

Digital Heritage Archiving in India: A Case Study of Panjab University Library, Chandigarh

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Summary

The Indian libraries are undergoing dramatic transformation by getting converted into digital libraries thereby fulfilling the objective of preserving national heritage and culture and making it globally accessible.

Purpose: The aim of the paper is to call for digitization and preservation of manuscripts in library area.

Methodology: This paper highlights the procedure of digitization undertaken by Panjab University Library to preserve the manuscripts and provides a case study.

Findings: This paper explores that the only way out for preservation and access to manuscripts is digitization

Implications: Suggestions for best possible preservation access and strategy is provided.

Originality: Section 1: Discusses the methods of preserving the manuscripts

Section 2: Explores the concept and need of digitization

Section 3: Highlights the digitization policy and criteria for selecting the documents for digitization.

Section 4: Provides valuable insight into the infrastructure required for digitization

Section 5: The digital library initiatives taken in India are explored.

Section 6: A Case Study of the initiative of Panjab University Library in digitizing the manuscripts with an objective to preserve, conserve and upgrade the manuscripts through digitization and digital preservation.

Section 7: Conclusion/Suggestions

Key words: Manuscripts, Archives, Methods of Preservation, Digitization, Panjab University Library, Digitization Policy, Digitization Initiatives

Introduction

The preservation of the documentary heritage has to be seen in the broader context of managing what we have inherited from the past in a way which will allow us to hand it over to the future. Documentary preservation makes sense only when we take accountability of the preservation of the objects, built-in environment and create landscapes for the same. But we cannot preserve everything, and indeed should not seek to do so. As a society needs and desires change, the political and social expression of its understanding of, and need for, its inheritance also changes. In responding to change, each generation makes its own contribution to the heritage of the future. How we decide what must be preserved, and how we preserve it in a meaningful way, is the question which lies at the heart of preservation management.

Methods of Preserving the Manuscripts

Physical preservation of manuscripts is an intricate procedure. Indian paper manuscripts may last four hundred years while palm leaf manuscripts may, under the best of environment, last seven hundred years. The various methods for preserving the manuscripts in India are:

- Photography, especially microfilming, and photocopying (xeroxing) but they are recommended if the documents are to be preserved for only a few decades. Manuscripts could also get lost during microfilming. Scanners are comparatively time-consuming, thus can damage the deteriorating manuscripts.
- One of the best techniques for digitization could be first to microfilm the manuscript, then medical or high-scan it through high-definition film scanner.
- Digital still cameras are another method but it is costly. A few pages could be copied and then these images had to be downloaded into a computer before other pages could be copied.
- DV format camcorder was introduced in June 1988 to digitize the manuscripts directly.
- In 1999 a simple and easy to learn and use digital still cameras was launched which met the requirements for in-house digital copying.

Concept of Digitization

The process of converting information or input data in any physical form such as a print, images, photographs, video tapes, etc into machine readable digital form of computer processing is known as digitization. Digitization is the dominant means for comprehensive dissemination of information.

Taking into account the variety of alternatives for preservation of manuscripts along with the expansion and widespread applications of ICTs and networks, it has been universally acknowledged that digitization of library materials is cost effective and thriving improvement in storage, preservation, search, retrieval, dissemination and ensure efficient usage of information in the age of information technology. According to Yerkley (1996) digital libraries are electronic libraries in which a large number of geographically distributed users can access the contents of large and diverse repositories of electronic objects.

Need of Digitization

Information explosion has lead to constraints in finances and manpower in the libraries all over the globe and it is unfeasible for any library to acquire whatever has been published worldwide, thus giving way to the introduction of a new concept of automation, e-resource sharing and networking which has improved and accelerate the working of the library. Resultantly the reliability, productivity augmented, consequently saving the time of users and staff. It is then, the notion of digitization evolved in the field of libraries in three stages:

- Traditional Libraries - Automated Libraries
- Automated Libraries - E-Libraries
- E-Libraries - Digital Libraries / Digitization
- Digital Libraries - Virtual Libraries

In India, large numbers of university and college libraries have introduced digitization in their institutions. The need for initiating digitization arises:

- To take advantage of the ICT facilities for e-sharing of resources worldwide
- To access resources from remote areas
- To access the information and digital resources 24X7 anywhere, anytime instantly.
- Multiple number of users can access the information simultaneously
- Simple and easy search and retrieval techniques
- Cost effective
- Obstacle of time, space has been reduced
- Rapid and flawless access to geographically distributed
- User friendly display of information
- Any number of copies can be generated with the help of digitization

Digitization Policy and Criteria for Selecting the Documents for Digitization

Vogt O'Connor (2000) recognized three segments in the selection of documents namely, nomination, evaluation, and prioritization. Legal aspects and stakeholder concerns are talked about and also made accessible the checklist for the

appraisal of resources, including factors such as contributor limitations, condition of materials, and the legitimacy of the items.

