

# Digital Libraries and Intellectual Property Rights

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## Digital Rights Management

### Abstract

This paper discusses about the developments in the library world in terms of digital media, its distributed access through network vis-à-vis intellectual property rights implication. The paper sensitizes libraries, information professionals and users towards their obligation to conduct themselves according to licensing terms of digital media. It explores the effect that digital technology has had on copyright protection, the trend towards international harmonisation of copyright laws based on international standards set down by the international conventions, agreements and treaties, and the use of copyright works by libraries. The paper presents status of copyright protection in select countries, including copyright law enactment, term, scope, sanctions, percentage of piracy and revenue loss in software piracy. Copyright issues for e-information along with forms of infringement and fair dealing are discussed. Digital copyright protection technologies such as watermarks, fingerprints, digital signatures etc. are described. In the end the paper emphasizes about evolving general consensus on digital preservation along with protection of right holders with overall aim of protecting scholarship for posterity.

### Keyword

Digital Library, Copyright, Intellectual Property Right, Digital Rights Management, Digital Preservation.

### Introduction

Libraries and their role in society have evolved in pace with technological development and copyright law. Originally, a repository for published works which could be borrowed or physically accessed by the public, libraries are now “information brokers” operating as part of an international network of libraries that have the ability to digitize works and provide users with online access to a worldwide repertoire of works. Digital technology has led to new uses of copyright works both on and off the internet. It allows copyright works to be copied, manipulated and disseminated with minimal effort and cost that cannot be matched using analogue technologies.

Creators of books and journals are concerned that their rights have been considerably diminished by the development of digital technology and are unwilling to release copying or access rights to the global digital environment until they know that appropriate protection is in place. Legal certainty that copyright works are protected internationally can only come from international harmonization of copyright laws that are technology-neutral.

Governments in developed countries throughout the world are reviewing their copyright laws in line with digital technology with a view to providing technology-neutral copyright legislation which is consistent with international standards originally established by the Berne Convention (Sheat 2004: 487).

## Digital Libraries

The term digital library has a variety of meanings ranging from a digital collection of material that one might find in a traditional library to the collection of all digital information along with the services that make that information useful to all possible users. Digital libraries have evolved as a result of fast technological development in order to cater to the needs of individuals with varying interests in various fields. Although the term digital library has gained popularity in recent years, such libraries they have evolved along the technological ladder for the past 30 years.

The definition of a digital library can be given as a set of characteristics as follows:

- A digital library is:
- A collection of services
- A collection of information objects
- A supporting users with information objects
- organization and presentation of those objects
- available directly or indirectly
- Electronic/digital availability

A digital library is much more than just the collection of material in its depositories. It provides a variety of services to all of its users.

The basis of the digital library is the information objects that provide the content in the form of digital resource. The goal of the digital library is to satisfy user needs for management, access, storage and manipulation of the variety of information stored in the collection of material that represents the holding of the library. The information objects may be digital objects Or they may be in other media but represented in the library via digital means (e.g. metadata). They may be available directly over the network or indirectly. Although the object may not even be electronic, and although the objects themselves may not be available directly over the network, they must be represented electronically in some manner.

Some of the important points to be considered in developing a digital library are:

- Digital collection
- Conversion of existing print into digital format: options for conversion
- Creating portals or gateway to the electronic collection available on the web
- Integrated access interface.

## ***Digital Collection***

Copyright is one of the most important barriers to digital library development.

The current paper-based concept of copyright breaks down in the digital environment because the control of copies is lost. Digital objects are less fixed, easily copied and remotely accessible by multiple users simultaneously. The problems of libraries are that they are for the most part simply caretakers of information; they do not own the copyright of the material they hold. So libraries will never be able to freely digitize and provide access to the copyrighted material in their collection. They have to develop a mechanism for managing copyright.

The regime of Intellectual Property Rights should prevail so that creators shall not feel offended for violation of their exclusive rights bestowed to them and at the same time policy of fair use should continue. In this light the various components of IPR and its implication is discussed.

### Intellectual Property Rights (IPR)

Intellectual property is the tangible results of human creativity and inventiveness. IPR is a generic term which covers patents, trademarks, trade secrets, industrial design, database rights and copyright. Money and efforts are involved in any research, innovation or invention leading to a product, process, design, method, literary and artistic work etc. The result of financial gains to its authors or creators is generally registered under one or the other of various heads of IPR. The creation, transfer and use of intellectual property are also protected by laws as any other material property. Such laws that protect the right of the creator granted by State which accords specific economic right to own, use and disposition of their creation are called Intellectual Property Rights. This is a reward to the creator for sharing their contribution and further to stimulate inventive activities.

