



PROTECTION OF COPYRIGHT UNDER DIGITAL RIGHTS MANAGEMENT SYSTEM

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ABSTRACT

The advent of digital technologies has radically posed the challenges to the copyright regime from regulating a small portion of human life to regulating absolutely every bit of life lived through a computer. Though, in a way the emergence of digital and information technologies has promised the copyright owners with a widening market, but on the other side the same technologies have sounded a threat to the copyright owners with a loss of control over their own property. As newer digital products enter the market, efficient management and controlled of such products is become a major concern. The copyright owners are under a constant threat of losing control over their copyrighted work. To protect their works against the splurge of digital goods in the information superhighway, they are using technology to retain control. this paper gives an overview of copyright issue in digital age. The paper deals with the system of Digital Rights Management that how this system works to protect the copyright which is in digital form as well as the laws regulating it and the amendments made in this regard. This paper finishes up with some remarkable suggestions and conclusion.

Key words: Digital Rights Management, digital technologies, digital goods, copyright

INTRODUCTION

Copyright belongs to category of rights known as 'Intellectual property rights. Intellectual property implies property rights given for creative work of human intellect. Thus, Copyright law protects certain creative works of human intellect and thereby plays an important role in promoting intellectual creativity. The primary purpose of copyright law is to foster the creation and dissemination of intellectual works for the benefit of the public. It serves as an important basis to promote, enrich and disseminate the national cultural heritage by means of recognizing exclusive rights to authors for a limited period. The social, economic and political development of a nation to a greater extent depends on the creativity of its people.

The higher the level of protection, greater the encouragement for authors to create and greater will be the intellectual wealth of a country. Copyright is a legal property right which concedes certain restrictive rights comparable to the protected work including right to duplicate the work for any material structure or form, to give duplicates of the work in the open, to play out the work in the open, to make any cinematograph film or sound chronicle in regard of the work, to make commercial misuse of the work.

Laws securing Copyright have been acquainted as a reaction with the broad business misuse of functions because of innovative advancement in print press strategies. New innovations with its improvement posed danger to Copyright insurance. The development of the computerized climate represented another phase of opportunities and difficulties for national and global property protection.

With the advent of information technology, managing intellectual property rights especially copyrights in content industries have become very difficult, and thus Digital Rights Management (DRM) is being applied in the publishing and information industries. Copyright is the foundation of the publishing industry as well as all content industries, and DRM can supplement copyright protection as well as support mutually agreed licensing arrangements.

THREAT TO COPYRIGHT IN DIGITAL ERA

Information technology has opened the door of digital market and now the Copyright work can be sold in digital format but it also poses serious threat to the copyright owner to protect their work in digital atmosphere.

With the recent developments in technology, problems of different kind have appeared. With downloading speeds becoming faster and faster, more files are distributed over the Internet. It could for example be music, books, pictures, movies, or basically anything that comes in digital form. Not all of these files are currently shared legally. Usually a person, who has a license for a product, can copy and sell/give it to other people, all over the world, within minutes without too much trouble. It is hard to detect and stop these transactions. Digital Rights Management (DRM) was introduced to stop the unwanted and uncontrolled copying of a product. The DRM technology makes the file unable to open (i.e., play) if not given the correct license template (key). You can still copy and share files with everyone, but they cannot be opened. On top of this, specific rights can be set. For example, you can buy a song with the right to listen to it four times and copy it once within the next twelve days. A strange example, but the point is there are no specification limits. The International Data Corporation (IDC) group defines DRM like: "Digital rights management (DRM): The chain of hardware and software services and technologies confining the use of digital content to authorised use and users and managing any consequences of that use throughout the entire life cycle of the content. DRM is one kind of content protection technology."¹

Content is increasingly in digital form and is distributed using the Internet. The ease of copying has created a need to develop a means to protect it. Digital rights management (DRM) tries to find a solution to this problem inside a triangle set by technology, economics and law. The optimal solution is a compromise between

