

## **A Digital Right Management and IPR in the Information Age**

**Gulshan Kr. Sachdeva**

*Library In-Charge,  
JK Padampat Singhanian Institute of Management & Technology, Gurgaon, India  
E-mail: gksachdeva30@gmail.com*

### **Abstract**

Historically, changes in technology have given rise to new copyright issues in three manners: new subject matter, new use, and decentralized infringement. Digital Right Management in the information age, accompanied by the ability to access, distribute and manipulate content in an unprecedented way, has posed a serious challenge to the protection of intellectual property rights. The challenge is demonstrated in what is termed “digital dilemma”, the coexistence of enrichment of information made possible by reduced cost and faster pace in information production, and the enrichment of means of illegal information copying, distribution and use. It comes in different forms: digital reproduction/adaptation, temporary storage, providing online access, point-to-point transmission, and broadcasting, dissemination in closed user groups, decoding, screen display or use. To deal with the dilemma, current copyright regime should adapt itself to the changing technological environment. Moreover, as intellectual property rights issues have become an international concern.

### **Introduction**

As an important characteristic of the information age, digital right management is drastically changing the communication industry. It has created opportunities for the society to capitalize on the technological progress in terms of new ways to access and distribute information, but it also has posed challenges for people to deal with certain economic, legal and policy issues. Copyright issue in the context of digital right management is one of them.

Defined by the European Commission (1997), convergence is “the ability of different network platforms to carry essentially similar kinds of services” or “the coming together of consumer devices such as the telephone, television and personal

computer”.

In one word, digital right management is the use of common digital technologies and communication infrastructure in the production, storage, transmission or distribution of information services and products in the communication industry based on the digitization of information. Basically technologically driven, digital right management is a multi-dimensional phenomenon, occurring at the levels of consumer devices, markets, industries and networks. This trend of convergence is not only driven by technology, but also by government deregulation policy. This movement entails a re-thinking of a host of economic and policy issues; the interaction between digital technology and copyright is one of them.

### **Definitions**

"Digital Rights Management" DRM refers to a collection of systems used to protect the copyrights of electronic media. These include digital music and movies, as well as other data that is stored and transferred digitally. For example, the Apple iTunes Music Store uses a DRM system to limit the number of computers that songs can be played on. Each audio file downloaded from the iTunes music store includes information about the owner of the file and how many times the file has been transferred. The protected files will not play on computers that have not been authorized to play the music.

Digital Rights Management is important to publishers of electronic media since it helps ensure they will receive the appropriate revenue for their products. By controlling the trading, protection, monitoring, and tracking of digital media, DRM helps publishers limit the illegal propagation of copyrighted works. This can be accomplished by using digital watermarks or proprietary file encryption on the media they distribute. Whatever method publishers choose to employ, DRM helps them make sure that their digital content is only used by those who have paid for it.

Digital rights management (DRM) is a systematic approach to copyright protection for digital media. The purpose of DRM is to prevent unauthorized redistribution of digital media and restrict the ways consumers can copy content they've purchased. DRM products were developed in response to the rapid increase in online piracy of commercially marketed material, which proliferated through the widespread use of peer-to-peer file exchange programs. Typically DRM is implemented by embedding code that prevents copying, specifies a time period in which the content can be accessed or limits the number of devices the media can be installed on.

Although digital content is protected by copyright laws, policing the Web and catching law-breakers is very difficult. DRM technology focuses on making it impossible to steal content in the first place, a more efficient approach to the problem than the hit-and-miss strategies aimed at apprehending online poachers after the fact.

### **Stakeholders in the Digital Dilemma**

Copyright protection in the information age is not a simple technological issue.

