Status of Digital Library and its Preservation in Selected Libraries of Assam: Strength, Problems & Trends of Digital

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Abstract

In Library and Information Science, the application of information technology has provided wider opportunities in archiving and accessing knowledge in digitized form besides conservation and preservation of traditional knowledge. Digitization of materials will provide enhanced access to electronic information sources and users can access digital content irrespective of time and space boundaries.

This paper aims to study on digital library and its preservation, the main purpose of this study is to identify its strength, problems and trends. A survey has been carried out among different libraries of Assam. To collect the data a questionnaire method has been used. This paper also tries to give a glimpses of digital library initiatives in India taken from its very beginning.

Keywords: Digital Library, Digital Preservation, Digital Library Initiatives

1. Introduction

Digital libraries and the digitisation of print materials can preserve resources in art and culture, education, science and technology, literature and humanities, media and entertainment, and cultural heritage and history. In India, a substantial number of libraries and information centres have initiated digital library projects including databases and e-journals, or by digitizing their own archivally-valuable collections.

A Digital Library to be an electronic or virtual resource, which may also be available elsewhere. A digital library may allow either online or offline access to the elements it organizes and houses, and may include multimedia as well as multilingual data.

Digital libraries are the logical extensions and augmentations of physical libraries in electronic information society. Extensions amplify existing resources and services and augmentations enable new kinds of human problem solving and expression. (Marchionini, 1988. Encyclopaedia of Library and Information Science. Vol.63)

The field of digital libraries deals with augmenting human civilization through the application of digital technology to the information problems addressed by institutions such as libraries, archives, museums, schools, publishers and other information agencies. Work on digital libraries focused on integrating services and better serving human needs, through holistic treatment irrespective of interface, location, time, language and system.

2. Digital Library Software and Institutional Repository (IR) Software

The current trend is to install, configure and customize softwares that are capable of performing as digital library as well as institutional repository functions. An institutional repository, generally termed as E-prints archive, is a digital archive of the research output created by the scientists, faculty, research staff, and students of an institution and accessible over the Internet to end-users both within and outside of the institution, with few if any barriers to access. As a facility it consists of hardware, software and procedures to capture, organize, archive, disseminate and manage digital research resources of the institution. IR provides a simple, web-based mechanism to researchers to deposit ('self-archive') and access their research publications. Further, by using the Open Archives Initiative (OAI) interoperability protocol, content in these repositories can be easily shared at metadata level to establish a single-point cross-indexing and search service at national level. The same protocol enables integration of content in these repositories with worldwide cross-archive search services. As more and more research and educational material is 'born digital', institutions and organizations are increasingly realizing the need for a stable place in which such material may be stored and accessed long-term.

A digital library system should address all major digital library related issues such as 'design criteria', 'collection building', 'content organisation', 'access', 'evaluation', 'policy and legal issues' including 'intellectual property rights'. It should provide two important user interfaces: a public user interface for presentation and a metadata creation interface for administration. The system should also provide a powerful search engine and the interface should be easy to navigate and there should be provision for customisation.

There are many digital library softwares available, proprietary as well as open source, and most of them conform to international standards. For eg. VTLS (http://www.vtls.com), ACADO (http://www.transversalnet.com/acado/index.htm) are the commercial ones available and popular in the Indian market. Now days Open Source Software (OSS) are more popular among the library professionals. Some of the popular Open Source Softwares for digital libraries, which are in use internationally, are DSpace, Eprints, and GSDL etc.

Dspace: DSpace (http://www.dspace.org) is a digital repository platform jointly developed by Hewlett- Packard and MIT Libraries collaborating over two years. DSpace provides the basic functionality required to operate an institutional digital repository, and is intended to serve as a base for future development to address long term preservation and access issues. The software could be download, system documentation, installation, configuration and customization guide is available at 'http://dspace.org/technology/system-docs/install.html'.

GSDL: The Greenstone (http://www.greenstone.org) Digital Library Software (GSDL) is a top of the line and internationally renowned Open Source Software system for developing digital libraries, promoted by the New Zealand Digital Library project research group at the University of Waikato, headed by Dr. Ian H. Witten, and is sponsored by the UNESCO. Greenstone provides a way of building, maintaining and distributing digital library collections, opening up

new possibilities for organizing information and making it available over the Internet or on CD-ROM.

Eprints: EPrints is also free software which creates online archives. The default configuration is a repository of the research output of an academic institution. An EPrint archive can be adapted for many more purposes. It has been developed at the University of Southampton in relation to a variety of projects.

3. Digital Library Initiatives in India

The concept of digital libraries in India began in the mid 1990s with the vast use of information technology. In 1996, this concept was recognized during the Conference on Digital Libraries organized by the Society of Information Science at Bangalore.

