

Trends in Digitization and Archiving, Digital Preservation: Issues and Challenges

Dr. Roopa Gokhale-Shahade

Librarian,

R.D. and S.H. National College and S.W.A. Science College
Linking Road, Bandra (West), Mumbai 400050

Abstract :

This paper studies the issues of digitization saving, problems and challenges. It also discusses the recurring challenges during digitization and its impact on planning and policy. Digitization is the process of converting documents and converting art images into digital images. The concept of saving problems and challenges, including the meaning of digitization, is also explained here. Digitization is a process in which material is converted from hard copy to electronic copies. Key Objectives of Digitization: Increase access to library materials and improve their protection. The process of digitizing library materials has posed many challenges. These challenges include human and technical difficulties, which have consequences for planning and policy. It was concluded that the need to meet the current challenges in modern day libraries and go digital is to provide online services.

Key Words : Digitization, Preservation, Archiving, Issue, Challenges, Important.

Introduction :

Since the dawn of civilisation human beings have communicated through gestures, symbols, sounds, words and written media like clay tablets, papyrus, parchment, and palm leaf. The beginning of the 15th century heralded the use of printed books and journals and of late through electronic media. During the past two thousand years of human history, civilisation and culture it is evident that the intellectual products of human thought and endeavour were being procured, processed and the thought content embodied in these documents disseminated to the user community. These documents thus are required to be preserved and conserved for posterity (Raju, 2008).⁽⁴⁾

Preservation of written records is apparently just as old as written records themselves. The problem of preservation of rare documents, manuscripts and old records has continued since human being acquired the knowledge of writing. Books and manuscripts have always preserved the documentary and cultural heritage of our ancestors and these special documents are the prized possessions of every nation.⁽⁶⁾

There is an alarming increase in deterioration of archival records. Preventive steps and treatment required for effective preservation of these pieces of information should be undertaken. The successful preservation of history is the bedrock of current human information, knowledge and civilization. Without this attention and effort, natural and manmade disasters will singly or jointly wipe out irreplaceable foundations of the past (<http://www.panjabdigilib.org>).⁽⁵⁾

National Archives of India (NAI) and National Mission for Manuscripts (NMM) are the two national agencies entrusted with the responsibility of treasuring and preserving the invaluable archival records. NAI serves as the custodian of these records and is sincerely dedicated to the welfare and development of archives and archival profession. NMM locates and catalogues the rare documents available in the remotest nook and corners of the country. The very aim of the present study is to investigate and study the role of these agencies in the preservation and conservation of the rich national heritage records so that the content enshrined in them continues to inform and educate users forever.⁽⁷⁾

Definition :

Digitization

According to Harrod's Librarians Glossary (Peytherch, 2000) "Digitization is the process of transferring information content from a traditional format into a digitally readable version. Typically a scanner would be used for this purpose when digitizing a printed book; digital imaging of manuscripts, paintings, prints etc, is also covered by this term. Digitization is now quite favored as part of the drive to improve preservation techniques, as fragile originals need not be handled afterwards except in specialized circumstances. Access is greatly improved, as digitized texts can be readily searched, and digital images of faded or difficult originals can be computer enhanced. Several national libraries have started digitization programs for Brittle books, delicate or rare materials ".⁽²⁾

Digital Preservation :

According to Russell (2009) "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. A more precise definition is: the storage, maintenance and accessibility of a digital object over the long term, usually as a consequence of applying one or more digital preservation strategies. These strategies may include technology preservation, technology emulation or data migration".⁽³⁾

National Archives of India (Nai) :

The National Archives of India (NAI) is the premier national agency containing prized and precious archival records. As per the mandate of Public Record Act of 1993 and Public Record Rules of 1997, NAI is the custodian of all non-current records of the Union Government of India and its predecessor bodies as also the former British Residencies in the erstwhile Indian princely states. It holds the records for the use of administrators and scholars. It shoulders dual responsibility of storage, dissemination, preservation and conservation of our national heritage records embodying rare and invaluable content. It may be said that it is a place where researchers and administrators have a peep into the past of India with the help of social, cultural, political, economical, historical documentary heritage.⁽⁸⁾

The NAI owes its genesis to the Imperial Records Department which came into existence in March 1891 at Calcutta (Kolkata). After the transfer of capital from Calcutta to New Delhi in 1911, it shifted to its present site in 1926. The Imperial Records Department was re-christened as National Archives of India on 30th August, 1947. Today it is referred to as the Delhi's most intellectual destination and is an attached office of the Ministry of Culture, Government of India. It has a regional office at Bhopal and three Record Centres at Pondicherry, Bhubaneswar and Jaipur (<http://nationalarchives.nic.in>).⁽¹⁰⁾

Digital Archiving

Digital Archives are the repositories where the digital information related to social, economic, cultural, and intellectual heritage is preserved for long-term accessibility. Digital archiving identifies and moves inactive data out of the current production system and databases into long-term storage systems. The archives preserve digitized or born-digital material to preserve them for the long term because it may have evidential, legal contextual, cultural, and historical or informational value. The archived data is kept and maintained for future reference and use. The digital archiving facilitates storage, preservation, easy access, and use by posterity, promotes paperless organizations, and maintains confidentiality of data. The Memory institutions like museums, library and information centers archive resources of learning and cultural heritage to make them accessible for use in the future. UNESCO has urged its member states to document and archive the implications and consequences of COVID-19 (UNESCO).⁽¹¹⁾

