

# Preservation of Digital Resources

H. Darhmingliana\*

Librarian, Govt. Mamit College

**Abstract – In this modern digital age, libraries are keenly taking interest in digitizing the information resources for the effective and efficient use of these resources. This paper discussed about the concept of digital preservation, its objective, techniques which can be applied for pursuing the digital information resource, storage media used, the need for preservation, barriers, challenges and future prospects of digital preservation in the Indian environment.**

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## INTRODUCTION

Rapid growth and development in the field of information technology has made libraries to think of digital resource which enable speedy, easily and fast searching of vast information. The huge amount of information is published in electronic form. The access and searching is very easy in the case of digital preservation. However, preservation of the digital information is very difficult compared to the preservation of the traditional print media. Digital resources need pro-active preservation. At present, digitization of both print as well as non-printed materials is increasing at high rate in India.

Association for Library Collection and Technical Services, Preservation and Reformatting Section, Working group defines digital preservation as '*Digital preservation combines policies, strategies and actions that ensure access to digital content over time*'.

According to American Library Association, '*digital preservation is nothing but process or activities and management of digital information for long term accessibility and the main purpose of preservation of digital resource is to protect information of enduring value for access by present and future generations*'.

Generally, digital preservation is defined as long-term, error-free storage of digital information, with means of retrieval and interpretation, for the entire time span the information is required for. Nowadays, most of the libraries are acquiring heavy information in digital form. Large amount of digital content in the libraries and various institutions in India need to be managed and preserved long time. National Digital Preservation Programme (NDPP) of India which was launched by the Ministry of Communication and Information Technology can be regarded as a milestone in the direction of digital preservation in India.

## AIMS AND OBJECTIVES OF DIGITAL PRESERVATION

'Digital preservation' essentially aims at taking steps to make sure the longevity of electronic documents. It applies to documents that are either 'born digital' or other physical carriers to the product of analog to digital conversion. Digital preservation concerns about two types of documents i.e. 'Born digital documents' and 'digitally created' documents.

A born digital document refers to those materials that are created or being produced in digital form. They are also termed as 'electronic records'. Digital created documents refers to those materials which are converted into digital form. It can be done with rekeying the information or scanning the documents, object, etc.

## OBJECTIVES

Digital preservation is done for the possibility of long term access of information and to keep it for the future generations. Some important points are

1. To provide worldwide accessibility.
2. To protect the libraries investment through a fully implemented digital preservation programme.
3. To reduce the effects of deteriorating factors.
4. To make information services longer.
5. To maintain historical value of information.
6. Digital preservation save time and space.

7. For the purpose of backup.

**Preservation of Digital resources**

As mentioned that ‘digital preservation’ means taking steps to ensure long term access to the digital documents and the method of preserving is more complex than print publications as many aspects of the documents such as presentation ,content, authenticity, etc. needs to be taken care. With an increasing technology and other technologies like the Internet and web technologies are changing repeatedly due to the up gradation of software and hardware. This can also resulted in the obsolescence of file formats, storage media, device, etc. Therefore, presentation of digital resources must be done at different levels depending on its usability, functionalities and by removing the outdated information and invalid websites.

**Strategies for preservation of digital resource**

Outdated technology is one major obstacle in the preservation of digital resources particularly for long-term access. Few techniques which can be used for the preservation of digital information are discussed below

1. Refreshing

This is one of the techniques used for the preservation of digital resources. It is a method in which digital resources or information is transferred from one storage medium to another storage medium. Examples of refreshing of resources may be copying files from old diskettes to new diskettes and copying from older CD-RW to a new CD-RW. Even though refreshing is also a necessary component for digital preservation, it can also face outdated issues related to the storage media.

2. Migration

Migration is the transferring of the data from one hardware to another, software to another or from one environment to new one. Eg. transferring of digital resources from one file format to another format, Word to pdf or from one generation of computer to another. It is a broader and richer concept than refreshing as media refreshing is a part of migration but migration involves the transfer of the entire digital environment, not just the physical storage medium. However, resources that are migrated also faced the risk of losing some functionality. As transfer of digital resources from one software to one software, converter may be unable to interpret the entire original format.