Most of the digital library initiatives were largely confined to limited use such as subscribing to e-journals, scanning documents and installing them on the intranet. But due to advancement in Information Technology (IT) and ICTs, rapid change has been seen in the libraries of India to use which are confined so far as to the prestigious National institutes such as the Indian Institutes of Technology (IIT), Indian Institutes of Management (IIM), Indian Institutes of Science (IIS) Research Institutes under the control of NISSAT and some special Libraries. Some government agencies and institutions, mostly in the public sector are also engaged in digitization of their libraries in a limited a way. However, it is evident from the initiatives taken so far in this direction that the great potential of ICTs for developing digital libraries has not yet been fully utilized. Some of the important digital library initiatives and programmes initiated across the country are furnished below:

1. 'Archives of Indian Labour' at the V.V. Giri Institute of Labour

2. Indian Institute of Science NCSI

3. Indian Institute of Management, Kozhikode

4. Search Digital Library SDL at DRTC, Bangalore

5. Nalanda Digital library, National Institute of Technology (NIT), Calicut

6. Vidyanidhi Project

7. Million Book Universal Digital library Project

8. Indira Gandhi Centre for the ARTS (IGNCA Digital Library)

9. INDEST, Ministry of HRD, GOI

10. National Tuberculosis Institute (NTI), Bangalore

11. Rajiv Gandhi University of Health Sciences, Karnataka (RGUHS)

12. Traditional Knowledge Digital Library (TKDL)

13. Indian School of Business, Hyderabad

14. Indian Institute of Technology, Kharagpur

15. Indian Institute of Technology, Mumbai

16. IITMK Trivandrum (http://www.iiitmk.ac.in/iiitmk/digitallibrary.htm)

17. National Chemical Laboratory (NCL, CSIR) – Digital Repository

18. Indira Gandhi Memorial Library, University of Hyderabad

19. Khuda Baksh Oriental Public Library

20. Centre for Development of Advanced Computing (C-DAC)

21. Digital Library of Art Masterpieces

4. Digital Library and Copyright

Copyright law protects the legal rights of individuals, groups and society. It supports and helps in enforcement of copyright. The very nature of digital information makes it vulnerable to copyright abuse and with digital libraries growing in numbers and expanding in collections, the copyright implications in the digital environment becomes exceedingly important, particularly in developing and under-developed countries where software piracy is significantly higher when compared to the developed world. The implications of copyright in the electronic environment are discussed by Rao (2003). James (2005) looks at digital libraries and copyright including various issues with respect to the different aspects of digitization and the copyright laws of India. This article points out that technical issues predominate and that legal issues are not given adequate attention in the digitization process.

The primary objective of a digital library is to enhance the digital collection in a substantial way, by strategically sourcing digital materials, conforming to copyright permissions, in all possible standards/ formats so that scalability and flexibility is guaranteed for the future and advanced information services are assured to the user community right from beginning. Issues of copyright, intellectual property and fair use concerns are posing unprecedented array of problems to the libraries and librarians are struggling to cope with all these related issues in the new digital information environment.

5. Objectives of the study

The present study was carried out with the following objectives:

a) To study and identify the current status of digital libraries in Assam.

b) To understand the development of new digital library and its preservation issue.

c) To identify the challenges in the development of digital libraries in Assam.

d) To determine the future trends with regard to the development of existing digital libraries in Assam.

6. Research Methodology

For the present study we have adopted questionnaire method to collect the required informations on digital library and its preservation. We have carried out the survey among different libraries in Assam.

7. Result & Discussions

The survey, which was taken among the five leading institutes of Assam, shows the following results:

7.1. Type of the Software

Figure 1 shows the type of software use in five selected libraries of Assam. Among them A.U., IASST, G.U. (in planning stage), are using D-space software for digital library, and KKHSOU is using software which is designed in HTML, and NLUJA is planning to use Google site.
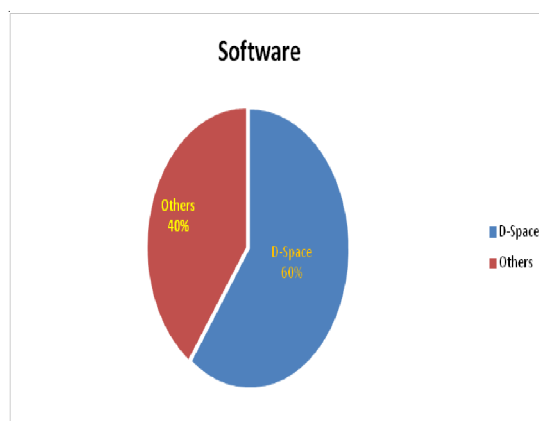