¹ IDC group report p.3

technological possibilities, cost, ease of use, privacy and rights defined in law. The proposed DRM architecture uses some technological methods as well as threats of financial losses to protect the content. The objective of DRM technologies is to provide a mechanism for the complete content management lifecycle, focusing on aspects that deal with and include the management of rights information and usage control. More formally, DRM involves the description, layering, analysis, valuation, trading, and monitoring of the rights over an enterprise's assets, both in physical and digital form and of tangible and intangible value. DRM covers the digital management of rights, be they rights in a physical manifestation of a work or rights in a digital manifestation of a work (Iannella, 2001). The functional DRM architecture can be divided in three areas: content creation, content management and content usage. Content creation includes the creation of the media and defining the rights. Content management is about content distribution and trading of the rights. Finally, content usage is used to enforce those rights are adhered to and to track content usage. Many digital service providers already assume selling their digital content over computer networks. However, without serious protection and management of digital rights, digital content can be easily illegally copied, altered, and distributed to a large number of Internet users. In response to these threats, to protect digital content intellectual property, rights management systems are needed to prevent unauthorized access to digital content and manage content usage rights. By looking at Digital Rights Management specifications [3][4][5], a DRM system must offer a persistent content protection against unauthorized access to content, and permitting access only to authorized users.

INTRODUCTION OF DRM

Digital Rights Management is a kind of tool in the hands of copyright owner to protect their online digital content effectively. Despite the fact that DRM frameworks are getting more grounded continuously, somebody would figure out how to break them and that would bring about free appropriation of the content without the copyright proprietor's authority. To forestall breaking/circumvention of the DRM frameworks the help of law is extremely fundamental. To address this issue, laws have been authorized in different countries forbidding circumvention of DRM frameworks intended to secure the advanced privileges of the copyright owner. Such laws secure the rights by making circumvention of innovation measures to ensure computerized content illegal.

The first run through DRM was presented in the last part of the 1980s. A portion of the organizations in the business existing today, were established at that point and in the mid-1990s. Anyway, the majority of the present DRM organizations came during the most recent five years.

The organizations creating DRM accompany a wide range of innovation foundations. Some begin from the security business. Two are notable worldwide organizations (Microsoft, IBM). Many are side projects (for example Content Guard, from Xerox). Others come from the media region like the amusement, online industry, programming authorizing, pay TV, or distributing advancements (for example Adobe). Inter trust (1990) is one of only a handful few unadulterated DRM innovation organizations.²

² International Data Corporation, group report, p.8

In contrast to the sellers, the DRM advances are generally new. You could say that DRM is a “fine balancing act between the needs of the content owner on the one hand and the content consumer or user on the other”³. On the off chance that the DRM capacities as it should, the clients won't ever even see that it is working behind the scenes. Just when access rights have been abused will it show up and get observable to the client.⁴

The quick advancement in innovation as of late has made it exceptionally simple for individuals to duplicate, adjust or disperse documents. Presently illicit record sharing is becoming wild. This business causes the business to lose billions consistently. Illicitly disseminated records, for example, MP3s (Moving Picture Experts Group sound layer 3), are spread all over the place. From this, the requirement for DRM has jumped up.

DRM is, for the financial reasons referenced over, a need for most substance suppliers today. Included here, are significant organizations from the film and record industry, just as book distributers and on-line banks. You can say that each organization that produces anything carefully or needs secure verification and moves is influenced.

DIGITAL RIGHTS MANAGEMENT SYSYTEM

The rise of cutting-edge media and easy to-electronic change propels has boundlessly extended the concerns of copyright-asserting individuals and affiliations, particularly inside the music and film adventures. While straightforward media certainly lose quality with each copy age, and sometimes regardless, during average use, modernized media records may be replicated a boundless number of times with no degradation in the quality. The rising of PCs as nuclear family mechanical assemblies has made it accommodating for clients to change over media (which may conceivably be protected) at first in a physical, basic or broadcast structure into a far reaching, electronic design (this sequence is called tearing) for adaptability or audit later. This, gotten together with the Internet and popular record sharing gadgets, has made unapproved dispersal of copies of protected progressed media (moreover called automated burglary) much less difficult.

“Digital rights management (DRM): The chain of hardware and software services and technologies confining the use of digital content to authorised use and users and managing any consequences of that use throughout the entire life cycle of the content. DRM is one kind of content protection technology.”⁵

In 1983, the initial application of digital rights management (DRM) was refined into a software service system (SSS) developed by Japanese designer Ryuichi Moriya⁶ and thus super-distributed. SSS is encrypted, restricting specific tools and restricting further authorized installments from being sent by the copyright holder. The basic guidance of the SSS, and therefore the super supply, should be that the circulation of the

³ Ibid.

⁴ International Data Corporation, group report, p.11

⁵ International Data Corporation (IDC) Group Report, p.3.