Copyright law, designed to “protect creative expression in order to induce creative activity” is about “control, access and ownership” and has to strike a balance two interests, “the need to keep the marketplace unregulated and the need to stimulate enterprise”. As Aronson points out, “finding and maintaining the right balance between innovators and users recurs over and over again as a critical challenge facing policy makers”. Here lies the tension inherent in the copyright regime, control and access. Too much freedom in access leaves creators poorly compensated, and their motivation for creation and dissemination of their works will be dampened; too much control raises the cost of public’s access to the copyrighted materials. The core issue is about innovation and creativity how to design a mechanism to compensate the creators for their creativity and firms for their investment, and how to allow future creators to make use of the “intellectual commons” at affordable cost and make future creation realizable. In a sense, all that is important about copyright comes down to one critical issue, the struggle for control and access. Here also lies the confrontation of copyright owners’ self-interest and public interest. On the one hand, creators and producers want to have a tight copyright control over their products so as to capitalize on their creativity and investment, and keep their motivation for further enterprise. This is in the self-interest of copyright owners. On the other hand, users need to have access at reasonable cost so as to make use of the “intellectual commons” and produce more innovative and creative works. This is in the interest of the whole society. As a matter of fact, many creative activities “depend upon a robust and self-renewing public domain” that “allows cultural resources to be freely available so that others can build upon resources”. A too strict copyright law will deplete the “intellectual commons” and put a limit to future creativity. Finding a balance between stimulating creativity and ensuring access is not an easy task, because different stakeholders have significant interest in the copyright system. In the context of digital convergence, as Simon points out, the tension, or the balance that has to be achieved between control and access, comes in the struggle between traditional copyright owners publishing companies, motion picture producers, software developers, recording studios and those favoring unlimited access to info on the Net librarians, educators and foreign interests. As a matter of fact, copyright stakeholders in the US have arranged themselves into several groups producers of copyrighted content; users of copyrighted content (i.e., libraries, educational institutions, and the public), and content distributors. Content producers aim to protect their ownership right, content users want to enjoy access, and content distributors want to deliver content free of piracy charges. The reaction of different groups to digital convergence has been varied, and their interests are reflected in their take of copyright within digital context. Content producers have been wary of the potential impact of the digital technologies on their copyrighted content, and have been pursuing technological, legislative and legal means to protect their ownership rights because of the huge economic stake in copyright. At a public hearing in November 1993, the information industry emphasized that new digital technologies would cause them to lose control over their copyrighted content, and argued that copyright law should be amended “to ensure that incentives to invest in the creation of information products be preserved”. The movie industry, together with the electronics industry, developed the content scramble

system (CSS) to protect their movies on DVDs. The music industry sees many digital technologies and programs such as MP3, Gnutella and Freenet as a threat to its economic interests in copyrighted materials, so the Recording Industry Association of America sued both MP3.com and Napster for violating copyright laws. Days after DeCSS, a program intended to defeat the DVD encryption system, was released, the movie industry filed lawsuits against the use of the program. Publishers have been active in getting more control over the works they publish. For instance, publishers have been attempting to gain more control over their publications on the ground of the negative impact of digital media on revenue. Some media distributors have also argued that they need to “obtain broad assignment of rights from authors” in order to exploit the global market.

### **The Role of Multilateral Organizations**

The fast diffusion of digital technology and the global reach of the Internet have made copyright right not only a national issue, but also an international issue. Because of the international scope of the Internet, copyright laws have consequences that go beyond national borders. Within this global context there are many national variations due to differences in copyright laws and practices, traditional cultural attitudes towards copyright and national interest. Jurisdictional problems arise in enforcement of copyright laws because cyberspace makes it difficult to define the concept of the location of an action and to decide on applicable law. Two multinational organizations are involved in the international copyright regime, World Intellectual Property Organization (WIPO) and World Trade Organization (WTO). WIPO aims to “help member states create multilateral norms, help developing countries write and administer national laws, and serve the member states through administration of the treaties”. It has been actively involved in copyright protection issue at a global scale. From 1991 to 1995, it sponsored five international conferences in different cities around the world to deal with communication technology and intellectual property law. At the WIPO Diplomatic Conference in Geneva in December 1996, it approved the WIPO Copyright Treaty, to update the 1886 Berne Convention for Protection of Literary and Artistic Works to adapt the changing technological environment. In the Copyright Treaty, WIPO followed the traditional copyright philosophy by maintaining a balance between copyright and public access, and trying to “preserve the intent of the intellectual property policy of expression”. In this regard, WIPO did not bring significant changes to the copyright regime. However, it did recognize “the profound impact of the development and convergence of information and communication technologies on the creation and use of literary and artistic works”, and wanted to “develop and maintain the protection of the rights of authors in their literary and artistic works”. As an organization specializing in copyright law with an international scope, WIPO can be more active in certain fields. For instance, in digital rights management (DRM), “WIPO might undertake to collect data on or otherwise review the extent to which DRMs are being deployed and the effect of technological measures on legitimate access to copyright works”. Yet, as an intergovernmental organization, WIPO also has its weakness. It may sponsor negotiations that result in

treaties with norms for copyright protection, but it does not have an effective enforcement mechanism realize those norms internationally. In this respect, the WTO's TRIPS (Trade-Related Aspect of Intellectual Property Rights) Council amends the deficiency of WIPO system by bringing a dispute resolution mechanism to make international enforcement of copyright law possible.

