issue of the digitization. Distribution of digital content is attributed as serious cause of infringement. With the advent of technology, the existing WIPO treaties were found to be inadequate to cover all the new issues coming up in the digital domain and as there were no serious judgments and safety measures in then existing treaties to stop the infringement hence a need for modifications in treaties was felt. This resulted into introduction of new treaties such as WIPO Copyright Treaty (WCT) and WIPO Phonogram and Performance Treaty (WPPT). A brief of various international copyright treaties is provided in Table 1.

Internet Treaties and Agreements

World Copyright treaty (WCT) is a special agreement which clearly explains the meaning of Article 20 (entry into force of the treaty) of the Berne Convention which explains the protection of original literary, artistic works, computer programs, writings, databases, musical work, audiovisual work, work of fine art, and photographs.¹⁵ WIPO Performances and Phonogram Treaty (WPPT) particularly deal with the rights of the performers (musicians, singers, actor, etc.) and the producers of the phonogram (sign or symbol which represents vocal sounds).¹⁶

The purpose of Anti-Counterfeiting Trade Agreement (ACTA), a multi-lateral treaty, is to establish international standards and intellectual property rights enforcement. ACTA was drafted on 15 November 2010 and was signed by more than

22 countries in the year 2012 in Japan. This agreement aimed to establish an international legal framework for targeting counterfeit goods, genetic medicine and copyright infringement on the internet.¹⁷

With the advancement in the technology; it has become a challenge to protect today's social, economic, cultural development in the digital domain and to provide solutions to the problem arising by the advancement,¹⁸ particularly in the distribution of protected material on internet by earlier available treaties. With the advent of internet, strong need was felt to introduce new international rules and revision of the existing laws hence WCT and WPPT came into force. WCT & WPPT specially deal with the issues, technological measures and exceptions in the digital domain hence WCT and WPPT are collectively named as 'Internet' treaties.¹⁹ Both the treaties aim to revise and supplement the already existing WIPO administered treaties such as Berne Convention and Rome Convention on copyright and other related issues. Most importantly in order to aim at the new developments in the technology and market area, WCT and WPPT came into existence to meet challenges posed by new problems arising with advancement of technology.²⁰

Approximately, more than 100 countries have signed WCT and WPPT. Both these treaties provide an equal balance between public and the owner of rights. These treaties also comprise the exemptions and limitations to the rights in the digital environment.²¹ WPPT and WCT both allow four different kinds of economic rights to performers for their performances: the right of distribution, the right of reproduction, the right of making available, and the right of rental.

WCT has some special provisions for the rights of the creator and also has much advancement with respect to the field of information technology as compared to the treaties already existing. WCT and WPPT deal with the rights of the owner, author,

Table 1—International copyright treaties

S. No.	International copyright treaties	Formulated at	Formulated/effective from	Governed by
1.	Berne Convention ⁸	Berne	12 May 1858	WIPO
2.	Beijing Treaty ⁹	Beijing	20-26 June 2012	WIPO
3.	Geneva Convention ¹⁰	Geneva	16 September 1955	WIPO
4.	Brussels Convention ¹¹	Brussels	12 December 2012	WIPO
5.	Marrakesh Treaty ^{12,13}	Marrakesh	28 June 2013	WIPO
6.	Rome Convention ¹⁴	Rome	26 October 1961	WIPO
7.	WCT	Geneva	6 March 2002	WIPO
8.	WPPT	Geneva	12 May 2002	WIPO

creator, performers and also neighboring rights, to authorize the owners for making their work available in the public domain on the internet. These treaties also contain several technological measures that can be used by the authors or owners to prevent their copyrighted material from unauthorized use.²² However, India is not signatory to these treaties.

There are several advantages of WCT & WPPT that provide important economic incentives and Intellectual Property Rights to the creative individuals or a company which operates in the digital environment. These treaties provide a legal platform for the healthy E-commerce and also protect the creativity within the country and outside the country and are beneficial for both developing as well as developed countries.²³ They also maintain the balance between rights of the authors and larger public interest, especially education, research etc.¹⁸

WCT and WPPT provide protection measures and techniques to copyright owner and performers to protect their material/work from illegal downloading and unfair use. WCT and WPPT make it clear that Article 9 of Berne Convention shall be applicable *mutatis mutandis* to the protection of reproduction rights in the digital environment. According to Article 9 of Berne Convention the owners have exclusive rights of authorizing indirect or direct reproduction of their work in any form or manner.

