**Digital Preservation: A Need of Tomorrow**

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**Abstract**

Digital libraries have been established all over the world to create, maintain and to preserve the digital materials. This paper exhibits the importance and objectives of digital preservation. The necessities of preservation are hardware and software technology to interpret the digital documents and discuss various aspects of digital preservation.

**Keywords:** Preservation, Digital Preservation, Conservation, Archive, Repository, Document, Information Technology, Hardware, Software, Organization, Machine Readable Format.

**INTRODUCTION:**

Nowadays important scientific and cultural information assets are created, stored, managed, and accessed digitally. Most of the cultural and heritage materials are being digitalized to provide immediate accessibility anywhere in the world. But the threat of losing the born-digital or digitalized material is so high for long term preservation. Hardware and software technology continues to germinate at a rapid rate. Being old fashioned, formats, hardware, software, carriers, strategies and standards, digital information may be lost unless we take care it. Hence, digital preservation is most crucial for the benefit of present and future generations to access the information. Changes in organizations and their cultural and financial priorities add risk to continue the accessibility and long-term preservation of digital assets. Unlike print-based materials, digital assets cannot survive significant gaps in preservation care. Despite the increasing evidence documenting the fragility and ubiquity of digital content, cultural repositories have been slow to respond to the need to safeguard digital heritage materials. The present article focuses the area of preservation of digital material, standards for digital preservation, and suitability of digital preservation in digital library system in the changing paradigm.

***Definition:***

Digital preservation is defined as: long-term, error-free storage of digital information, with means for retrieval and interpretation, for the entire time span the information is required for. Long-term is defined as "long enough to be concerned with the impacts of changing technologies, including support for new media and data formats, or with a changing user community. Digital preservation involves the many activities necessary to enable continuous access to digital content. These activities include ―collection, description, migration, and redundant storage. Born-digital materials present certain difficulties in this mission. As with other digital objects, preservation must be a continuous and regular undertaking, as these materials do not show the same kinds of advanced warning signs of degradation that print and certain other physical materials do. Invisible processes such as bit rot can lead to irreparable damage. Digital preservation is the set of processes and activities that ensure continued access to information and all kinds of records, scientific and cultural heritage existing in digital formats. This includes the preservation of materials resulting from digital reformatting, but particularly information that is born-digital and has no analog counterpart.

According to the Association for information and image management ***“Digital preservation is the ability to keep digital documents and files available for time periods that can transcend technological advances without concern for alteration or loss of readability”.*** According to RLG/OCLC report ***“Digital preservation refers to the series of managed activities necessary to ensure continued access to and preservation of digital material”.*** According to Glossary of LIFE ***“Digital preservation is a process of ensuring that a digital object is accessible over the long term”.*** According to Trusted Digital Repositories (TDR) ***“Digital preservation encompasses a broad range of activities designed to extend the usable life of machine readable computer files and protect them from media failure, physical loss and old fashioned”.*** In light of above statement we can say that the digital preservation is to preserved the objects for a long life utility and accessible for many generation.

**Merits of digital preservation**

* General application of digital technologies in an archive or library is digital copies that can be used for ready references instead of causal browsing through the original sources. Physical accesses to the original documents are limited, so are the objectives of preservation.
* To represent the detailed information content of the original sources, a digital system can be used to fulfill most of the research and learning potential of the original documents. High resolution system of this intermediate level of quality open new avenues of research effect by the use that can have a transformative effect on the missions of those who create the products.
* Very small but increasing number of applications, digital imaging holds the promise of generating a product that can be used for purposes that are impossible to achieve with the original source. This category also includes digital imaging products that incorporate searchable full text (marked up raw). Additionally, digital products that draw together, organize, and enhance access to widely dispersed research materials may have transcendental impact on the people who use them.
* It helps to preserve rare and fragile objects without denying access to those who wish to study them.
* Once books are converted to digital, users can retrieve them in seconds by searching for words, combination of words, phrases or ideas. Readers can choose whether to view, or store on a computer or take prints. Several people can simultaneously read the same books or view the same picture.
* Electronic copies occupy millimeters of space rather than meters on shelf and the problems of space vanish when libraries opt to digital medium.

**OBJECTIVES:**

The purpose of digital preservation is to ensure protection of information of enduring value for access by present and future generations. Digital technology is revolutionizing the traditional concepts of preservation, access and archival of information. These are some important objectives which fulfill the aims of digital preservation as follows:

To maintain the historical value of information.

To make information survive life long.

To reduce the effects of deteriorating factors.

To make it easy to use and handle.