It has been suggested that both WIPO and WTO's intellectual property right regime need improving in this information age. For instance, Samuelson suggests that both organizations should acquire disinterested expertise from the hi-tech community about current information technologies. With disinterested opinions, decision-makers can better understand the technological complexity of the digital convergence and the opportunities and challenges it brings to the copyright regime, and then come up with appropriate copyright protection framework that takes into account of the interests of different parties. Also she suggests that the two organizations should be open to new paradigms of intellectual property. In the case of copyright, the copyright regime needs to be open-minded to new issues in the information age. Digital convergence brings about serious challenges, so maybe it is proper that two organizations review their norms and rules for copyright protection and see whether they are "truly responsive to the needs of the emerging information economy".

## **DRM & Technologies**

### **E-books**

Electronic books read on a personal computer or an e-book reader typically use DRM restrictions to limit copying, printing, and sharing of e-books. E-books are usually limited to a certain number of reading devices and some e-publishers prevent any copying or printing. Some commentators believe that DRM is something that makes E-book publishing complex.

Two of the most commonly used software programs to view e-books are Adobe Reader and Microsoft Reader. Each program uses a slightly different approach to DRM. The first version of Adobe Acrobat e-book Reader to have encryption technologies was version 5.05. In the later version 6.0, the technologies of the PDF reader and the e-book reader were combined, allowing it to read both DRM-restricted and unrestricted files. After opening the file, the user is able to view the rights statement, which outlines actions available for the specific document. For example, for a freely transferred PDF, printing, copying to the clipboard and other basic functions are available to the user. However, when viewing a more highly restricted e-book, the user is unable to print the book, copy or paste selections. The level of restriction is specified by the publisher or distribution agency.

Microsoft Reader, which exclusively reads e-books in a .lit format, contains its own DRM software. In Microsoft Reader there are three different levels of access control depending on the e-book: sealed e-books, inscribed e-books and owner exclusive e-books. Sealed e-books have the least amount of restriction and only prevent the document from being modified. Therefore, the reader cannot alter the content of the book to change the ending, for instance. Inscribed e-books are the next level of restriction. After purchasing and downloading the e-book, Microsoft Reader

puts a digital ID tag to identify the owner of the e-book. Therefore, this discourages distribution of the e-book because it is inscribed with the owner's name making it possible to trace it back to the original copy that was distributed. Other e-book software uses similar DRM schemes. For example, Palm Digital Media, now known as Ereader, links the credit card information of the purchaser to the e-book copy in order to discourage distribution of the books.

The most stringent form of security that Microsoft Reader offers is called owner exclusive e-books, which uses traditional DRM technologies. To buy the e-book the consumer must first open Microsoft Reader, which ensures that when the book is downloaded it becomes linked to the computer's Microsoft Passport account. Thus the e-book can only be opened with the computer with which it was downloaded, preventing copying and distribution of the text.

### **DRM and Documents**

Enterprise Digital Rights Management (E-DRM or ERM) is the application of DRM technology to the control of access to corporate documents such as Microsoft Word, PDF, and AutoCAD files, emails, and intranet web pages rather than to the control of consumer media. E-DRM, now more commonly referenced as IRM (Information Rights Management), is generally intended to prevent the unauthorized use (such as industrial or corporate espionage or inadvertent release) of proprietary documents. IRM typically integrates with content management system software.

DRM has been used by organizations such as the British Library in its secure electronic delivery service to permit worldwide access to substantial numbers of rare (and in many cases unique) documents which, for legal reasons, were previously only available to authorized individuals actually visiting the Library's document centre at Boston Spa in England.

### **Audio CDs**

Discs with digital rights management schemes are not legitimately standards-compliant Compact Discs (CDs) but are rather CD-ROM media. Therefore they all lack the CD logotype found on discs which follow the standard (known as Red Book). Therefore these CDs could not be played on all CD players. Many consumers could also no longer play purchased CDs on their computers. PCs running Microsoft Windows would sometimes even crash when attempting to play the CDs.

In 2002, Bertelsmann (comprising BMG, Arista, and RCA) was the first corporation to use DRM on audio CDs. In 2005, Sony BMG introduced new DRM technology which installed DRM software on users' computers without clearly notifying the user or requiring confirmation. Among other things, the installed software included a root kit, which created a severe security vulnerability others could exploit. When the nature of the DRM involved was made public much later, Sony initially minimized the significance of the vulnerabilities its software had created, but was eventually compelled to recall millions of CDs, and released several attempts to patch the surreptitiously included software to at least remove the root kit.