## **Components of IPR**

The components of IPR are Patents, Trademarks, Trade Secrets, Industrial Design, Database Rights and Copyright. The two major components viz., database rights and copyright is described below:

**Database Rights-** Database right is granted to a person, who funds, selects and arranges the content into a database. There needs to be substantial investment in obtaining, verifying and presentation of the contents of the database. This right lasts for 15 years and further its changes get protected by another 15 years making it continually protected.

**Copyright-** It provides legal rights exclusively given for a definite period to the creators of an intellectual work, e.g. literary works ( anything in writing), artistic works ( drawings, maps, plans etc.), musical works, films, sound, recordings, computer programs ( source and object code) for sale or any other use. It is, in principle, not concerned with things that are not perceivable, such as abstract ideas, concepts and the like. Copyright protection begins when works are actually created in the tangible form. Copyright was designed for three basic reasons that are to reward creators for their original works; to encourage availability of the works to the public; and to facilitate access and use of copyrighted works by the public in certain circumstances. The Three technological advances, namely the digitization of information, networking and worldwide web has changed the economics of information upside down. Digitization of information has changed the economics of reproduction, networking has changed the economics of distribution and the worldwide web has changed the economics of publication.

## ***Indian Copyright Act***

India has a very strong and comprehensive copyright law based on Indian Copyright Act 1957, which was amended in 1984, 1992, 1994 and 1999. The copyright has its origin from Indian Copyright act 1847 enacted during East India Company. Further the Copyright Act of 1914 was modified version of British copyright Act of 1911. The amendment in 1994 were a response to technological changes in the means of communication like broadcasting and telecasting and the emergence of new technology like computer software. The 1999 amendments have made the copyright act fully compatible with TRIPS agreement. Moreover, India is signatory to both the international Copyright Conventions i.e. the Berne Convention of 1886 and Universal Copyright convention of 1952. The Government of India under Ministry of Human Resource Development has constituted Copyright Enforcement Advisory Council for its implementation. As per the Indian law, copyright falls into 'public domain' 60 years after the death of the author. This means the author during his lifetime and his successor for 60 years after his death can enjoy the benefit of income from the writings of the deceased author.

### *International Treaties and Status of Copyright Protection*

The World Intellectual Property Organization (WIPO), a specialized agency of the United Nations, is responsible for administering 23 international treaties that cover various aspects of intellectual property protection. Currently there are 179 member states belonging to WIPO, over 90 per cent of all countries.

The main international treaties relating to copyright protection are as follows:

- The Berne Convention (1886) was designed for the protection of literary and artistic works and about 140 countries are signatories. It assists the nationals of its member states with international protection for such works as novels, poems and plays, songs and musicals, paintings, sculpture and architectural works.
- The Universal Copyright Convention and protocols 1, 2 and 3 (1952 and last revised 1971) are a lower level copyright convention with 95 member states. Each contracting state undertakes to provide for the adequate, effective protection of the rights of authors and other copyright proprietors in literary, scientific and artistic works including writings, musical, dramatic and cinematographic works, paintings, engravings and sculpture.
- The Rome Convention (1961) for the Protection of Performers, Producers of Phonograms and Broadcasting Organisations has 69 member states.
- The Geneva Convention (1971) for the Protection of Producers of Phonograms against Unauthorised Duplication of Their Phonograms has 68 member states.
- The General Agreement on Tariffs and Trade/World Trade Organisation's (1995) TRIPS Agreement applies to 135 WTO members and came into effect in 1995 for developed countries. Intellectual property obligations came into effect for developing countries on 1 January 2000 and from 1 January 2005 for least-developed countries. The TRIPS agreement requires all members to comply with the substantive provisions of the Berne Convention. It mirrors the Rome Convention protections against unauthorized copying of sound recordings and provides a specific right to authorise or prohibit commercial rental of these works. It also provides a detailed set of requirements relating to the enforcement of rights (Subba Rao 2003).

WIPO's three treaties are as follows:

- **The Copyright Treaty** complements the Berne Convention. It covers computer programs in any modes or forms of expression that are protected as literary works. The most important article concerns the rights of communication to the public. This covers the online digital delivery of works and functions as a basic

rule for digital department stores, digital bookstores, digital record and video shops. Authors' rights include providing access to protected works. Contracting parties or member countries of the Treaty can fulfill the requirements by granting authors a right of communication, transmission or distribution by transmission.

- **The Performers and Producers of Phonograms Treaty** was intended to cover all relevant aspects of protection of performers and producers of phonograms. The definitions have been modernised to keep pace with technology. The definition of broadcasting now explicitly covers transmission by satellite and encrypted signals. The performers and the makers of phonograms have been granted the right of reproduction, both direct and indirect, in any manner or form and an exclusive right to make their phonogram-based performances publicly available via interactive on-demand delivery methods.