⁶ Available at: [Patent application 58-186100](#) (Publication #60-077218), Software Control System, Japan Patent Office, 5 October 1983, Ryoichi Mori, applicant. Reported by [Industrial Property Digital Library](#) (last visited on September16, 2020).

scrambled improved things should be completely unrestricted, and the customers of those things will be allowed to redistribute them, as well as be compelled to do so.

Advanced rights the executives (DRM) strategies or technological protection measures [TPM]⁷ are a bunch of access control innovations for limiting the utilizations of exclusive equipment and copyrighted works.⁸ DRM advances attempt to control the utilizations, adjustment and conveyance of copyrighted works, (for example programming and interactive media content) just as frameworks inside gadgets that authorize these policies.⁹

Digital Rights Management (DRM) is the usage of development and structures to restrict the use of protected progressed materials. DRM devices are planned to get the advantages of the copyright holder and hinder unapproved change or dispersal.

Taking or replicating others' thoughts or work is a deep-rooted wonder. Be that as it may, current innovation has made theft dramatically simpler. A few snaps of a mouse, many protected pictures, accounts, and sound records can be shared or downloaded from the Internet — consistently without authentic approval. From Napster to sneaking and "getting" craftsmanship, this activity is vast and extravagant. Another report from the U.S. Office of Commerce evaluates that online burglary costs the US economy almost \$30 billion consistently every year.

Despite the fact that modernized substance is covered under copyright laws, noticing the web to get criminal conduct is trying. Thus, DRM receives a proactive technique to guaranteeing progressed content by making impediments to taking it regardless.

There are different approaches to manage DRM and endless undertakings to develop new strategies. Various DRM devices work through encryption, or PC code introduced in the high-level content, to limit access or use. These mechanical assemblies can deal with the events, devices, people, or time spans that the substance can be gotten to or presented.

DRM, or Digital Rights Management, includes different techniques for shielding advanced documents from robbery, burglary, or unapproved access. In the distributing business, DRM insurance for digital books generally appears as secret phrase, watermark, and encryption-based arrangements to ensure against robbery. The degree of digital book security a distributor needs relies upon the sort of record being distributed, the target group, and the particular dispersion channel. DRM arrangements need to secure IP

⁷ Available at: ["The pros, cons, and future of DRM"](#). Cbc.ca. 7 August 2009. Digital locks – also known as digital rights management (DRM) technologies or technological protection measures (TPM) (last visited on January 7,2020).

⁸ Available at: [Computer Forensics: Investigating Network Intrusions and Cybercrime](#). Cengage Learning pp. 9–26. ISBN 978-1435483521 (last visited on September 16, 2020)

⁹ Available at: ["Fact Sheet: Digital Rights Management and have to do: Technical Protection Measures"](#) (last visited on July 29, 2020).

yet should do as such in a way that is helpful and consistent for the client. A DRM arrangement that totally makes sure about substance yet is bulky and meddlesome for the client could at last damage deals.

The various digital rights management technologies are as follows:

Limited Install Activations

This is finished by requiring an online initiation through the merchant's worker, after the establishment of the item. For model, assume an enemy of infection programming is a '3 client in particular' item. This would imply that each time it is introduced on a PC framework, the client would need to initiate it on the web. The client can just introduce the item in just 3 PCs simultaneously in light of the fact that the worker would check the quantity of PCs from where it was enacted. This restricts the quantity of clients who can utilize it.

An illustration of this is the OTT stages and their estimating plans. Netflix has different plans that obviously notice the quantity of gadgets permitted which range from one and go-up to four. These stages likewise have certain limitations regarding who can download and save disconnected. On the off chance that the stage recognizes any unapproved utilization it creates disclaimer of such a large number of individuals utilizing it. This causes them hold control and track use.¹⁰

Software tampering

Numerous sellers intentionally bring lethargic bugs into their applications and computer games which would be actuated at whatever point the item is suspected to be pilfered. For instance, the game would purposely begin smashing when the PC is associated with the web and the item clandestinely sets up an association with the worker. Microsoft Windows as well, actualized this element in Windows XP and Windows 7 that at whatever point the OS was discovered to be pilfered, the work area backdrop would turn dark and volume symbol would be bolted.

¹⁰ Available at: https://www.ftc.gov/sites/default/files/documents/public_statements/different-perspective-drm/rosch-berkeley-drm20speech-mar9-2007.pdf (last visited on September 15, 2020).