Several class action lawsuits were filed, which were ultimately settled by agreements to provide affected consumers with a cash payout or album downloads free of DRM.

## **Metadata**

Sometimes, metadata is included in purchased music which records information such as the purchaser's name, account information, or email address. This information is not embedded in the played audio or video data, like a watermark, but is kept separate, but within the file or stream.

As an example, metadata is used in media purchased from Apple's iTunes Store for DRM-free as well as DRM-restricted versions of their music or videos. This information is included as MPEG standard metadata.

## **Copyright**

Copyright is a form of intellectual property protection granted under Indian Law to creators of original works of authorship, such as literary works (including computer programs, tables and compilations, including computer databases that may be expressed in words, codes, schemes or in any other forms, and including a machine readable medium), dramatic, musical and artistic works.

Also, copyright applies to both published and unpublished works. The copyright lasts for the life of individual authors plus 60 years.

Copyright owners have rights to do or to authorize any of the following with respect to a work of any substantial part thereof:

1. In the case of a literary, dramatic or musical works that is not a computer program: to reproduce the work in any material form, including storing of it in any medium by electronic means; to issue copies of the work to the public; to perform the work in public, or to communicate it to the public; to make any cinematographic film or sound recording in respect to the work; to make any translation of the work; and to do, in relation to a translation or adaptation of work, any of the acts specified in relation to work in the sub-clauses.
2. In the case of a computer program: to do any of the acts specified in (1), and to sell or give on hire, or offer for sale or hire a copy of computer program, regardless of whether such a copy has been sold or given on hire on earlier occasions. It may be noted that copyright confers a number of rights, some or all of which can be granted to other either exclusively or non-exclusively.

The exceptions to making copies or adaptations are: in order to utilize the computer program for the purpose for which it was supplied; or to make backup copies purely as a temporary protection against loss, destruction or damage in order only to utilize the computer program for purpose for which it was supplied. These exceptions do not constitute an infringement of copyright, and they apply only when a computer program is sold (i.e. when the title to the program copy passes); they do not apply when a program copy is licensed. A license has only those rights that are specified in license agreement.

A copyright in work is considered to be infringed:

- When any person without a license granted by the owner of the copyright or the Registrar of Copyrights or in contravention of conditions of a license so granted, or of any conditions imposed by a competent authority under the copyright act, does anything, the exclusive right to which is conferred by the copyright act upon the owner of the copyright, or permits for profit any place to be used for communication of work to the public where such communication constitutes an infringement of the copyright in the work.
- When any person makes for sale or hire, or sells or lets for hire, or by way of trade displays or offers for sale or hire, or distributes either for the purpose of trade or to such an extent as to affect prejudicially the owner of the copyright, or by way of trade exhibits in public, any infringing copies of the work.

### **On-line copyright issues in India**

1. Copyright Act, 1957 and on-line copyright issues: The following provisions of the Copyright Act, 1957 can safely be relied upon for meeting the challenges of information technology:
  - a. The inclusive definition of computer is very wide which includes any electronic or similar device having information processing capabilities. Thus, a device storing or containing a copyrighted material cannot be manipulated in such a manner as to violate the rights of a copyright holder.
  - b. The term computer Programme has been defined to mean a set of instructions expressed in words, codes, schemes or in any other form, including a machine readable medium, capable of causing a computer to perform a particular task or achieve a particular result. It must be noted that Section 13 (a) read with Section 2(o) confers a copyright in computer Programme and its infringement will attract the stringent penal and civil sanctions.
  - c. The inclusive definition of literary work includes computer programs, tables and compilations including computer databases. Thus, the legislature has taken adequate care and provided sufficient protection for computer related copyrights.
  - d. The copyright in a work is infringed if it is copied or published without its owner's consent. The Copyright Act provides that a work is published if a person makes available a work to the public by issue of copies or by communicating the work to the public. Thus, the ISPs, BBS providers, etc may be held liable for copyright violation if the facts make out a case for the same.
  - e. The copyright in a work shall be deemed to be infringed when a person, without a license granted by the owner of the copyright or the Registrar of Copyrights under this Act or in contravention of the conditions of a license so granted or of any condition imposed by a competent authority under this Act- (i) Does anything, the exclusive right to do which is by this Act conferred upon the owner of the