**The Databases Treaty** is a new instrument for sui generis protection of databases. It is intended to extend to any database if collection, verification or other steps in its production involves substantial investment in the form of human or financial resources. The idea is to consider databases as vital elements of a global infrastructure, to encourage development of databases and commercialization. The reservation by scientific communities, government departments and other institutions handling large volumes of data was that protection would break the principle of full and open exchanging of scientific and other databases of data.

**The Digital millennium Copyright Act (DMCA)** was passed by the U.S. Congress in 1998. The law was passed under the Copyright Statute but is actually technology legislation. DMCA's ant circumvention provisions have been subject to most of the criticism against the statute's sweeping new prohibitions. DMCA created a new ban on the act of circumventing technological protection measures or "digital locks" that control access to a copyrighted work. The statute also outlawed making or providing tools, including information and software, that circumvent access or use controls for digital works. Despite the multitude of lawful reasons a person might need to bypass use controls, the statute only creates a handful of narrowly crafted exemptions to the general ban on circumvention. DMCA ban is broader than WIPO called for. Use of technological protection system dramatically shifts copyright bargain with publishers taking all the privileges from the government-created monopoly without any of the responsibilities such as ensuring fair use and contributing to the public domain, since works stay locked up under the total control of the copyright holder forever (Gross 2002). A table below shows the status of copyright protection in select countries covering copyright law enactment, term, scope, sanctions, percentage of piracy and revenue loss in software piracy and revenue loss in 2008.

Country	Law	Term	Scope	Sanctions	Software	
					% of Piracy	Loss in US \$m
U.S.A	Computer Software Copyright Act(1980)	Life of Author + 50 years / 75 years for hire	Computer programs ( source and object code) and original database are explicitly protected as literary works; exclusive rights of reproduction, distribution and adaptation; protection for look and feel has been permitted	Civil and criminal remedies	20	9143
U.K	Copyright Designs and Patent Act(1988), as amended(1992)	Life of Author + 50 years	Implemented the EU Software Directive into National law	Civil and criminal remedies	27	2181
India	Copyright Act(1957), as amended(1984,1991,1994)	Life of Author + 60 years	Computer programs are explicitly protected as literary works; exclusive rights of reproduction, distribution and adaptation	Civil and criminal remedies	68	2768

Table 1 Status of copyright protection in select countries with percentage of software piracy and revenue loss in 2008

Source: Sixth Annual BSA-IDC Global Software Piracy Study, May 2009

## ***Copyright and Digital Information***

The Indian law extends protection to computer programs i.e. computer software and computer generated artistic or literary works, and treats storing of work in any medium of digital means as infringement of the copyright. The law has no provision for electronic and online books, journal and electronic information. Copyright protection is provided to computer database, treating them as literary works. Multimedia works are categorized under audio-visual work for which the law provides the copyright protection.

## ***Fair Dealing to Digital Information***

- Acts permitted to a certain degree without infringing copyright are called fair dealing. These are as follows (Tripathi 2008: 226-27):
- Private and non-commercial research study purposes.
- Criticism and review of publicly available works.
- News reporting of current events.
- Recording of broadcasting for the purposes of listening to or viewing at a more convenient time.
- Producing a backup copy of a computer program for personal use.
- Reproduction in connection with judicial proceedings/ legislative purposes.
- Reproduction by a teacher or pupil in the course of instruction.
- Reproduction of an article on current economic, political, social or religious topics in newspaper and magazines.

## ***Common Forms of Infringement***

- Reproduction of work in material form.
- Publication of the work
- Communication of the work to the Public.
- Performance of the works in Public.
- Making adaptations and translations of the work and doing any of the above acts in relation to a substantive part of the work.

Joint Information Systems Committee and Publishers Association, UK (1998) set up guidelines for the fair dealing and library privileges permissions in digital environment. The fair and not fair uses are discussed below:

## **Fair Use**

- Any incidental copying to disk involved in the viewing of part or all of an electronic publication.
- An automatically copying on the hard disk cache by browser while accessing e-journal available on a website or from university/library network using the PC.

- Single copy printing on paper of a part of an electronic publication for research or private study by an individual or by a librarian on the request of others.
- One can print hard copy of articles from paid subscription of an e-journal for research or private study assuming it is allowed by the license agreement.
- An individual can copy onto disk part of an electronic publication for permanent local electronic storage, accessible to only one user at a time.

## **Not Fair**

- To scan the articles into electronic form. It needs permission, if granted, would cover whether the library could retain a copy permanently.
- Transmit by computer network of the whole of an electronic publication for the purpose permanent local electronic storage, reading on screen and printing on individual request.
- To post whole or part of e-publication on network or bulletin board or user forum site open to public.
- To post interesting group of journal articles on department's website for his colleagues to read.
- To download entire and systematically contents of an e-journal onto a PC.