Persistent online authentication

Persistent online authentication always-on-DRM requires to user to remain connected to the online server in order to use the product. This is popular mostly with video games, which require the user to connect to the server to play, even when the user is playing in single-player mode. This, however, has a major disadvantage: the product becomes unusable when there's a problem with the internet connection.'

Product Keys

A product key, in any case called an item key, is a specific programming-based key for a PC program. It affirms that the copy of the program is extraordinary. Item keys involve a movement of numbers and furthermore letters. This progression is consistently entered by the customer during the foundation of program, and is then passed to an affirmation work in the program. This limit controls the basic progression as demonstrated by a mathematical figuring and tries to organize the results to a lot of real game plans. This has been, by a long shot, the most well-known method of confirming an item. While buying the application, the client would be furnished with an item key which he/she would need to put while introducing the application. It would later be checked by the worker to discover a match as each duplicate of the application has an alternate key. In the event that a match is discovered, the item isn't enacted.

Enterprise digital rights management

It's a combination of identity and access management and encryption. The content is encrypted and coupled with the protection that allows different access and modification policies for different entities. The protection is independent of the device and access location. It is mainly used to secure documents such as MS Word docs, PDF, AutoCAD files etc.

Content Scrambling Framework

It's a blend of personality and access the board and encryption. The substance is encoded and combined with the insurance that permits distinctive access and adjustment approaches for various elements. The security is autonomous of the gadget and access area. It is mostly used to get records, for example, MS Word docs, PDF, AutoCAD documents and so on.

DRM In Streaming Services

Web-based features like Netflix, Comcast, Amazon prime and so on use items, for example, Microsoft PlayReady, Xinfinitly and so on, which are media document duplicate anticipation advancements which incorporate the idea of space (gathering of gadgets having a place with a similar client which can have

similar licenses), installed permit (the licenses inserted with the substance) of record and so forth They're generally convenient and stage free.

AMENDMENT UNDER COPYRIGHT LAW

To update the Copyright framework the global community drew up two Treaties, the WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT). Also, to upgrade the right of the creators the treatise gives lawful assurance to the technological measures utilized by the creators in advanced digital transmission. Innovative measures are the innovation which secures the online content.

In response to the two internet treaties i.e., WCT and WPPT India introduced an amendment related to Digital Right management in Indian Copyright Law in 2012. There are various DRM technologies which protect the online digital content.

After the adoption of the two internet treaties Digital Rights Management got the legal protection in national and international statutes. Article 11 and 12 of WCT and Article 18 and 19 of WPPT obliges the contracting parties to make effective provision for protection of online digital content under their national legislation. India in pursuant to these two internet treaties made an amendment in the year 2012. However, the amendment does not seem to be effective in protecting online digital content. Beside this some burning issues are there like DRM and privacy, DRM and Copyright Societies which still need more attention.

Executing strong laws against circumvention of DRM frameworks, which could stop piracy totally, advances progress of valuable expressions in created nations yet will deny admittance to data, information and amusement to individuals in developing nations like India. Due to the non-distinct nature of the Internet and the web, it can't be separated like land into various domains to make various principles for various nations dependent on the improvement status of the country. Under such a circumstance, a framework that would be useful to the world overall ought to be received. Subsequent to taking a gander at the interests of both developed and developing nations, it would be favorable for the world in general to have a solid legitimate security against circumvention of DRM frameworks since that would support inventiveness in helpful expressions which would thusly be valuable for humankind. On the off chance that there is no creation there would be no data, information and amusement. Accordingly, rather than stopping creation in general it is better to support its encouraging by executing anti-circumvention laws in India and all countries of the world.

Sections 65A and 65B were obtainable by the Copyright Amendment Act, 2012 in India to address circumvention of ETMs and DRM. Section 65A provides that if any individual circumvents any feasible mechanical measure applied to guarantee any of the rights met by the Act determined to infringe such rights will be chargeable with confinement which may loosen up to two years and will moreover be committed to fine. Section 65B of Indian Copyright Act gives that any person who purposefully removes or changes any rights the board information without power or distributes, imports for allotment, broadcasts, or confers to individuals overall without power copies of any work or execution understanding that electronic rights the

chief's information has been taken out or adjusted without force will be at fault with confinement which may reach two years and will in like manner be in danger to pay fine.