- copyright, or (ii) Permits for profit any place to be used for the communication of the work to the public where such communication constitutes an infringement of the copyright in the work, unless he was not aware and had no reasonable ground for believing that such communication to the public would be an infringement of copyright.
- f. It must be noted that copyright can be obtained in a computer Programme under the provisions of the Copyright Act, 1957. Hence, a computer Programme cannot be copied, circulated, published or used without the permission of the copyright owner. If it is illegally or improperly used, the traditional copyright infringement theories can be safely and legally invoked. Further, if the medium of Internet is used to advance that purpose, invoking the provisions of the Copyright Act, 1957 and supplementing them with the stringent provisions of the Information Technology Act, 2000 can prevent the same.
2. Information Technology Act, 2000 and on-line copyright issues: The following provisions of the Information Technology Act, 2000 are relevant to understand the relationship between copyright protection and information technology:
- a. Section 1(2) read with Section 75 of the Act provides for extra-territorial application of the provisions of the Act. Thus, if a person (including a foreign national) violates the copyright of a person by means of computer, computer system or computer network located in India, he would be liable under the provisions of the Act.
  - b. If any person without permission of the owner or any other person who is in charge of a computer, computer system or computer network accesses or secures access to such computer, computer system or computer network or downloads, copies or extracts any data, computer data base or information from such computer, computer system or computer network including information or data held or stored in any removable storage medium, he shall be liable to pay damages by way of compensation not exceeding one crore rupees to the person so affected. Thus, a person violating the copyright of another by downloading or copying the same will have to pay exemplary damages up to the tune of rupees one crore which is deterrent enough to prevent copyright violation.
  - c. While adjudging the quantum of compensation, the adjudicating officer shall have to consider the following factors:
    - i. The amount of gain or unfair advantage, wherever quantifiable, made as the result of the default.
    - ii. The amount of loss caused to any person as a result of the default.
    - iii. The repetitive nature of the default.
  - d. Thus, if the copyright is violated intentionally and for earning profit, the quantum of damages will be more as compared to innocent infringement.

### **The future of copyright in India**

The copyright laws in India are set to be amended with the introduction of the provisions for anti-circumvention and Rights Management Information in the Indian copyright regime although India is under no obligation to introduce these changes as it is not a signatory to WCT or WPPT.

"The copyright does not protect the idea but it does protect the skill and the labour put in by the authors in producing the work. A person cannot be held liable for infringement of copyright if he has taken only the idea involved in the work and given expression to the idea in his own way. Two authors can produce two different works from a common source of information each of them arranging that information in his own way and using his own language. The arrangement of the information and the language used should not be copied from a work in which copyright subsists."

Before I conclude, I must make it clear that despite the variety of cases given in this paper, there is not much piracy of books in India. By and large, to save their business interests, publishers and distributors try to enforce copyright to the best of their abilities. Yet, piracy hurts them hard because the books which get pirated invariably are the few with good margin and high demand. Deprived of the profits from such bestsellers the book industry starved of the much needed capital for growth and investment in literary works of significance but low sales potential, especially by up-coming authors. Harsher measures are therefore needed to curb piracy.

Another area of copyright infringement which needs to be tightened up relates to protection of author's rights vis-a-vis the assignee or the licensee. There is need to develop a model contract, too, which should also provide protection for the author's rights in the fast changing scenario of electronic publishing, Internet, etc.

### **Indian IPR Law**

India is a member of both UCC and the Berne Conventions. The GATT negotiations led to agreement on Trade-Related Intellectual Property Right (TRIPS) that included provisions relating to protection of computer software and database under copyright law. The Indian IPR for computer software are covered under the provisions of the Indian Copyright Act 1957. Several amendments to Indian copyright law were introduced in 1994, which came into effect on 10 May 1995 as one of the toughest in the world. For the first time in India, copyright law clearly explained the rights of the copyright holder, the position on software rental, and the rights of users to make backup copies. It imposed heavy punishments and fines for the infringement of software copyright.

### **Conclusion**

Copyright is a complex issue in the age of digital right management and information economy. Digital technologies will continue to evolve, and pose more challenges to the copyright regime. It seems that the viable solution the "digital dilemma" is for the copyright regime to adapt itself to the technological progress and conceive proper forms and structures for copyright protection. On the other hand, intellectual property

rights have never been a national issue only. Its impact has always been across national boundaries. In this sense, international organizations have an important role to play to implement the enforcement mechanism already in place.

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