Similarly, De Stefano (2000) accord prime importance to copyright issue. Although sometimes, it is not possible for libraries to obtain copyright permission, resultantly the project gets crumbed.

Smith (2001) recommends that the purpose of digitizing the documents should be lucid as to whether it is for conservation, or some other purpose.

The Digitization Policy for India should be extensively within the Information Policy only. While framing the digitization policy, one has to take into consideration certain factors keeping in view the dissemination of information and services:

- Education and enduring learning for general public
- To enhance the information access for participation in the socio-economic field.
- Vocational training and employability.
- Cultural heritage preservation by acquiring knowledge about the conventional set up
- Historical substantiation and history.

The following is the guideline for selecting the documents and framing the policy for digitization:

- Selection Principle – Those contents which are important in terms of intellectual implication, distinctiveness, relevance and as per demands of the users. As most of the content in India is available in varied formats and media, therefore, it is also significant to consider the same.
- While undergoing the process of digitizing the documents for long-term preservation, certain set standards and guidelines have to be followed for the same
- Quality perspectives for digitization, access and preservation.
- As India is having a diverse culture, numerous numbers of languages and scripts, there is a need to generate suitable metadata as per specified standards for the access of such diverse type of documents in order to gratify the information needs of the users.
- OCR facility as per specified standards for Indian languages may be developed
- Keeping in view the information explosion and large number of information resources, the issues like Intellectual Property Rights (IPR), piracy problems, copyright issues and other legal aspects have to be taken into consideration while formulating digitization policy.
- After the process of digitization, the procedure for preserving the original documents have to be specified.

- Expenditure associated with digitization process, recurring, non-recurring, costs associated with obligatory infrastructure expansion for the development of digital libraries
- Trained and qualified human resources for the implementation of digitization and preservation process in the library.
- National Repository of Indian digital material may be formed.

Infrastructure Required for the Digitization of Manuscripts

For the digitization of Manuscripts, the following infrastructure is required:

Hardware

- Computers with Pentium IV, Dual 2 Core, PCI Bus for information flow, Ethernet for transfer of data, RAM to load, reload or create digital image of different size and colors.
- Storage Devices like Hard Disk Drive, Removable Hard Disk Drive for backup of digital objects and storage, Optical Drive, Digital Audio Tape for archiving and retrieving the data.
- Monitors for sharpness and lucidity of colors are vital to create professional looking digital images
- Digitization Devices like Scanners used to digitize photographs, artwork and slides. Digital Cameras are also required to capture the images for downloading them to the computers
- Output Devices such as Printers, Modem, CD Writer etc

Software

The software with the following facility needs to be installed for the purpose of digitization:

- That which could edit images
- That which has a page layout programmes for amalgamating text and graphics
- That which has a file transfer efficacy to share files between computers
- That which has a file translation programmes to translate files from graphics to text and from text to graphics
- That which has a facility of file compression.

Digital Library Initiatives Taken in India

Digitization in Indian Libraries is still in infancy stage but gaining prominence in the field of information processing, digitizing, preserving, disseminating and accessing. In this context, it can be said that the application of digital technologies to preserve the cultural heritage in Indian libraries is entirely new concept as it is a intricate process of experimentation with achievements and disappointments. At institutional, organizational and national level, a number of

digital library initiatives, some booming and some making momentous growth have been taken in India as detailed in Table 1.

Table 1: Digitization Initiative in India

Digital Library Initiative	Initiated By	Funded By	Website
Digital Library of India (DLI)	IISc (Indian Institute of Science)	Ministry of Communication and Information Technology	http://www.dli.ernet.in
Nalanda Digital Library	National Institute of Technology (NIT) Calicut	All India Council of Technical Education (AICTE)	http://www.nalanda.nitc.ac.in
Archives of Indian Labour: Integrated Labour History Research Programme	V.V.Giri National Labour Institute and Association of Indian Labour Historians	---	http://www.indialabourarchives.org
Indian Institute of Science	NCSI	---	http://vidya-mapak.ncsi.iisc.ernet.in/cgi-bin/library
Kalasampada: Digital Library-Resource for Indian Cultural Heritage (DL-RICH)	Indira Gandhi National Centre for Arts (IGNCA)	Ministry of Communication and Information Technology (MCIT)	http://www.ignca.gov.in/dlrich/
Mobile e-Library	C-DAC Noida	Ministry of Communication and Information Technology (MCIT)	http://mobilelibrary.cdacnoida.in
Traditional Knowledge Digital Library (TKDL)	National Institute of Science Communication and Information Resources (NISCAIR)	Department of Indian Systems of Medicine and Homoeopathy (ISM&H)	http://www.tkdl.res.in
National Science Digital Library (NSDL)	National Institute of Science Communication and Information Resources (NISCAIR)	---	http://www.niscair.res.in
Down the Memory Lane	Central Secretariat Library	Ministry of Culture	http://csl.nic.in
Digitization of Manuscripts	National Mission for Manuscripts	Ministry of Culture	http://namami.nic.in