The National Archives of Australia, New Zealand, UK, Spain, Switzerland, Germany, USA, India, and Canada maintain records of government departments, military units,

customs, patents, history, and culture. The community-based archives document, record, and preserve their histories, heritage, and experiences for future use and reference (Rodrigues, 2016).⁽¹²⁾

Personal Digital Archiving (PDA) is a new concept that has emerged lately. It means when individuals want to capture and archive their digital records; or when libraries or museums want to preserve individuals' digital records. Nevertheless, the individuals and institutions may adopt different practices in managing and preserving digital archives, based on the knowledge and skillsets possessed by them. PDA involves practices of traditional archiving and personal information management (Condrón, 2019).⁽¹³⁾

Important of Preservation and Conservation :

Preservation and conservation activities protect the archival materials from the multitude of human and environmental threats. They are an indispensable means of assuring the availability and access to human knowledge for present and future times. Archives contain materials having intrinsic value, which are important for healthy growth of the society. Archives have social obligations to care and preserve the records of history, art, culture, heritage, traditions, scientific discoveries etc. for the future generations. As the years pass by, the value of rare books, manuscripts, paintings show upward appreciation and it becomes almost impossible to replace them in their original form. So the preservation and conservation of archival records is absolutely necessary.⁽⁹⁾

Issues of Digitization :

Many of decision maker's archive and library managers, curatorial and technical staff members and also particular users that responsible in handling the digitization work always faced many issue and they must be concern on what they doing in digitization process. The issue can be a positive issue and also a negative issue. But, the management of assets for digital process presents new challenges to the archive and library community in terms of using and managing complex hardware and software, but mass digitization has not changed the fundamentals of services in archive and library. There are many issues and concern that they must face which are: 1) Legal Aspects, 2) Untrained Staff and Human Error, 3) Changing Format and Obsolescence of Technology, 4) Funding, 5) Refreshing and standardization, 6) Constantly Changing Software and Hardware, and 7) Emulation.⁽¹⁵⁾

Challenges for Digitization Preservation :

Despite evidence of increasing concern about digital preservation, there are numerous technical, organizational, legal and economic challenges to a comprehensive infrastructure for protecting and preserving digital assets.

1. **Technology problems:** The success of digital preservation depends on the use of appropriate medium of technology. But the technology relating to hardware and software are changing rapidly making the existing technology fragile and backward. The concerned institution must have to upgrade required hardware and software otherwise the system may not be provided expected output.
2. **Nature of Content:** Digital information exists in several forms and types. Most of the objects that are true replica of their print document like books, reports, correspondence etc. can be converted into digital documents and preserve but materials that cannot be replicated in traditional hard-copy, for example interactive web pages, geographic information systems and so on may create problem.
3. **Machine dependency:** As digital contents are machine-dependent, access to digital contents may require specific hardware and software that were used for creating them. But since computer as well as storage technologies are in a continuous flux of change, preservation components should be changed and upgrade accordingly. Otherwise, it may create greatest technological threat to ensure continued access to digital contents.
4. **Sustainability of digital object:** Digital materials are especially vulnerable to loss and destruction because they are stored in fragile magnetic and optical media that deteriorate rapidly. Besides, it can fail suddenly from exposure to heat, humidity, airborne contaminants, or faulty reading and writing device. In some case digital object have a very short span of life coverage comparing to hard backed traditional copy. This may be a problem for digital preservation.
5. **Inappropriate budget:** Digital preservation requires new and sophisticated technology and trained manpower which requires additional expenditure for the concerned institution. In this case if adequate budget is not provided, digital preservation project may be greatly hampered.
6. **Intellectual Property Rights:** Digital technology gives libraries an excellent opportunity to improve their services. It also provides new ways and means of preservation and dissemination of library collections. But, as digitization practice involves in migration of original products, Intellectual Property Rights may hinder transforming the originality and also disseminate the same.

7. Shortage of skilful manpower: Digital preservation requires trained and technologically skilled manpower for proper management of resources. But getting such manpower some times become very difficult.
8. Lack of national level collaboration: There is no legal framework in Bangladesh for maintenance and preservation of resources that bears national importance. Besides, in most case digital preservation is poorly understood and poorly funded which is a barrier to success.
9. Nature of storage medium: Digital storage media, whether magnetic or optical, are subject to relatively rapid decay: especially when compared with print. The hardware and software - digital information is machine-dependent, and to be read" accurately it needs specific computer hardware and software. Unfortunately, hardware and software quickly become obsolescent or otherwise unusable.
10. Media failure: The most familiar problems in digital preservation are media failure or deterioration and rapid changes in computer hardware and software that make older systems obsolete on a regular basis.⁽¹⁶⁾

Conclusion :

The changes in the information are rapid and it is important for information profession to change with it too. Information was created to share and disseminate the information and the professional needs to ensure that the information can be more easily to share when they decide to digitize the records. They need to be more extra careful on intellectual property but at the same time they have to meet the requirement of their patron. The digitization is very important in this 21st century as the user now prefer to search for information online as it is easier rather than searching for the paper-based records. They need to provide the information as powerful and easy as Google or another search engine. The numbers of patron that use our service shows either the service provided are good enough or not. But the process of digitization might require time and budget but it will give a good image in future.

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