To provide world wide accessibility.

To save the space and time.

To digital preservation technical metadata.

**PRESERVATION:**

Preservation ensures the stability of document in digital or any other form in an accessible manner for all times. However maintaining the accessibility of digital media is more complex than non-digital media, such as paper. For example, when a book is preserved in its original format, all aspects of the book are preserved its physical presence, its format, its layout, and it’s content. It is practically impossible to extract individual element because they are inextricably linked. Even reformatting the paper or microfilm does not completely divorce content from layout as page sequences and physical appearance, for instance, can still be captured. Digital objects, in contrast, are easily decomposed into individual elements, and significantly more effort must be made to preserve them as a whole.

* Preservation itself is primarily concerned with the survival of information in a usable form for as long as it is required.
* Preservation encompasses a wide variety of inter-related activities, such as procedure, policies, standards etc. designed to prolong the usable life of human artifacts.

**DIGITAL PRESERVATION:**

A digital preservation strategy is a particular technical approach for providing continued access to archived digital materials. At this time, three main strategies are used to keep materials within the repository fresh and ensure that they are accessible using current technology. Data migration, persistent objects transformation, and technology emulation. Digital preservation is a process by which data is preserved in digital form in order to ensure usability, durability and intellectual integrity of the information contained there in. The term digital preservation is used in different ways. Fresco (1999) defines as ―the storage, maintenance and access to digital objects over long term. The key point of this definition is that it is about ensuring that intellectual content, which is already in digital form, remains accessible to the future generations. Different ways of preserving information in a variety of data formats and structures are Office Documents, E- books, Databases, Email, Websites, Images, Engineering drawings, Scientific Datasets The Digital preservation has to guarantee the integrity, understandability, originality, authenticity, and accessibility of digital records and data over long term. To enable this preservation file formats have to fulfill a number of requirements. Their syntactical and semantically specifications must be in public, they must be free of patent and license fees, and ideally they are standardized by a recognized standardization body. Wide use and acceptance improve long term perspective of file formats. Preservation formats must be free of any cryptographically and compression techniques, their specification should be self contained, and they should be storage media independent. Microforms and compact discs are two important media of digital preservation. In the digital preservation process in microforms and compact discs the following steps should be maintained.

***MICROFORM:***

* Microform reader, reader-printer should be inspected.
* Defective equipment should not be used.
* Deteriorating microforms should be removed from storage area.
* 20-22 C temperature in A. C. room.

***COMPACT DISCS PRESERVATION:***

* Free from oily finger.
* Don‘t bend and caution when handling.
* Blank side should be dust free.
* Don‘t use markers or gummed stickers.

**HARDWARE AND SOFTWARE FOR DIGITAL PRESERVATION:**

For the digital preservation, a high class secured hardware and software infrastructure is required such as:

* There should be proper arrangements for the power back-up systems.
* While hardware and software infrastructure is going to be installed, keeping in view of obsolescence of the technologies.
* The software should be capable of converting any format in to the universally accepted format i.e. XML format.
* It should be compatible with the most used platforms such as Java etc.
* The software should not only have the preservation asset but also it should have the dissemination and retrieval asset.

 **SELECTION OF HARDWARE:**

Infect, Selection and purchase of computer hardware is a complex procedure. There are different types of firms and organizations to supply computer hardware and parts such as:

* Computer manufacturers
* Independent terminal and peripheral manufacturers
* Selling companies
* Leasing companies
* Retail shops

There are many computer manufacturers such as IBM, Macintosh, Apple, UNIX, Wipro, HCL, and Compaq etc. There are many indigenous makers and suppliers in India today. Standardization in the hardware is an important factor. Otherwise, it would become obsolete in no time. Fast changes are taking place in this area. Hence the librarians have to be cautious and think ten times before they decide about the computer hardware.

**CONCLUSION:**

Today, information has become the fourth basic need of our life and if we are well equipped in information technology, then our country would not suffer from the problem of lagging behind in this rapidly changing world. The libraries are responsible to collect, disseminate and preserve the printed heritage of our country. Digital preservation in one such initiative, the library has to take up responding to the growing use and adaptability of information technology to library related activities.

Digital Preservation can, therefore, the seen as the set of process and activities that ensure the continued access to information and all kinds of records. A serious commitment to preserve digital information requires a legal environment that enables preservation. It also means that specific organization must take responsibility for preservation by erecting new policies and creating the economic means to secure survival of this generation‘s knowledge in future. And last but not the least the process of digital preservation contains five things. These are content, fixity, reference, provenance and context.

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