3. Emulation

The third technique for the preservation of digital resource is Emulation. It is process of creation of new software that can copy the operations of older

software and hardware in its original form, be it content, physical presence and function ability.

4. Encapsulation

Encapsulation is also an essential part of emulation and plays an important role in some preservation strategies. It involves retaining a digital object in its original object as a bit stream, and encapsulating it along with instructions and whatever else might be necessary to access it in the future. This might include software viewers or software specifications for emulation, as well as comprehensive preservation metadata.

5. Technology Preservation

Like emulation, technology preservation focuses on the technology rather than on the digital resource. It involves preserving the digital object with the hardware and software required to maintain access to the object.

**Storage media used for digital preservation**

Storage media plays an important role in preservation of digital resources or information. Without storage media, digital preservation is impossible. The selection of the storage media depend on the capacity of the storage, market presence, types of digital resource/information and finance. Some of the storage media for the preservation of resources are:

- \* *Magnetic media* DAT and DLT Tape, ZIP(V), magnetic tape, floppy disks and hard disk drives are examples of magnetic media. They provide a versatile storage of information.
- \* *Optical storage Media* CD-ROM and DVD-ROM are examples of Optical storage media. They should be handled with great care.
- \* *Blue Ray Disk* The main uses of Blue ray disk are high definition and data storage.
- \* *USB Flash Drive, Secure Digital Card (SD Card), Solid Slate Drive (SSD), Cloud Storage* is some of the last storage media for digital preservation.

*The need for Digital Preservation*

Digital preservation has become an important process in information society in order to have the long term access of information for the present and future generations. Reasons for the need for the digital preservation are as follows:

1. To preserve traditional knowledge

2. Making the information survive the future generations.
3. To erase the problem of storage difficulty.
4. To cut down the price and save time in all respect.
5. To maintain information about historical value.
6. To reduce the effect of deteriorating factors.
7. To provide worldwide accessibility.
8. For the purpose of backup of resources from traditional library.

#### **Difficulties and Barriers in Digital Preservation**

Difficulties in digital preservation arises due to technical, social and legal issues. They are:

1. There is a rapid increase in the number of digital objects and proliferation of document standard and formats. There is no doubt that in present; there are more than 27 million documents only from the government, universities and personal collections to be digitized.
2. There is a great need to create awareness among the masses about the preservation of archives so that information can be handed to the future generations.
3. It is estimated that it will take approximately 10 years to fulfill the request that are pending.
4. There is an increasing complexity of digital objects.
5. Lack of trained library personnel.
6. Lack of technical expert in relation with digital preservation.

#### **Barriers in the Indian context**

1. Some of the Indian libraries are still lacking IT application.
2. There is lack of adequate financial support and lack of infrastructure facilities for digital preservation.
3. In India, there are still some areas with no internet connection or places where internet connectivity is weak. It can be due to the geographical location.

4. There is also a lack of knowledge and less awareness among the people about the availability of various digital resources. Therefore, there is positive attitude towards the concept of digitization.

#### **CONCLUSION**

Preservation of digital resources in all its aspects is going to require some form of educational transformation. Digital preservation requires a long time strategy and appropriate technology adoption. This has still become an issue in the 21<sup>st</sup> century. The speed of technological obsolescence makes digital preservation an important issue for everyone. Today, many libraries of the world are concerned with digital preservation of traditional information for the future generations. But preserving digital objects in the medium and long run still faced issues because of technological developments. But the problem of digital preservation is not static and will continue to evolve with the development in technology.

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#### **Corresponding Author**

**H. Darhmingliana\***

Librarian, Govt. Mamit College

[dhlianabzv@gmail.com](mailto:dhlianabzv@gmail.com)