Figure 1: Type of the software

7.2. Total Collection and No. of total Digitized Document

Table No.1: Total Collection

Sl. No.	Name of the Institutions	Total collection	No. of digitized document
01.	Assam University(AU)	125000	N/A
02.	Gauhati University (GU)	300000	N/A
03.	Institute of Advance Studies of Science & Technology (IASST)	8800	400
04.	Krishna Kanta Handiqui State Open University (KKHSOU)	15600	500
05.	National Law University & Judicial Academy (NLUJA)	9000	N/A

Table 1 shows the total collection of the institutes and the number of digitized documents. G.U. has the highest collection of documents where IASST has the lowest. And the highest number of digitized documents is in KKHSOU and lowest in IASST.

7.3.   Strength of the Digital Collection

Table No.2: Strength of the collection

Sl. No.	Name of the Institutions	Strength of digitization		
		Born digital	Turn digital	Gain digital
1.	Assam University(AU)	-	-	-
2.	Gauhati University (GU)	-	Yes	-
3.	Institute of Advance Studies of Science & Technology (IASST)	Yes	-	-
4.	Krishna Kanta Handiqui State Open University (KKHSOU)	-	Yes	-
5.	National Law University & Judicial Academy (NLUJA)	Yes	-	-

Table 2 shows the strength of their digital collections in surveyed libraries. They represent born digital and made digital collections; there are very small digital collections available in these libraries.

7.4. Availability of IT Equipment in the Library

Table No.3: IT equipments

Sl. No.	Name of the Institutions	IT equipments				
		Computers	Servers	Printers	Scanners	Others
1.	Assam University(AU)	50	1	7	2	0
2.	Gauhati University (GU)	50	2	3	1	0
3.	Institute of Advance Studies of Science & Technology (IASST)	13	2	4	2	0
4.	Krishna Kanta Handiqui State Open University (KKHSOU)	11	1	3	2	7
5.	National Law University & Judicial Academy (NLUJA)	5	1	3	1	2

Availability of IT equipments shows in table 3. According to the table, the highest number of IT equipment is available at A.U. and the least is in NLUJA.

7.5.   Infrastructure Facilities available in Libraries

Table No.4 : Infrastructure facilities

Sl. No	Name of the Institutions	Infrastructure facilities				
		Internet	Air Conditioner	Space	Furniture	Others
01.	Assam University(AU)	√	√	√	√	√
02.	Gauhati University (GU)	√	√	√	√	√
03.	Institute of Advance Studies of Science & Technology (IASST)	√	√	√	√	√
04.	Krishna Kanta Handiqui State Open University (KKHSOU)	√	√	√	√	Dehumifier(4)
05.	National Law University & Judicial Academy (NLUJA)	√	√	√	√	√

Table No. 4 shows the availability of infrastructure facilities in digital library such as internet, AC,space,furniture etc.Most of the surveyed libraries have the basic infrastructure needed for a digital library.
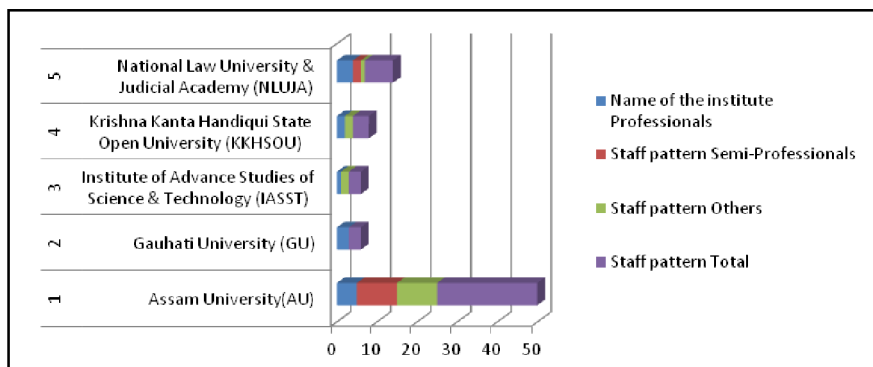
7.6. Availability of Trained Staffs

Figure No.2: Trained staffs

Figure No.2 displays the staff categories such as professional, semi-professionals and other skilled staff. A.U. has reported the highest value of all categories of skilled staff.