## **Digital Rights Management**

Printed materials have certain advantages over e-information with respect to copyright due to its permanence and authentication. It is easy to ascertain its ownership and facilitates identification of piracy or plagiarism. In comparison, e-information is not so permanent and it is easy to revise and modify without leaving any resemblance to the original. Digital materials differ from hard copy materials in that they are easier to copy; the quality of the copy is much higher; the work can be easily copied to many other people; and the unit cost of copying is much lower.

The Publishers Association argues that the phrase 'digital rights management' is often used to cover two very distinct concepts:

- Management of digital rights where market-enabling technology is used to identify and describe a piece of content, which includes information about the rights and permission attached to it.
- Digital management of rights which the use of technical protection measures, including encryption, access and copy control mechanisms that are designed to ensure that certain usage rules are complied with. Rights holders 'wrap' a set of rules around content in order to define how control can be manipulated and shared by the purchaser of the copyrighted or premium content.

## **Technical Aspects of Digital Rights Management Systems**

- Key elements of digital rights management systems are (Pedley 2005: 12-13):
- identifiers, such as digital object identifiers -numbers or codes permitting the unique identification of piece of content
- metadata – information about the piece of content which may include, for example, the identity of the rights holder, the price for using the work, and any other terms of use.



- Mechanism for controlling access to digital works includes:
- Security and integrity features of computer operating systems such as traditional file access privileges.
- Rights management languages (such as rights expression Language) which express in machine-readable form the rights and responsibilities of owners, distributors, and user to enable the computer to determine whether requested actions fall within a permitted range.
- Encryption allowing digital works to be scrambled so that they can be unscrambled only by legitimate users.
- Persistent encryption permitting the buyer to use information while the system maintains it in encrypted form.
- Digital watermarks which add a small amount of information to the work which identifies the work and cannot easily be removed. They are used by right holders who wish to keep track of any copying and distribution of their digital works. Watermarks embed information, such as information about ownership, into a digital work in much the same way that a piece of paper can carry a watermark.
- Fingerprinting algorithms which take little piece of the information which identifies the work, although the work itself is not affected.

## Conclusion

The complexity and jurisdictional issues relating to ICT are charging the IPR regime drastically. IPR in the digital era have added a new dimension to the traditional regime of IPR. TRIPS Agreement has tried to harmonize the IPR all over the world. Yet the digital issues are vexing the IPR enforcement everywhere. Certain technological measures and techniques have also been adopted to protect IPR in the digital environment but their efficiency and effectiveness is doubted and to be judged. Hence, existing IPR laws should be reinforced and strengthened in its application to intellectual works in the digital networked environment and copyright owners should be encouraged to make their works available to the public.

Countries should establish laws and policies to encourage and enable the digital preservation of at risk copyrighted materials. These laws and policies should, at a minimum (Besek, June M. /Library of Congress and et al. 2008):

- Apply to all non-profit libraries, archives, museums and other institutions as may be authorized by national law (hereafter, “preservation institutions”) that are open to the public, provided they do not undertake these activities for any purpose of commercial advantage.
- Apply equally to all categories of copyrighted materials, including literary, artistic, musical and dramatic works, as well as to motion pictures and sound recordings.
- Apply equally to copyrighted materials in all media and formats, whether hard copy or electronic, born digital or digitized for preservation.
- Allow preservation institutions to proactively preserve at risk copyrighted materials before they deteriorate, are damaged or are lost, and before any software or hardware required to access and use the material become obsolete, subject to measures appropriate to protect the legitimate interests of right holders.
- Allow preservation institutions to undertake preservation activities as necessary and in accordance with international best practices for digital preservation, including

- (a) Reproduction and retention of such copies as may be necessary for effective digital preservation;
  - (b) The serial transfer of copyrighted works into different formats for preservation in response to technological developments and changing standards;
  - (c) The communication of works within the preservation institution for administrative activities related to preservation or between the preservation institution and legally authorized third party preservation repositories as necessary for the purpose of maintaining redundant preservation copies to protect against catastrophic loss.
- All of the foregoing should be subject to measures appropriate to protect the legitimate interests of right holders.
  - Enable relevant preservation institutions comprehensively to preserve copyrighted materials that have been made available to the public in digital form, by means of
    - (a) A legal deposit system;
    - (b) The legal ability to harvest publicly available online content for preservation purposes;
    - (c) Incentives for contractual arrangements for preservation activities; and/or
    - (d) Some combination of the foregoing.

Preservation institutions should work with right holders to develop workable approaches to the digital preservation of copyrighted materials protected by technological measures such as encryption or copy protection. Preservation institutions should develop best practices for digital preservation.

Research should be undertaken on the national level with regard to whether and under what circumstances access to digital preservation copies can be provided without harm to right holders. Study should be conducted on the national level to reexamine the interaction between copyright and private agreements as it relates to digital preservation.

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