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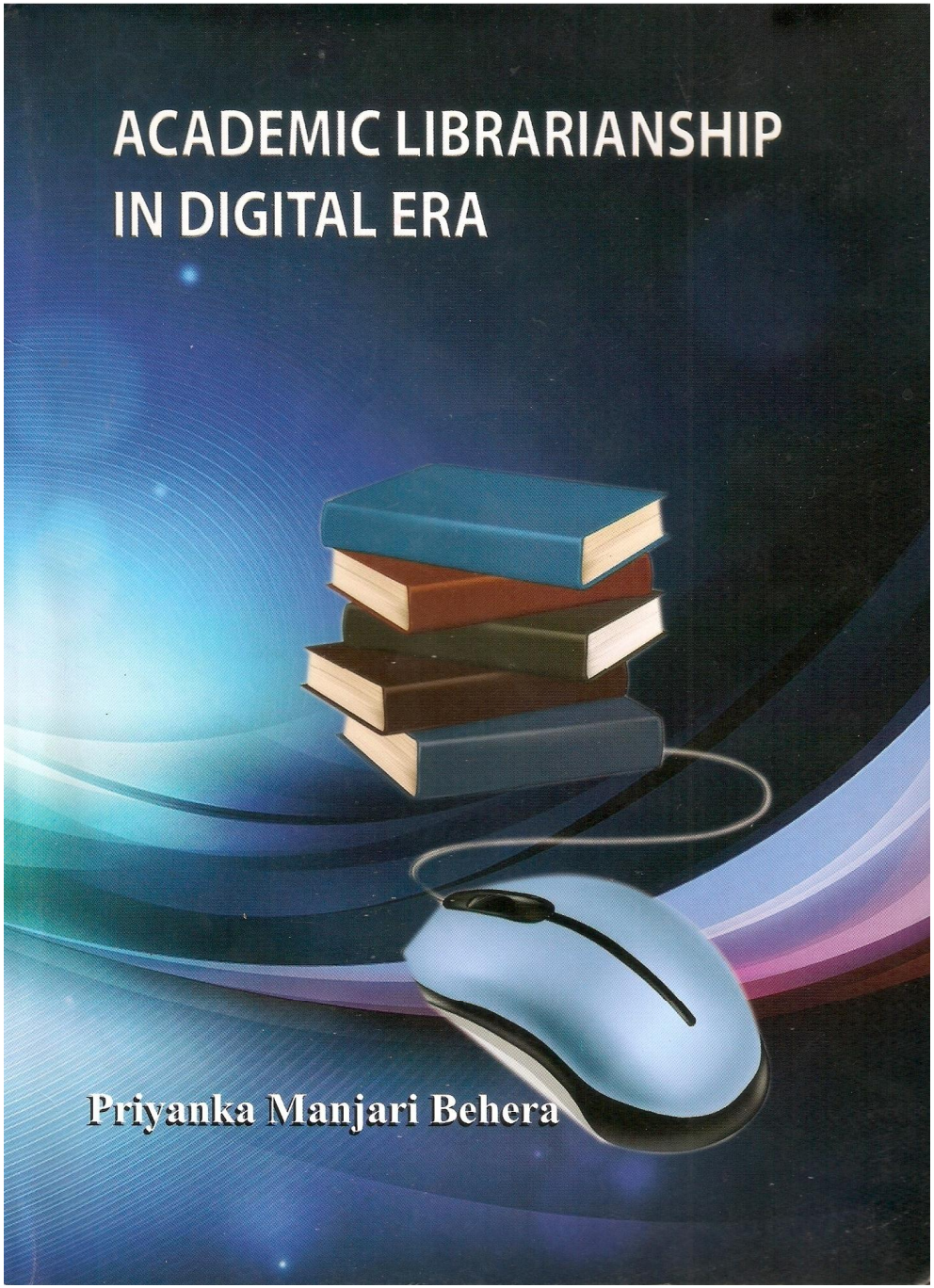

Academic Librarianship in Digital Era

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Reproprint (P) Ltd.
Bhubaneswar, Odisha
2014

Academic Librarianship in Digital Era

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First published, 2014

Papers Presented in UGC Sponsored National Conference held at U.N. (Auto.) College of Science and Technology, Adaspur, Cuttack.

