



# Copyright and digital preservation: impact on libraries

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## Abstract

Development in information and communication technologies has brought about new methods of producing and disseminating information in a new media i.e. digital media. Information is now produced, processed and stored in digital form and distributed over electronic networks, such as internet and on CD-ROM. The preservation of this new digital material involves various issues like technical, legal, economic and organisational issue. The present paper discusses need for copyright, copyright issues in libraries for digital preservation, how copyright fails in the library and copy right law in India. Also, The present paper discusses different types of materials preserved in digital form, formats for preservation, issues concerning preservation of digital resource, challenges for access to digital information, technological obsolescence, possible solution, digital preservation initiatives in India and benefits of digital preservation. It is concluded that digital preservation for access and management of digital resources require a long-term strategy and appropriate technology adoption.

Keywords: Digital Preservation, Copyright law, copyright.

## 1. Introduction

Development in information and communication technologies has brought about new methods of producing and disseminating information in a new media i.e. digital media. Information is now produced, processed and stored in digital form and distributed over electronic networks, such as internet and on CD-ROM. Copyright arose from the idea that anything created, should be protected from use by someone else, reflecting the fact that the creator has exclusive right over the thing created. Preservation is the oldest and most fundamental function of libraries. Traditional libraries are changing towards digital environment with the help of information technology. Preservation, access and management of digital resource have been a great challenge for library and information professionals. Digital preservation is a complex process, which involves a number of technological issues, organisational issues and legal issues. Digital preservation is a process by which digital data is preserved in digital form in order to ensure the usability, durability and intellectual integrity of the information contained therein. The preservation of digital materials involved various technical, legal, economic and organizations issues. Copyright law and licensing arrangements may prevent problems for libraries that wish to preserve digital resource in long term or even short term. Copyright have a substantial impact on digital preservation. The copyright issues for digital contents are much more complex than for printed

material. Long term preservation and access may require migration of digital material into new forms or emulation of the original operation environments which may not be possible without appropriate legal permissions from the original rights owner of the content and underlying software moreover, simply refreshing digital materials onto another medium, encapsulating content and software for emulation or migrating content to new hardware and software, may lead to infringement of Intellectual Property Rights (IPR) unless statutory exemptions exist or specific permission have been obtained from the rights holders. So there is a need to clarify issues identified in the preservation and legal matters and to provide a clear picture of the activities and perceptions of stakeholders in digital preservation including authors, publishers and libraries.

### **Digital Information:**

In the digital world all information is represented in binary strings of 0s and 1s (call as bits) that make up the genetic code of data allow information to be fruitful and multiply and allow people to create, manipulate and share data. Digital material can be stored on non-print medium i.e. CD Rom, floppy disc, tape, pen drive etc.(1)

### **Digital preservation:**

Digital preservation concerns two type of documents namely born digital document and digitally created document.(4)

Born digital document: These refer to those materials that were initially created using some form of digital technology. They are often termed as “electronic records”

Digitally created document: These refer to those materials, which have been transformed from analog to digital form through some reproductive means such a re-keying the information or scanning the document or object etc.

## **2. Different types of materials preserved in digital form in the library**

- Printed material in library should be preserved in digital form. But, printed materials have to choose which books, article, photographs, and other materials are to be converted from paper or film to digital form.
- Tapes, hard drives, floppy discs, CD, Pen drive have a very short life span when considered in terms of obsolescence; the data on them should be preserves.
- E-journals have been at the forefront of preservation discussion because of their critical role in scientific communication.
- Scientific and statistical data is the great important for the research purpose, should be preserved in digital form.
- Government produced scientific and technical information.
- Significant scientific information is first published at conference, meetings, lectures, colloquia etc.
- Technical report and grey literature are the key mechanism for dissemination of research and development results especially in industry and government.

## **3. Formats for preservation**

File formats encode data into a form which can only be processed and referred by specific combination of hardware and software. The selection of file formats for creating digital documents should be determined not only by the immediate requirement, but also by longer term preservation considerations. The following criteria should be consider by data creator when selecting file formats:

- ✓ Permanency

- ✓ Processibility
- ✓ Standards
- ✓ Metadata support
- ✓ Interoperability
- ✓ authenticity

Most common formats for storing text were XML,PDF and TIFF. Most e-journals, reference books, or reports use TIFF,PDF or HTML. There are variety of image format for different size of image. Common format were JPEG,GIF. Numeric data is similar to text but it generally has more structure.(6) The preferred for data is an ASCII delimited or an XML tagged file. The standards for preserving video and audio format remain an issue as the systems grow more complex and proprietary interests dominate.