With the advancement in the digital technology, reproduction rights became problematic as the distribution of protected work over the web is associated with the reproduction of work as the matter gets instantly stored in locally connected computer's Random-Access Memory (RAM). India is a signatory to Berne Convention, but there is a deficiency of the agreement that are related to scope and content of rights since the original content of the Berne Convention does not contain any provision for the reproduction rights.²⁴ Berne Convention was found to be incompetent to explain the protection of reproduction of content. The provisions of WCT and WPPT make it clear that the information or content stored permanently in the 'read only memory',²⁵ or floppy disk is protected under WCT and WPPT as 'right to reproduction'. The signatory countries (members) have a right to restrict the usage and can apply limitations or exception over the copyrighted work.

The other issue is related with the misuse or unauthorized access of some works like photographic work, pictorial work, computer program etc. which

are more prone to unfair use on the internet; Berne Convention was not capable enough to resolve these issues. The issues, rights and management associated with broadcast organizations are dealt under Rome Convention. Rome Convention has minimum standards and rights for the protection of broadcast signals and new amendments have not being added since its framing. TRIPS Agreement also has the same provisions as in Rome Convention and did not have any other special rights.

Circumventions against Misuse of Copyrighted Digital Material

To detect and to stop unauthorized distribution of copyrighted material and copying of the material, WCT has certain new provisions that deal with Technological Protection Measures (TPMs) and Rights Management Information (RMI). TPMs and RMIs are the safeguards for the protection of work or material.

TPMs are the safeguards used to protect material from being copied in digital format and also it protects material from being copied multiple times.¹² This includes limiting devices on which song or movies can be copied, this is done with the help of the software that do not allow users to make copies from that device. RMI is another safeguard for the protection of copyrighted material which includes a label of the owner which is put over the protected work that embeds the details, information and contribution of that specific work in it.²⁶ Besides RMI and TPMs, Digital Rights Management technology have been evolved that enable the copyright owners to have a good control over their work by allowing users to access only a part or category of the material which are permitted by the copyright owner. Various other tools have been developed, such as, one time use CDs of games available in the market, are made in such a way so as to install a game only for one time on one device only and further use of that CD which has been used earlier will no longer be possible in the second trial. Yet other tools, such as, encryptions and watermarks are available to control the usage of copyrighted material. Digital watermarks are available which restrict copying and editing in the file while the conventional watermarks deeply rooted in the paper are invisible to naked eyes but becomes visible only when a paper is subjected to a source of light, in turn gives the proof of the ownership and authentication. The digital watermark cannot be easily removed from the file and is embedded in the form of

an image which gives the information and also serves to authenticate the source of the image. Another tool is 'digimarc' for the software in the form of an image which contains all the information about the owner and his distribution rights. Digimarc employs special software named as "Spider" which continuously examines websites for copyright pirates.²⁷

Though, above mentioned digital technologies are helpful to restrict and control the use of a copyrighted material on the internet but they are not sufficient to completely stop the infringement. These various tools only make it more difficult for infringer to use the copyrighted material and help owner to protect their intellectual property to major extent. To reduce the unauthorized downloading of movies and music, some software is made compulsory to download songs or movie but for that software itself has a subscription fee, one has to pay the subscription fee and only thereafter it can be used for downloading movies or songs for which it is made. There are some requests available for authentication when one downloads particularly or enter a database, this restricts the misuse of digital products.²⁸

Growth of software in India have been phenomenal since 1990s, Indian Government formulated IT Act especially for the protection of software in 2000 (latest amended in 2008) it helps to protect the cybercrime and also protects digital signatures, electronic records, etc. but fails to protect computer software. Softwares are protectable under Copyright Act, Patent Act as well as under Trade Secrets. But despite the legal protection, laws and orders for software protection are not recognized enough in India, in most of the cases British and American jurisdiction are followed.²⁹

In today's era it is very convenient and easy for the copyright owner to reach to a large number of people and users with the help of internet and advanced digital technology and also help people to use or access the material by paying an amount which is named as a 'pay and use' policy of copyright system. But on the other hand, there is a disadvantage of technological development it also assists users to unauthorized downloading and copying of material from the internet at a much cheaper rate or sometimes free and with faster speed and with same quality.

Copyright Protection- Emerging Trend

Various countries are harmonizing their own national laws and rules on the basis of WIPO treaties

per se WCT and WPPT. India has not yet acceded to WCT and WPPT though the amendments in Indian Copyright Act in 2012 were made according to WCT and WPPT to address and solve some of the digital challenges. WCT contains all new minimum standards that restrict the distribution, use and authorization of work in public over the internet and also provide rights to distributors and creators to have a control over their copyrighted work over the internet hence there seems to be no direct disadvantage in signing WCT and WPPT rather it will place new exceptions/ limitations on the Indian government to modify its laws according to the new circumventions with further development and revolution in technology especially in the digital environment.