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Cover design by : Mr. Ajaya K. Mohanty

ISBN : **81-88897-14-0**

Price : Rs. 600/- (India), $ 10 (Foreign)

Published by **Reproprint (P) Ltd.**, N-5/44, I.R.C. Village, Nayapalli, Bhubaneswar - 751 015, Odisha, India

Printed at **Reproprint (P) Ltd.**, N-5/44, I.R.C. Village, Nayapalli, Bhubaneswar - 751 015, Odisha, India, **Ph. : 0674 - 2552066 / 2550642**

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DIGITAL ARCHIVAL INITIATIVE OF LIBRARY

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Abstract:

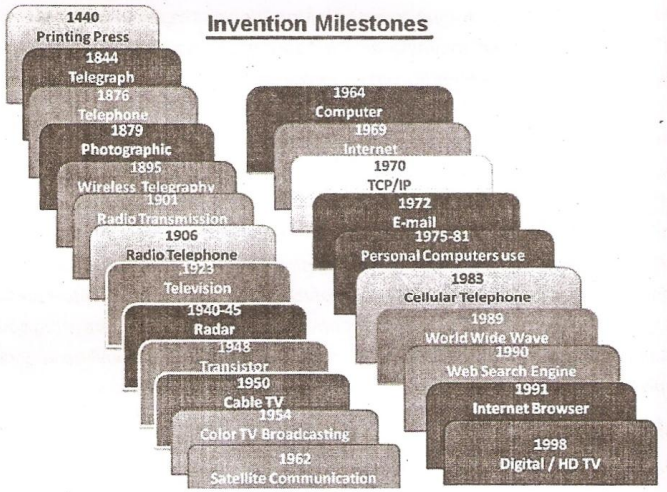
"Digital Archival" is the digital form of archival. In other words "Digital Archival" means organizing, preserving, and providing access to information and material in digital way. "Digital Archival" is very synonymous meaning to "Digitization". These archival (interesting archive material) related services are merely used in Library and Information Centre. Hence this study on "Digital Archival" is a Study of "Digital Library". Since the invention of printing technology, the knowledge and information were preserved in printing form, but now a days it can be stored in electronic forms also. The concept of library is not only to preserve, process information/knowledge through print sources (books, journals, newspapers etc.), but also to electronic forms (e-books, e-journals etc.). The Internet has added new dimensions to Information Technology and knowledge sharing platforms such as Digital Library, E-learning, Knowledge management etc. Since the ICT revolution, there has been a rapid development in libraries with facilities to access by anyone at anytime from anywhere. As the digitalization of information and the no of digital libraries steadily increasing, the day will be very near when the complete breakthrough of digital libraries into the Gutenberg Galaxy.

Keywords: Digital Archival, Digital Archives, Digital Library, Gutenberg Galaxy, Digitalization, E- Books, E-Journals, Internet, Library Networks, invention, Innovation, collection development

Introduction:

In 21st century, the invention of new technologies has fulfilled the dreams of human life. Here Impossible become possible and Imagine gives real sign day to day. After the inventions of printing press in 1440 AD by Gutenberg, printed materials have been used which are made available by the systematic efforts of the Authors, Researchers, Publishers, Booksellers, Librarians and Users. Communication has become ever more widespread due to emergence of new technologies and invention of electronic communication. After the advent of Information Technology (IT) the situations began to change, the printed information started to be digitized and made available to use through the help of computer devices and networks. The pace of globalization and the growth of new technologies, such as the internet, have

changed the teaching learning methods in schools, colleges, universities and research institutes. Study will be easier as well as better in coming decades where one can learn in his own time and own place through virtual institutes. There is a great impact on all professional aspects, particularly in knowledge and information sector during ICT revolution in the last decade. The information revolution and the application of Information Communication Technology (ICT) have initiated digitization process in the educational institutions and take the lead role in the growth and development of human beings.



Digital Archives and Archival:

Archive is a place of storing data/information of historical records. Where the Archive works in digital environment it is known as "Digital Archive". The functions are digital in a digital archive. It stores and serves the data in digital form. On the other hand, "Digital Archival" is the digital form of archival process of information, document and material i.e. reorganizing, preserving, providing access in digital way.

Definition: The Longman Dictionary (Longman Dictionary of Contemporary Enghish.4th ed.2003.) also define archive as "Technical Copies of a computer files that are stored on a

disk or in the computer's memory in a way that uses less space than usual so that the computer can keep them long time" It refers to a digital way of preserving data/information/ knowledge which has been preserved through Digital Library.