7.7 Preferences given to the type of Collection

Table No.5: Preferred Collection

Sl. No.	Name of the Institutions	Types of the collection				
		Special	Rare	Theses	Manuscripts	Other collections
1.	Assam University(AU)	-	-	√	-	√
2.	Gauhati University (GU)	-	√	√	√	√
3.	Institute of Advance Studies of Science & Technology (IASST)	√	-	-	-	√
4.	Krishna Kanta Handiqui State Open University (KKHSOU)	-	-	√	-	√
5.	National Law University & Judicial Academy (NLUJA)	√	√	√	√	√

Table No. 5 shows the preferences given to the types of documents.It is found that highest to lowest preferences given to Theses, special, rare collections and manuscripts respectively.KKHSOU is also giving importance to other collections like Institutional report, Audio Programmes, Video programmes, Self Learning Material etc.

Reasons behind giving preferences to these collections are as follows:

a) To preserve for the posterity

b) To enhance the life of hard copy

c) To save space for storage

d) To provide access to the institutional resources to the outside world.

7.8. Problems & Challenges faced by Libraries

Table No.6: Problems & Challenges

Sl. No	Reasons	Institutions
1.	Not enough budget allocation	G.U., A.U.
2.	Lack of skilled staffs	IASST
3.	No infrastructure facilities available	-
04.	No demand for the service	G.U.,A.U.
05.	Lack of top management interest	A.U.
06.	Fear of modern technology	-

Table No.6 shows the problems and challenges faced by the libraries under study to create a digital library. The main problem faced by A.U. and G.U. libraries are "not enough budget allocation" and "no demand for the service" where as IASST is facing "lack of skilled manpower". A.U. has faced the lack of top management interest in developing digital library.
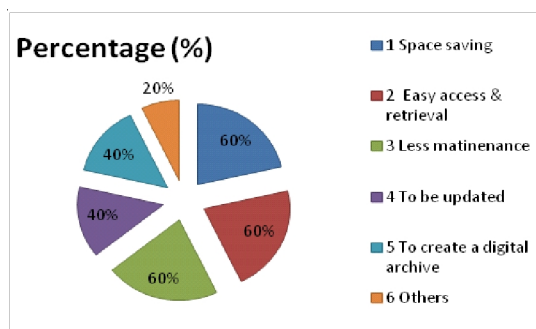
7.9 Purposes of Digital Preservation

Figure No.3: Purposeof digital preservation
** (Multiple options allowed)

7.10. Measures taken to preserve Digital Collections

Table No.7: Methods of Preservation

Sl. No.	Name of the Institutions	Methods of Digital Preservation				
		Microfilm	CD-ROM	DVD's	Hard disk	Others
1.	Assam University(AU)	–	–	–	√	–
2.	Gauhati University (GU)	√	–	√	√	–
3.	Institute of Advance Studies of Science & Technology (IASST)	–	–	–	-	External Hard disk
4.	Krishna Kanta Handiqui State Open University (KKHSOU)	-	-	-	-	External Hard disk
5.	National Law University & Judicial Academy (NLUJA)	-	-	-	-	-

** (Multiple options allowed)

Table No.7 shows the methods of digital preservations. Libraries are using Microfilm, DVD's, Hard Disk and External Hard Disk for this purpose.

7.11. Future Trends

It is found in the survey that all five surveyed libraries want to create an institutional repository,

a) Buildup a complete digital library
b) Digitize special collections
c) Digitize rare collections
d) Buildup an institutional repository
e) Create a digital archive
f) Provide access to digital library through the internet

8. Conclusion

The Library which is already computerized is undertaking digitization to some extent but self generated databases cannot be called digitization in practical sense. The document in text, visuals, audio, video or multimedia, which are speculatively selected, converted in digital format stored and displayed on a larger platform can be called digitization.

Digital libraries and digitization are crucial for disseminating and preserving knowledge. Digital library activities are gathering momentum in developing countries, especially in India. The study reveals that in Assam there is no full fledged digital library.Some of the libraries have taken steps to develop their libraries.

Digital library play a vital role in the library and information centres. Information is easily collected, stored, disseminated quickly as it is in machine readable form. Multi user can access the same database simultaneously. Computer literates in Assam are still less in number especially in library and information field. So there is a need to impart computer literacy skills to make the members acquainted in using digital collections.. Digital libraries are satisfying the user needs and provide various services.

References

1. Anandan, C.S. Digital libraries from technology to culture.New Delhi: Kanish Publisher, 2005.

2. Varatharajan, N., Chandrashekara, M., Digital Library Initiatives at Higher Education and Research Institutions in India, Library Philosophy and Practice, 2007 (December).

3. Ramesh Babu, V.P. (ed). Quality of Library and Information Services In Higher Education A Global Scenerio. New Delhi: Kanishka Publisher, 2011.

4. Vickery, B.C. Information System. London: Butterworths, 1973.

5. Lalu, B. T. Information Needs Information Seeking Behaviour and Users. New Delhi: ESS ESS publication, 2002.

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