With the latest amendments in the Indian Copyright Act in the year 2012, all the aspects covered under WCT and WPPT have been united.²⁶ Section 65 has been introduced in the Indian Copyright Act in the year 2012. Section 65(A) deals with the protection against the ways of technological measures while Section 65(B) deals with the legal action to be taken in case of infringement issues related to protection and removal of RMI without the authorities' concern, and distribution, communication, broadcasting without the consent of the authorities. Section 65(B) of the Act is broadly classified into further two sub-sections numbered as 65B(i) and 65B(ii) that were added as a new amendment in the Indian Copyright Act; 65B(i) deals with the issues related with removal of RMI intentionally, infringer shall be imprisoned for at least two years and with a heavy fine whereas 65B(ii) also contains similar kind of penalties as of 65B(i) for a person who distributes, broadcasts or communicates the material after altering or removing RMI without the consent of the authority.²¹ This new amendment conforms to Article 12 of WCT and Article 19 of WPPT relating to rights to management information. These latest amendments were introduced in the Indian Copyright Act to solve the upcoming issues in the digital domain.

India is a signatory to Universal Copyright Convention, Rome Convention, Berne Convention etc. and also a member of WTO-TRIPS agreement. It is an interesting fact that India has neither signed WCT nor WPPT and this could be due to the strict copyright provisions in the treaties which undermine many goals of accessibility currently being pursued by India.³⁰ Debate is still on as to whether India should soon sign these international treaties in future

but latest amendments in the Indian Copyright Act seem to be the elementary steps of signing these treaties but much information on this is not available in the public domain.

To deal with infringement in the digital domain, adoption of DRM provision will lead India to enter into the TRIPS+ regime as DRM provisions are not under TRIPS obligations. DRM provisions are nothing but contain all safety measures which are imposed by WCT and WPPT. More than 89 countries became signatory to WCT and WPPT and by this it is clear that these nations have been able to confront the pressure by joining these two internet treaties. If India accedes to these internet treaties, this might create a pressure on other nations to become signatory, consequently it will push entire world into a TRIPS+ regime.²⁸ These reasons might have prompted Indian Government to have a discussion for deciding India to become a signatory to these International Copyright Treaties or TRIPS+ regime standards.

Various provisions are available for the broadcast rights in the Copyright Act which are directly associated with the rights of the owners to control the content which is being broadcasted. The Indian Copyright Act is competent enough to resolve the issues coming up with the new technological advancements. Indian Copyright Act already incorporates all the provisions mentioned in Rome Convention and TRIPS Agreement as a specific Section in the Act such as, Section 14 and Section 37. Section 14 deals with the rights of the author to communicate his/her work publicly via broadcast or any other mean whereas Section 37 deals with the rights against signal piracy. Copyright Act provides ownership to author to create a monopoly of rights on transmission of the original work and not on the content which is being transmitted. Discussion on drafting a new treaty named 'Treaty on the Protection of Broadcasting Organizations' is under process at WIPO, but further need of this new treaty for India is still under discussion.

Culture is thought to be the engine of the sustainable development. With the advancement and change in the culture which is closely linked to technological development, advancement in the technology has made the task for enforcement of copyright protection much more difficult. It has now become a challenge to respond to the new development in an appropriate and effective way. It

has now become necessary to maintain a balance between two really important aspects in copyright: infringement and expensive enforcement. The problem associated with the infringement in copyright is loss of earnings and additional cost expenses in unsuccessful litigation.

There is an extensive requirement to make efforts focusing on educating the consumer especially the younger generation, to overcome the challenges such as duplication and infringement and also to respect the talent and ability of a person whose work contributes for cultural, scientific and economic benefits of the society as whole. Apart from developing the technology for stopping infringement, it is required to curb infringement at a small level for example, by avoiding illegal distribution of downloaded copyrighted material. Besides this, developing the technologies high in copyright standard can also reduce infringement for example, high bandwidth digital content protection (HDCCP).

To resolve these issues, various steps can be taken up by the government as well as the individuals, such as, raising the awareness and educating stakeholders and public about the infringement and the safety measures. Besides, there is need to develop the modernized methods of protection of software and other copyrighted material to keep the creativity and innovation alive. Also, there is a need to improve IP enforcement by making strict laws and policies for effective enforcement of the law against the infringement cases and train the judiciary and police agencies adequately for effective enforcement. Sale of software must be fully licensed and must carry special characteristics embed in it that one can easily catch the person if it is used illegally without paying for the usage.

Infringement has become a serious issue nowadays especially when it comes to copyright protection in the digital domain. To conclude, this research article addresses the advantages of the remedies that are available in the Indian Copyright Act (amended) and the international treaties that are available to address the challenges for these issues and to solve these problems. Though several technological measures have been developed to control the illegal usage of the digital material but still there is a huge need of well skilled and trained police force that can detect infringement and can stop it and enforce the legal protection.

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