#### 4. Different issued of digital preservation

Preservation and management of digital resources faced some issued which refer to(3)

- a. Technological issue
- b. Organisational issue
- c. Legal Issue

##### a. Technological issue

- The real issue and problem in digital preservation is obsolescence of software needed to open the digital document.
- Several upgrades to windows software and it would be very difficult to convert from earlier version to current version.
- More dangerous problem than the degradation of actual information container is the obsolescence of hardware that can read digital information.
- Authenticity of digital document mainly deals with the geniusness of the original digital document in terms of its content i.e. data and structure of the document also contextual, provenance and referencing information.
- Rapidly increasing number of digital objects and proliferation of document standards and formats.
- Increasing complexity of digital objects i.e. increasing text, image, audio, video in variable formats.
- Unstable storage media whose life span is limited.
- Lack of technical expertise in collection managers and preservation experts.

##### b. Organisational issue

While technological issues are undeniably challenging, there are also numerous challenges which relate to the ability of organisations to integrate the management of digital materials into their organisational structure. In addition, there is an increasing need to go beyond the confines of individual organisations, or even countries, to maximise the benefits of the technology, address issues such as copyright, and also to overcome the challenges cost-effectively. digital preservation is essentially about preserving access over time and therefore the costs for all parts of the digital life cycle are relevant. In that context even the costs of creating digital materials are integral in so far as they need to include cost elements which will ultimately facilitate their long-term preservation

### c. Legal issue

Copyright and other intellectual property rights (IPR) such as moral rights have a substantial impact on digital preservation. Ownership and copyright are not simple in the digital preservation world, where migration copies, archival copies, derivative versions, and other states of an object exist, changing over time. Meeting legal requirements for preserving digital objects requires careful, comprehensive, on-going approaches that avoid risk to the organization or objects, and that enable effective mitigation as concerns arise. Thorough procedures, protocols, and documentation strategies provide the most effective organizational response for legal issues

## 5. Challenges for Library & Information Science professionals

Preserving long term access to digital information resources is one of the key challenges facing library and information science professionals today. Formulation of preservation policy and creation of preservation metadata for electronic files and digital collections are among the most important steps. The fundamental challenge, preserving the e-documents or digital object stems from the nature of the objects themselves. Unlike non-digital format such as books, magazines, manuscripts, microfilm or digital object are accessible only by using combination of computer hardware and software. This hardware and software can become obsolete with new technology.

Following barriers are also facing by library & information science professional for preserving digital document:

- Lack of IT application in libraries
- Lack of adequate financial support
- Lack of trained/skilled manpower
- Lack of infrastructural facilities
- Internet connectivity problem
- Lack of knowledge about various digital resources
- Lack of positive attitude towards the concept of digitisation
- Copy right/IPR that may interface with the ability to preserve digital objects through systematic copying.

### Technological obsolescence

Technological obsolescence is another major hurdle in the preservation and management of digital resources particularly for long-term access. Data storage technologies from Floppy drive to CD drive to Pen drive are gradually becoming obsolete and many are depending on web resources. Several options are being explored to deal with this cycle of obsolescence that falls in to three main categories.(5)

a. **Refreshing:** Refreshing is copying digital files from one storage medium to another storage medium of the same type to prevent media obsolescence.

b. **Migration:** This process is periodic transfer of digital materials from one hardware/software configuration to another, or from one generation of computer to another and is the most current strategy for preserving electronic resources.

c. **Emulation:** The third digital preservation option is emulation. In this process the software performs the functions of obsolete hardware and software and the strategy proposes that the digital documents be store in their original forms, along with original software in which they were created

## 6. Digital preservation initiative in India

In India development in digital preservation remains largely experimental. Only a few libraries have established digital preservation programs. Preservation of digital documents may require new investment and commitments by the organizations. In last 1 decade Indian public, academic and research libraries have been witnessing number of digital library initiatives, few of them are listed below:

- The digital library of ERNET India
- Million book universal digital library project
- Centre for Development of Advance Computing(C-DAC) project
- Khuda Bakas oriental public library, Patna
- Traditional Knowledge Digital Library (TKLD) is the collaboration effort of the NISCAIR with Dept. of AYUSH.