Initiative of Panjab University Library, Chandigarh Historical Background of Panjab University, Chandigarh

Panjab University was established in the year 1882 in Lahore and after the partition of India and Pakistan, the library was shifted to Shimla. In the year 1955-

56, it was moved to its present campus in Chandigarh. The library building was formally inaugurated in the year 1963. Since that time the library has progressed in all ways and shifted from a manual system to fully automated one. The library introduced computers for the first time in mid 1990 and in the year 1996, the scenario was changed with the introduction of integrated system, connected to the campus network and subsequently, possessed numerous facilities like telefax, e-mail, internet, Online Public Access Catalogue, multimedia, CD-ROM databases, e-books and e-journals etc. The library has a rich collection of more than 7 lakh volumes and 600 Periodicals. The digital library alongwith the facility of e-resources both online as well as offline has been created.

Manuscript Collection

Collection of Manuscripts in Panjab University Library is rare and important. In order to preserve its heritage, the Panjab University Library commenced digitization of its rare collection in the year 2004 and took the decision to open an archive for the upkeep of its numerous collections. Because of the cultural and historical importance and its implication, the magnitude of such holdings can be well ascertained. There are total of 1493 manuscripts available in various languages like Hindi, Urdu, Persian, Punjabi, Sanskrit and Sharda Script wrapping extensive range of subjects for instance, Persian, Court Etiquette, Poetry, Writings of the Sikh Gurus and other translations of eminent personalities as listed below. Government Reports and other general archival trends are also component of the holdings.

List of Manuscripts Available in Panjab University Library

- Mutiny Records.
- Writings on different tribes of North-Eastern States & Andaman Nicobar by different English authors.
- Reports on the resultes of scientific voyages (H.M.S. Challenger).
- Educational Records published by the Govt. of India since colonial days.
- Reports and Surveys of the flora and fauna of the British India.
- Atlases. (both historical and Geographical)
- Imperial Gazetteer of India.
- Natural history of plants.
- Books on Art, Architecture and Painting.
- Writings of the Viceroy and Governor-Generals.
- Biographies.
- English Factory Records.
- Religious literature pertaining to temple, Gurudwara and Mosque.
- English literature on Shakespeare and George Bernard Shaw.
- Books on Sanskrit and Hindi literature, history.
- Books written by medieval writers and travellers.

- Laboratory results from different laboratories of India on scientific subjects and many more...

Panjab University Library Initiative

The Panjab University Library started digitization of its collection in the year 2003 as per the guidelines provided by National Manuscripts Mission; (NMM) established by Department of Culture, Government of India with an objective to preserve, conserve and upgrade the manuscripts through digitization and digitize preservation. In order to harness the knowledge embedded in the Manuscripts and to preserve the cultural heritage of our national the digitization process was commenced. Both national and international users make use of the manuscripts for the research purpose. This use increased manifold with the onset of digitization. Although the digitized collection of manuscripts is presently not available on Panjab University website, still efforts are being made to put them on web using D-space software.

Conclusion

The accountability of making the digital technology successful rests upon librarians, policy makers, educationists, technical personnel, and institutions as well. Individual organization cannot make an adequate amount of effort and accomplish the desired results. That's why organizations / institutions have to work together in synchronization so as to prepare appropriate guidelines for constructive and sustainable digitization programmes.

Digitization is a new conception that is gaining eminence in India and lot of literature on this theme and other issues are mushrooming and it is to be seen that how such imperative issues are being tackled by the library professionals. In order to survive in this world of competition, it is obligatory to recognize and welcome such advances with an unbolt mentality. The digitization process is undertaken by a good number of the Indian libraries these days for preservation, conservation and 24X7 accessibility.

Digitization is the existing area of investigation in this day and age, as it offers high-impact research opportunities for researchers in library and information science field and many librarians and library and information science departments are focusing on it.

In view of the fact that Indian information professionals have currently understood that information is supreme, the Government of India is taking necessary steps for the development of telecommunications and other ICT facilities to make IT based Information access veracity, thus there can be noteworthy enhancement in the excellence of dissemination of information.

The Government of India is initiating efforts to preserve its cultural heritage by formulating policies and strategies at the National Level. The liability lies with the National Informatic Centre, National Library, National Archives and many other individual libraries and information centres across the Nation and over-

seas. Since the manuscripts are scattered in different libraries, museums and archives all over the country, hence, it is the accountability of each of the separate institutions to preserve their cultural heritage, that is manuscripts, with the contemporary digital technology and that technology is called digitization.

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