Archival is the adjective form of archive, which means interesting archive materials. (Longman Dictionary of Contemporary Enghish.4th ed.2003.) An archive is a place where public and historical records are kept (Webster's Comprehensive Dictionary. Encyclopedic Ed. 2004). In general, archives consist of records that have been selected for permanent or long-term preservation on the grounds of their enduring cultural, historical, or evidentiary value. Archival records are normally unpublished and almost always unique, unlike books or magazines for which many identical copies exist. This means that archives are quite distinct from libraries with regard to their functions and organization, although archival collections can often be found within library buildings. The plural form archives is chiefly used when referring to historical records or the places they are kept. The computing use of the term 'archive' should not be confused with the record-keeping meaning of the term.

History of Archives: The word archive originally developed from the Greek word arkheion, which refers to the home or dwelling of the Archon (chief magistrate), in which important official state documents were filed and interpreted under the authority of the Archon. Study the history of Archives on Wikipedia (http://en.wikipedia.org/wiki/Archive), Government archives include those maintained by local and state government as well as those maintained by the national government.

National Archives: In the United States, National Archives and Records Administration (NARA), maintains central archival facilities in the District of Columbia and College Park, Maryland, with regional facilities distributed throughout the United States. In the UK the National Archives (formerly known as the Public Record Office) is the government archive for England and Wales. The National Archives of Scotland, located in Edinburg, serve that country while the Public Record Office of Northern Ireland in Belfast is the government archive for Northern Ireland. The French Archives Administration in the Ministry of Culture manages the National Archive. In Taiwan, the National Archives Administration is located at Taipei. In India the National Archives (NAI) is located at New Delhi.

Academic Archives: Academic Archives (Wikipedia) in colleges, universities, and other educational facilities are typically housed within a library. An academic archive contains items such as the administrative records of the institution, papers of former professors and presidents, memorabilia related to school organizations and activities, and items the academic

library wishes to remain in a closed-stack setting, such as rare books or thesis copies. The study and practice of organizing, preserving, and providing access to information and materials in archives is called archival science. The physical place of storage can be referred to as an archive, or repository. A person who works in archives is called an archivist. Hence Archival means to the services of an archive like organizing, preserving, and providing access to information and material.

Digital Library: An Overview:

The Digital Library represents digitized version of basic components of library i.e. books, documents, retrieval system, archival, information processing, dissemination and stand alone/ shared access mostly aided by or unaided by the information worker. Thus digital library evokes an impression of change perspective of carrying out information sources, acquisition policy, methods of storage and preservation, approaches to technical process like classification and cataloguing, modes of interaction with information resource by the users, communication system, networks and dramatic shifts in intellectual, organizational and economic practices. Digital libraries contain diverse collections of information for use by many different users. Digital libraries range in size from tiny to huge. They can use any type of computing equipment and any suitable software.

Definition: According to Michel Lesk (1997), "Digital Libraries are organized collections of digital information. They combine the structuring and gathering of Information, which libraries and archives have always done with the digital representation that computers have made possible. Digital Information can be accessed rapidly around the world, copies for preservation without error, stored compactly and searched very quickly. A true digital library also provides the principles governing what is included and how the collection is organized". Gladney et al. gave the most comprehensive definition of the digital library as "A digital library is an assemblage of digital computing, storage, and communications machinery together with the content and software needed to reproduce, emulate and extend the services provided by conventional libraries based on paper and other material means of collecting, cataloguing, finding and disseminating information. A full service digital library must accomplish all essential services of traditional libraries and also exploit the well known and advantages of digital storage, searching and communication". Oppenheim and Smithson lays emphasis on digital technology and said that "Digital Library is an information service in which all the information resources are available in computer processable form and functions of acquisition, storage, preservation, retrieval, access and display are carried out through the use of digital technologies". Gladney et al. gave the most comprehensive definition of

the digital library, "A digital library is an assemblage of digital computing, storage, and communications machinery together with the content and software needed to reproduce, emulate and extend the services provided by conventional libraries based on paper and other material means of collecting, cataloguing, finding, and disseminating information. The virtual Library is known as digital library or e-library. Terence R Smith (1997), defined digital libraries as "Controlled collection of Information Bearing Objects (IBO) that are in digit form and that organized accessed, evaluated and used by means of heterogeneous and extensible set of distributed services that are supported by digital technology"

The Components of a Digital Library:

The Components required for a digital library can broadly be divided into the following five categories:

1. Collection Infrastructure: The most important component of a digital library is the digital collection it holds. The viability and extent of usefulness of a digital library would depend upon the critical mass of digital collection it has. The collection in a digital library would consist of
   - ❖ Collection acquired in digital media (CD ROM/DVD ROM, magnetic media etc.)
   - ❖ Access brought for the external digital collections
   - ❖ Converting datasets that has born digital
   - ❖ Conversion of existing print media into digital format
   - ❖ Creating portal sites or gateways to the electronic collections available on the web.
   - ❖ Providing integrated access interface.
2. **Access Infrastructure:** Consisting of search and browsing infrastructures, information retrieval in digital library and portal or knowledge gateways.
3. **Computer and Network Infrastructure:** A typical digital library in a distributed client server environment consists of hardware and software components at server side as well as at client's side. Lot of software products are available in the market place.
4. **Digital Resource Organization:** There is a need to organize digital sources in a scientific manner with international standards. The concepts of URL, persistent URL, Universal Resource Name (URN) and Digital Object Identified (DOI) need to be taken into consideration. There is a necessity to have uniform resource characteristics or metadata in digital library.

5. **Manpower Resource:** Digital Libraries need Digital Librarians. There is a need to completely restructure the library and information science portion so as to provide effective training to the potential LIS manpower in the new digital environment. On the other hand, there is an urgent need not only to impart training to the existing professionals, but also to motive them to accept the challenges put forth by the new technology.

Value & Advantage of Digital Archival:

Digitization is a labor-intensive process by which physical or manual records are converted into digital form. Data digitization services offer a very good opportunity for India, due to the relatively lower costs and availability of technical skills. The Geographical Information system (GIS) is a collection of tools and methods that are used in a digital environment for the study of spatial information. Most libraries today are reevaluating their information delivery services in this new world of digital information and many are contemplating the digitization of collections within their own holdings for a wide variety of reasons and purposes.

The technology available today is capable of establishing the digital libraries which can greatly enhance their services, skills and prestige.(Sarah Kim. Digital archives research blog).Recently, many IT companies are offering cloud computing services as massive data storage (http://personaldigitalarchives.blogspot.com/). IT researchers and practitioners often call cloud computing a new paradigm for computing. In fact, many people are already using cloud services to conduct their work and/or non-work related activities i.e. Gmail, Google Docs, Dropbox and many other. Cloud storage has a potential as a future platform for personal digital archives as well as digital storage of memory (Institutions-Interesting survey results of National Digital Stewardship Alliance member preservation storage systems)

Scope of Digital Archival:

Archiving of digital documents can be categorized as the following two types. One is already found in digital format and the other is found in physical format which required to be digitized. The scope of digital archival is under the following categories. A few documents are for personal use, known as personal digital archiving, and a few are for public use, known as Library digital archiving.

Already Digital Document

- Digital Photographs
- Digital Audio

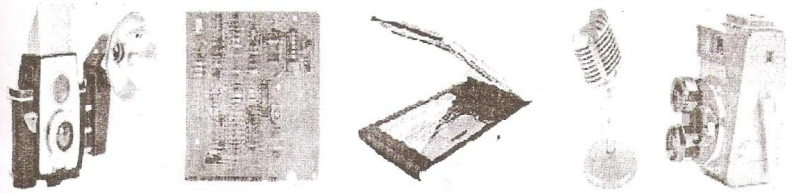
- Digital Video
- Electronic Mail
- Digital Records
- E-books
- E-Journals
- Video lectures
- Video conferences
- Websites, Blogs and Social Media

To be digitalized Document

- Manuscripts
- Research Paper/Project/Thesis
- Conference Papers
- Lecture Notes
- Previous year Question Papers
- Office Records
- Annual Reports
- Rare printed materials (Books, Journals)

Digitization Process and Archiving:

Digital Archival refers to the preservation of digital data. Nowadays publishers publish documents both in printed and digital form as their customers need. But the traditional printed materials need to be digitized first before its preservation. So here, a device is needed to change the physical document to digital form. It may be a scanner, camera, video recorder, tape recorder, microphone, transistor etc.



Digitization Tips:

- ✓ Prepare the device and the documents
- ✓ Select the device setting
- ✓ Record and save
- ✓ Access and storage

Archiving Tips:

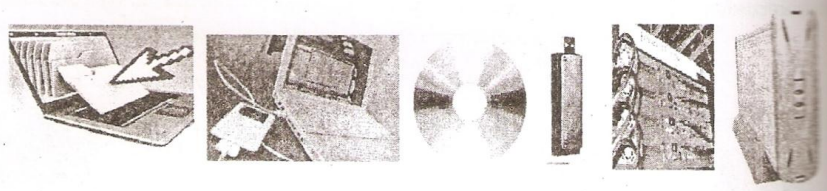
- ✓ Identify where is the digital documents
- ✓ Decide which documents are most important
- ✓ Organize the selected documents
- ✓ Make copies and store them in different places

The Life of Digital Storage Media:

All digital storage media have a short life. This is why digital preservation requires active management, including regular migration of content from older storage devices to newer devices.