Institutional Repositories for research output and Open Access to full text Electronic Theses Database (ETD), a form of digital library, are available at various institutions, research centres and in Universities. Indian Institute of Science, Bangalore; Digital Library of Library and Information Science (DLL) of Documentation and Research and Training Centre (DRTC) Bangalore, Digital Library of Information and Library Network Centre (INFLIBNET), Digital Library at Indian Institute of Management, Kozhikode; Digital Library at National Institute of Technology of Calicut University (Nalanda Digital Library Project) are name of the few.

## 7. Benefit of Digital preservation

- Increased accessibility: Works can be accessed by multiple users at one time independent of their location
- Increased functionalities: Digital material can be converted to searchable text files to enable searching and analysis of content within and across works, independent of location.
- Output of capability to other media: generate digital copies, photo copies, microfilm without loss of quality.
- Systematic and purposeful collaboration: Digital material can be access by the multiple institutions and integrate into their own virtual collection, subject to relevant copyright restrictions.

## 8. Need for copyright

Copyrights stands for the legal rights exclusively given a definite period of time to the originator of intellectual work such as a publication or an artistic or literary work for sale or any other use. Copyright provides the creators of literary or artistic works, the rights of ownership for their works and legal protection against unlawful reproduction of such works. Although copyright is generally understood as a right or license to free copying of an existing work, in fact it is a right to prevent others from copying. By providing protection, copyright law assures and encourage the authors in pursuit of artistic, scientific or literary work. The law also reorganizes their rights to the benefits accrued by the usage of their creative work by others.

## 9. Rights under copyright

Copyright provides a copyright owner with a bundle of rights that can be exploited or licensed separately or together. Different rights are:

- The right to make copies: copy of a work can be any form in which the work is fixed, or embodied, and from which it can be perceived, reproduced or communicated either directly or with the aid of a machine.
- The right to create adaptations: A derivative work is a work that is based on a copyright work but that contains new materials that is original in the copyright sense. A new arrangement of a musical composition, or a new version of a song with updated lyrics, can be a derivative work if it contains sufficient original authorship.
- The right distribute copies of the work to the public : Making copies of a work available for public downloading over an electronic network qualifies as a public distribution. The distribution right is limited by the first sale doctrine which provides that the owner of a particular copy of a copyrighted work may sale or transfer that copy.
- The right to perform the work publicly: To perform a work means to recite, render, play, dance or act it, with or without the aid of a machine.
- The right to display the work publicly: To perform or display a work publicly means to perform or display it anywhere that is open to the public or anywhere that a substantial number of persons outside of a normal circle of a family and its social acquaintances is gathered. Making a work available to be received or viewed by the public over an electronic network is a public performance or display of the work.
- Performance right in sound recording: copyright owners of sound recording do not enjoy the general right to public performance that attaches to most other works.

## 10. Copyright in India

The Copyright Act, 1957 came into effect from January 1958. This Act has been amended five times since then, i.e., in 1983, 1984, 1992, 1994 and 1999, with the amendment of 1994 being the most substantial. Prior to the Act of 1957, the Law of Copyrights in the country was governed by the Copyright Act of 1914. This Act was essentially the extension of the British Copyright Act, 1911 to India. Even the Copyright Act, 1957 borrowed extensively from the new Copyright Act of the United Kingdom of 1956. The Copyright Act, 1957 continues with the common law traditions. Developments elsewhere have brought about certain degree of convergence in copyright regimes in the developed world. The Indian Copyright Act today is compliant with most international conventions and treaties in the field of copyrights. India is a member of the Berne Convention of 1886 (as modified at Paris in 1971), the Universal Copyright Convention of 1951 and the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement of 1995. Though India is not a member of the Rome Convention of 1961, the Copyright Act, 1957 is fully compliant with the Rome Convention provisions. Two new treaties, collectively termed as Internet Treaties, were negotiated in 1996 under the auspices of the World Intellectual Property Organization (WIPO). These treaties are called the 'WIPO Copyrights Treaty (WCT)' and the 'WIPO Performances and Phonograms Treaty (WPPT)'. These treaties were negotiated essentially to provide for protection of the rights of copyright holders, performers and producers of phonograms in the Internet and digital era. India is not a member of these treaties; amendments are being mooted to make Act in compliant with the above treaties in order to provide protection to copyright in the digital era.

