Management of Preserving Resources in Digital Library in Indian Scenario: Challenges and Perspectives

Dr. S. K. Pandey
Lib. & Doc. Officer
Inst. of Human Behaviour & Allied Sciences
(Govt. of NCT Delhi)
New Delhi (INDIA)

E-mail: shashikp@hotmail.com
Introduction

Information explosion and application of Information Communication Technology (ICT) for proper handling, retrieval and dissemination of information necessitates the need for Digital resource preservation. Digital technology is revolutionizing the traditional concept of preservation, access and archival of information. Digital libraries are a set of electronic resources and associated technical capabilities for creating, searching and using information.
Objectives

The objectives of this paper is to highlight the on-going digital programme on preserving resources in Indian scenario. It can be attributed to the following factors:

• Emergence of Internet and Web technologies as a media of information and storage access.

• Advances in online storage technologies enabling storage of large amounts of data at affordable cost.

• Availability of simple and intuitive user interface.
Methodology

In order to collect the comprehensive and relevant data, a survey and interview methods was adopted as the tool for collection of data from the libraries. Data formulated keeping in view, the objectives & various facets of study.
History & Development of Digital Library

• **Earliest application of digital library concepts implemented by the U.S. air force in 1967.**

• **Early 1970’s digital libraries were around mini and main frame computers providing remote access and online searching.**

• **During 1980’s sophisticated information storage and retrieval system came into light.**
• 1980’s Online host like DILAOOG & STN providing full text online journals through simple ASCII or text files.

• Late 1980’s and early 1990’s several full text databases started appearing such as IEE electronic library.

• 1990 witnessed a revolution in digital library system with the introduction of WWW which include multimedia objects like image, audio, video etc.
Digital vs Traditional Libraries

Digital medium is better for searching and the physical medium is better for reading.

Digital library is not only digitization of physical materials, but also the organization of electronic collection for better access.

It provides coherence to a massive amount of shared knowledge while the access provides convenient retrieval for a wide range of users distributed across networks.
Digital Library Components

- **IT Infrastructure**: computers with LAN/Internet and requisite software.
- **Media Collections**: Digitized information such as CD-ROM, Disks etc.
- **Telecommunication Facility**: It provides communication between one host to another and required to access the databases, networks & e-mail services.
- **Manpower**: Trained manpower is required.
Design and Management of Digital Library Resources

- Infrastructure Planning
- Information resource Planning & development.
- Information accessing methods.
- Man power.
- Financial needs.
Digital Library Resources can be built by following methods.
Indian software like SOUL, LibSys and LIBSuite follow GSDL. Now majority of projects build their searchable databases on Dublin Core, with a base of Z39.50 and DSpace software. DSpace is an open source software with customized and extended capabilities with digital archiving for perpetual access. FEDORA (Flexible Extensible Digital Object Repository Architecture) is another open-source software uses for digital institutional repository, digital archives and preservation content management system.
Preserving Digital resources

Digital preservation refers to the series of managed activities necessary to ensure continued access to digital materials for as long as necessary.

Research Library Group describes “Digital materials regardless of whether, they are created initially in digital form or converted to digital form are threatened by technology obsolescence and physical deterioration ”.
Technology Tools

A number of technology tools are available to create digital information using HTML, PDF, XML, JAVA, etc. for online access. Recent trends in ICT for digital libraries have reinvented librarian & Information professionals to cope the challenge for digital information and technology.
Digital Resource Preservation Challenges

Preserving digital materials faces new challenges in the Digital environment. The details given below:

- Developing standards.
- Determining digital materials.
- Increasing collaborations in digital preservation.
- Ensuring the digital rights.
- Maintaining access to the preserved digital materials.
- Maintaining authenticity & integrity.
- Developing better costing data.
- Funding for digital preservation.
- Increasing awareness about digital preservation.
- Developing skills required for digital preservation.
Digital Resource Preservation Challenges
of these above four emerged as major challenges:
Managing digital resource preservation: Digital Material split up between technical, reader and system services. Sustaining digital materials over time requires ongoing activity and skills.
Funding digital resource preservation: Organizational viability based on an appropriate resources, infrastructure and financial sustainability.
Expertise in digital resource preservation: It is related to lack of professionals with expertise. Education, training, tools & technologies are required to meet the challenges.
Standardization of digital resource preservation: Standard practice need to be applicable to all types of institutions and digital mass storage system should be promoted.
Policy & Procedures

It includes what to keep? how to keep? and how long to keep it?

Policy: It should be made considering selecting digital resources, Metadata, Staff training, Standards etc.

Strategy: It sets out a plan for preserving digital resources. includes Storage environment, Virtual storage systems, Security arrangement, Access criteria, Refreshing, Migration, Preservation equipment etc.

Procedure:
• Short term.
• Medium term.
• Long term.
Strategies & Solutions

The methods that will be used to preserve the digital resources can be categorized as follows:

• Technology conversion.
• Standards.
• Metadata.
• Emulation.
• Encapsulation.
• Auditing.
• Risk Management.
Strategies & Solutions

Risk Management can be viewed as central decision making strategy as depicted in the diagram:
Digital Library Events in Indian Scenario

- **National Mission for Manuscripts**: NMM programme was launched by the Dept. of Culture, Govt. of India in 2003. Its aim is to locate and preserve India’s manuscripts to enhance access & encourage their use for educational research purposes.

- **Digital Library of India**: It provides access to free to read searchable collection of books available to everyone over the Internet. It is the gateway of Indian digital libraries.

- **IGNCA**: It affords a varied documentation of resources such as digital images, audio & video recording, animations, electronic books etc. related to Indian arts and culture.

- **National Library of India**: It carrying out digitization of rare books and brittle documents such as East India company records, diaries, manuscripts on paper & palm leaves.
Digital Library Events in Indian Scenario

• Khuda Baksh Oriental Public Library: It has initiated digitization of Arabic and Persian manuscripts of medieval India.

• National Museum: It undertook a prestigious project of the digitization of the slides and cultural heritage.

• Traditional Knowledge Digital Library: TKDL is a collaborative project between NISCAIR and ISM&H. It proposes traditional knowledge in digitized format covering Ayurveda in five international languages.

• E-Prints at IISC: National Center for Indian Institute in Bangalore hosts e-library facilities and provides full fledged comprehensive set of e-publishing tools.

• Other centers which are working in the field of digitalization are: Centre for Education & Doc., Parliament Library, New Delhi, Digital South Asia library, etc.
Conclusion

These points should be considered for securing future of digital resource preservation.

- Strategic planning and funding.
- Society reorganization and support.
- Inseparable relationship between Preservation & access.
- Librarian, Archivist and computer scientists should work in a coordinated and collaborative environment.
- Technology tools to support digital preservation and access.
- Digital archiving should become ubiquitous.
- Educating society regarding digital preservation.
References

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