The life of storage media are cut short by at least three factors:

- ✓ Media durability
- ✓ Media usage, storage and handling
- ✓ Media obsolescence



Media durability: Computer storage media devices vary in how long they last. The quality and construction of individual media items differ widely. The following estimates for media life are approximate; a specific item can easily last longer--or fail much sooner.

Media usage, storage and handling: People have a direct impact on the longevity of storage media:

- The more often media are handled and used, the greater the chance they will fail; Careful handling can extend media life, rough handling has the opposite effect.
- Stable and moderate temperature and humidity along with protection from harmful elements (such as sun and salt) helps to keep media alive.
- Good-quality readers and other hardware media connections are beneficial; poor connections can kill media quickly.
- Media that are not labeled or safely stored can be lost or accidently thrown away.
- Fires, floods and other disasters are very bad for media.

Media obsolescence: Computer technology changes very quickly. Commonly used storage media can become obsolete within a few years. Current and future computers may not:

- Have drives that can read older media.
- Have hardware connections that can attach to older media (or media drives).
- Have device drivers that can recognize older media hardware.
- Have software that can read older files on media.

Requirement of Digital Library:

Digital Libraries can help move the nation towards realizing the enormously powerful version of any time-access to the best and the latest of human thought and culture, overcoming all geographical barriers. Digital Library becomes so important for India, several ministries, institutions, NGOs, private bodies and other have initiated national and regional level capacity building initiatives on digital library. Digital libraries are of great importance in India, but it faces tremendous shortage of good libraries which affects the learning of students/ scholars to a great deal. Hence it is necessary to create consortium of Libraries region wise in the country in order to share the information which these libraries have. Therefore, it is necessary to think of creating consortium of libraries at the national level. New products, technologies and opportunities continue to emerge, however and the future of e-books looks bright, especially if easier on-screen reading and more flexible, customer-oriented, licensing can be realized (John Cox).

Where the content matches the need, the e-book can support the academic mission effectively, saving time and adding values as a collective online reference sources rather than a set of individual titles. The academics need various types of databases both off-line and on-line. These databases provide the users required information in conducting their studies. Various electronic resources, such as e-books, e-journals etc. are also widely available in the present time with the advancement in electronic publishing. Many journals are now available only in the electronic form. Accessing such resource is inevitable for the academic community to update their knowledge.

Development of Digital Library:

In the mid 1990's a change began which ultimately developed into what is collectively known as the Internet. The National Science Foundation (NSF) is a U.S. government agency whose purpose is to promote the advancement of science. In 1985, this organization connected five supercomputers around the country with a high-speed communications network. Internet is becoming the most important source of information with the exponential growth of digital information. The internet has emerged as a boom to the academic community by facilitating access to a treasure of information on the web, which can be used for study, teaching, and research.

The use of computer network in our country has come of age now. With the advancement of ERNET, (sub-network of SIRNET), DELNET, NICNET, INFLIBNET and e-mail has gained acceptance and popularity. The networks have become an indispensable mode of information seeding and distribution in a number of campuses and laboratories. Certainly, the infrastructures yet to catch up with the demand and to provide internet access to all the institutions that require it. The library professionals have to upgrade their professional skills in order to exploit the opportunity and be able to use the digital libraries for the benefit of the user community. The internet and other advances in information technology have ushered India into an era where various services can be delivered remotely.

DELNET Developing Library Network (Formerly Delhi Library Network) was initiated in January 1988 by the India International Centre. It is the first operational library network in India. It was started as a project of the India International Centre with the financial and technical assistance by National Information System for Science and Technology (NISSAT), Department of Scientific and Industrial Research, Govt. of India. It was registered as a society in June 1992 under the Societies Registration Act of 1860 and is currently being promoted by the National Informatics Centre (NIC), Planning Commission, Govt. of India and India International Centre, New Delhi

Conclusion:

A digital library can serve users satisfactory service and prove the five laws of Library Science. People can access their required information/documents, anytime and anywhere. Digital archival makes it possible for the libraries. Through digital archiving the documents have been become much more powerful than before. It storages /saves for long time, easy to carry, a little space to storage, accessing anytime/anywhere from multiple access points, and economic expenses etc. Digital archival brings a new era for library and information science, which not only satisfy the users but also satisfy the library the library and Information professionals.

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