## 11. Copyright, Digital Preservation and Library

The absolute biggest barrier that copyright presents to preserving digital materials is the copyright owner's exclusive right to reproduce and adapt a work. Another impediment to digital preservation efforts are the dissemination restrictions that copyright law upholds. Digital preservation is closely to access yet this main goal of any preservation efforts is restricted by current copyright law. In the case of printed publications library procures and issues them to its users as many times as required or in some cases the publication is lent to other libraries on inter library loan. But in the

case of digital resources, the same becomes an infringement. For example a CD-ROM publication cannot be lent out on inter library loan. Libraries can use printed documents perpetually as long as they are relevant and useful, it is not so with digital resources. This leads to a perpetual dependency of the library on publishers. If due to budgetary problems, the product is not subscribed the information cannot be retrieved and is lost forever which is unfair. Now many of the libraries are providing reprographic service to their users, especially academic, research and special libraries. Some time it is a violation of the copyright act for this a permission of the concerned authority is essential. Sometime of photocopying is done not for the current readers demand but for library itself for fulfilling the future requirement of the library readers. Different copyright issues:

- Often libraries have to make their own copies of the documents for their wider use, when their reprints are not available the permission of authors is desired.
- It is clear that taking copyright permission on materials to be digitized is necessary for any institution before start proceeding for digitization project. If institution is not able to seek permission and want to go ahead then try to seek permission from the copyrights holders or to get exception such as ensuring creator of the work that the fair use of the work be made, preserving or copying of the materials to be digitize.
- Institutions planning to digitize letters and photographs should ensure the clearance of right for digitization and distribution of copies.
- Archiving right is designed to allow libraries to make copies of printed books, manuscript and periodicals.
- There are some provisions for protecting the rights of multimedia product but no clear cut policy had been designed yet.
- Another important issues deal with access. A copyright owner has an exclusive right to communicate a protected work to the public and that most electronic publication need to be communicated to the public in order to be seen and read, the deposit copy of such e-publication might require a specific exception allowing access to the clientele of the national legal deposit institutions.

## 12. Possible Implication of Digital Preservation

- Digital Preservation of digital heritage is a continuous process that requires commitment and involvement, not only from heritage institutions, but also from governments, policy makers, producers of information, and the software industry.
- Awareness of preservation issues should be raised with producers of digital information.
- A clear division of tasks and responsibilities, based on existing roles and expertise, needs to be established
- The Information and Communication Technology ( ICT ) industry should be made aware of the need to take preservation requirements into account.
- The leadership role in digital preservation of a number of institutions worldwide should be acknowledged. Their pioneering work in exploring legal, organizational, technical economic aspects can provide the basis for defining best practices which should be strongly promoted in the whole community
- Extensive training programmes are needed to disseminate the expertise and experience gathered so far widely among management and staff of institutions. Preservation of digital heritage requires new organizational structures, new approaches and new ways of thinking. Programmes will have to focus, not only on technical aspects, but also on training staff to deal with a changing environment and new directions.
- Existing legislation should be adopted to support national institutions in the preservation of digital materials.

- Copyright legislation should not act as an impediment for preservation of digital heritage. Owners of rights, of content as well as software, should be convinced of the need to allow institutions to take actions necessary for preservation of materials.
- Further research to develop promising models and technology should be widely supported in order to come to fully operational systems for preservation of digital heritage as quickly as possible.

### 13. Conclusion

Preservation of printed documents was never a cumbersome task and it was properly handled by the librarians for reasonable period. Preservation of printed documents is also posing some serious concerns beyond the life of printed documents. Today, preservation of digital documents became an imperative because of obsolescence of hardware, software and standard file formats. Numbers of digitization projects are increasing and are more visible in the society. Library professionals need to study thoroughly various issues and concerns about digital preservation for long term preservation because more number of print collections is shifting towards digital collections. Library professionals need to concentrate on selection of reliable hardware, software, storage media, standard file formats, physical care and handling safer environment and legality of copying/ reproduction of digital documents for long term preservation and access. Digital preservation is an important issue when it comes to preserving historic and current documents; manuscripts etc. libraries cannot keep away from technological progress. Technology has to be harnessed for better servicing by the libraries. But while doing so, the technical problems predominate and the legal issues involved are not given adequate attention. Librarians play an important role in protecting the rights of copyright holders. The librarians should keep themselves aware with intellectual property right and information technology act and their implementation. It is an obligation of the librarian to keep the user aware about copyright. Library science curriculum should include the Intellectual property rights related issues.

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