There are also common treatments available for something alike. These agreements are extremely beneficial to the electronic distribution, music, and game industries, as artists use DRM frameworks to protect their work from piracy.¹¹

RECOMMENDATION

In order to strengthen the provisions and its enforcement, the following measures may be taken:

- The legal framework of Indian copyright law envisages penal and civil provisions to safeguard the interests of the creators, however, it is not free from hassles and hurdles which need to be eliminated.
- The enforcement aspect of the provisions is a matter of great concern and there is an urgent need of building better administrative machinery for the enforcement of the provisions of the legislation which requires well-oiled enforcement machinery.
- There is a need for trained and well-equipped specialized police force for detection and enforcement of provisions relating to violation of copyright and there is also a need for change of the judicial mindset in dealing with copyright violations.
- There are still misconceptions, difficulties of access to courts, slow growth of copyright bar and delay in disposal of whatever cases reach the courts. It is submitted that redress and access to the adjudicatory machinery must be improved and this can be done in a better manner, if copyright or intellectual property tribunals manned by specialists in the areas are set up throughout the country.
- The ubiquitous nature of Internet necessitates the consideration of multinational enforcement, which will to some degree require the harmonization of domestic laws concerning enforcement measures and facilitate the cross-border protection of copyright in the digital age. Diversities in basic theories and in the practice of national systems protecting copyright and related rights create obstacles to effective international and national implementation of protection of authors and other right owners.
- The experience and achievements of the harmonization programmed of the European Community demonstrate the possibilities of bringing together important provisions of diverse national systems. The unity of legislative approach will, it is submitted, be the only effective way of dealing with the problems posed for the exercise of copyright and related rights in the borderless environment created by the Internet and other international communication systems.
- The provisions of the Berne Convention taken in conjunction with those of other relevant international instruments and the relevant regional instruments can, it is suggested, provide the basis for a unified global system of copyright, and, to be effective, future planning should be based on moves towards a world copyright regulation which will incorporate harmonized rules on all fundamental issues.
- Last but not the least, since, the pirate is using new technologies in the digital environment to infringe on

¹¹ S.R. Subramanya and Byung K. Yi, "Digital Rights Management", 0278-6648

the copyright and related rights, so in the same vein, the holders of these rights should use the very means to counter such actions of infringer. As renowned novelist Chinua Achebe once said the Engel bird says 'since man has learnt to shoot without missing, I have also learnt to fly without perching'.

- The recent Amendments to the Indian copyright law have certainly given room for using creative lawyering skills to develop and structure innovative business models to help the industries effectively deal with the changes.

Being blamed for the poor protection and enforcement policies, it is high time countries should stringently follow provisions of digital rights management and keep a check on copyright infringement in the digital environment. If they are not taken care of again it might eventually lead to the collapse of content industries, leaving society as the ultimate loser.

CONCLUSION

In the time frame of 500-year copyright has existed in one structure or the other, the law has consistently lingered behind in adjusting to the new conditions that have been achieved by the technological development. The law perceiving creator's privileges in their works, for instance, took more than 200 years in creating between the development of the print machine and the codification of the Statute of Anne.

With the passage of time, the law has been reacting faster to technological changes, but has yet to match pace with innovation. The WCT and the DMCA that followed it were legal reactions to digital technology that was already almost a decade old. It is, therefore, not reasonable to expect that at one point, the law will be at par with technology and will be able to finally maintain an optimal balance between interest's society and the copyrighted.

It is therefore my proposal that the copyrighted adapt to the new technology by finding new ways in which to derive financial benefit from their works. If history has shown us one thing, it's that technology will change in ways that we cannot fathom and it is unreasonable to expect the law to be prepared for unimaginable changes.

The profitability of creative works has not yet been shown to reduce because of the effects of technology. Neither has the number of new works coming to market declined. Technology has had quite the opposite effect by providing new ways to exploit markets, increase penetration and accelerate production.

Businesses are adapting their ways of doing business to the new technological landscape, devising new business models to fashion alternative revenue streams. Digital Rights Management technology is also constantly evolving to protect digital content from being pirated so easily. Legal solutions, however, are struggling to keep up with the changing environment. Secondary liability in copyright infringement is being proven in a variance of cases, but technology continues to march on and precedent can no longer be relied on to provide a basis for law in these types of cases because of the ever-changing environment.

A total re-evaluation of the rights associated with copyright might be due and the resulting regime should take the drastic changes in the environment into account to formulate new rules that will restore balance in

the favor of the public and not stifle legitimate advances in technology.

