DIGITAL LIBRARIES: A PRACTICAL APPROACH

Mrs. Manisha Yogesh Rane.

Assistant Librarian, KIT's College of Engineering, Kolhapur, Maharashtra.

ABSTRACT:

The paper gives a brief description of digital library. It highlights the point like need of the digital library, characteristics of the digital library as well as criteria of selecting material for digitization and also   new challenges are explained here. In the technological development the role of the librarian should be changed very much. The librarian should also adapt themselves according to changing ICT techniques and tool to provide the users optimum services. With the availability of several free digital Library software packages the creation and sharing of information through the digital   library collections has become an attractive and feasible proposition for library and information professionals. Advantages – disadvantages as well as the myth or reality of digital library in India also discussed in this paper.

Key words : Digital Library, Need of digital library, components , ICT effect ,services of digital library, changing role of the Librarian, Material selection for digitization, Technology obsolesces, myth or reality, Techno skilled personnel.

INTRODUCTION:

Library is a social Institution with scared responsibility of collecting, organizing, preserving and disseminating knowledge. The emergence of new technologies and users dem and has great impact on the present and future libraries. IT is generic term used to denote the various abilities such as processing, storing and communication of the information. IT revolution has changed the traditional library into computerized library that is into electronics library that means into digitized library. Internets, WWW has given a new dimension to the library and have provided opportunities to access and retrieve online electronics/digital information. Digital library is popularly viewed as an electronic version of a library. Digital libraries are the outcome of the information explosion. The invention of CD-ROM in 1980s was a turning point in the digitization of the information. For some, digital library is simply computerization of traditional libraries. But to computer professional, a collection of distributed information service, digital library is an organized collection of digitized material including text, images, video and audio along with method for access and retrieval.

DEFINITION OF THE DIGITAL LIBRARY
According to the Larson ; "Digital Library as not a single, stand able and repositories, of digital data. Instead, they are a heterogeneous collection of network based repositories using a variety of protocols for user's interaction, data encoding and transmission."

The Working Group of the US Government's Information infrastructure Technology and application defined "Digital Library as the system' providing user with a coherent access to a very large organized repository of the Information and knowledge".

The American Digital library Federation has defined as "Digital Libraries are organization that provide the resources, including the specialized staff to select, structure offer intellectual access to interpret, distribute, preserve the integrity of, and ensure the persistence over time of collection of digital works so that they are readily and economically available for use by a defined community or set of communities".

According to Griffin, "An organized collection of multimedia data with information management methods. They represent the data as useful information and knowledge to people in a variety and organizational context".

The definition of the Digital library can be given a set of characteristics as follows: The Digital Library is:
1. Collection of services
2. Collection of Information objects
3. Supporting users with Information objects
4. Organization and presentation of these objects
5. Available directly or indirectly
6. Electronics / Digital availability.

NEED OF DIGITAL LIBRARY :

There are number of reasons of building up digital library such as information explosion, dwindling budget of library, high information dem and, advance Information technology etc. There is no physical boundary and document is more accessible from anywhere. People from all over the world can gain access to same information 24x7x365 as long as the internet connection is available. Digital library allow the users to search full text or to serve more users than envisaged in remote location. It's very easy to convert the document into different format such as audio/video, images in slide show etc. Digital library can provide programmatic solution to the problem faced by traditional libraries in managing their print based collection like time barriers, space problem, preserve and retrieve the document. Through appropriate metadata and information exchange protocols the digital library can easily share information with other similar digital library and provide enhanced access to user. The world wide web and other web based technologies, user friendly interfaces advances in online storage technologies etc increase the need of digital library.

CHARACTERISTICS OF DIGITAL LIBRARY:

1. Digital library is the combination of traditional and media collection. Digital library consist mostly electronics documents.
2. Digital library is a digital objects which may be text, audio visual images and numeric multimedia components.
3. Digital Library can be accessed from users work place.

4. Digital Library support formal and informal learning procedure.

5. Digital Library provide remote to rare and expensive materials.

6. Digital Library will also include all processes and services that are given in traditional processes – The professionals supposed work in digital library should have necessary training in h and ling digital information to provide optimum level of effective services.

7. Digital Library will require both the skills of librarian as well as those of computer professional to be viable.

SERVICES OF DIGITAL LIBRARY:

- Book Circulation Inter library loan Photography of documents
- On line – Off line reservation users membership, user's queries
- Reference support for subject search
- CDROM database, externally purchased database Internally purchased newsletter, reports and journals Access to library catalogue (OPAC) , database and internet
- Central storage facilities for hosting digital collections and indexes
- Flexible methods of submitting request e.g. via telephone, facsimile, email
- Advanced librarian with ICT concern User education and training programmes CAS, SDI and publisher awareness services Electronics reference desk
- Assistance with bibliographic package

Components of Digital Libraries :

Hardware/ Software requirements: 24 Hours Internet connectivity , LAN or WAN, Storage Media : high power hard disk, Digital Camera, Converters, Multimedia Interface, Data system security network, Linux/Windows operating system, Computer Server Scanner, Wi-Fi tower and CDs, Printer, High power UPS, Digital Library software like – Greenstone, Dspace, E-print, Fedora or commercial

DIFFERENT STAGES IN DIGITIZATION THE DOCUMENT:

Cornell University Library/Research Department (2000) provides six stages in digitizing documents for Digital library:

1. Registering : There is the need to first register the large number of the document and use filing system to keep their track. There is risk of losing electronics version of file misnamed saved in the wrong sub directory. A good filing system is vital so that everyone in digitizing team knows what he is supposed to do and he can h and le the work in the absence of another person.

2. Scanning Document : It make sure that the document is in right condition; if not try to find fresh copy. To avoid damage of the document, you can photocopy each page and feed in the photocopy through the scanner, though this uses a lot of paper and reduce the quality of the scan.

3. Optical Character Recognition (OCR) : OCR software converts a scanned image into a text file that word processor can read. You should use the OCR software that is specified for language.

4. Proof Reading : The word processor's spell checker will help in spelling errors. Mark any correction on the print put of the scanned copy then enter them into computer,

5. Reformatting : There may be also need to change the typeface, heading style and so on, to make the document more attractive and readable. Alternatively, you may be able to adjust the setting of your OCR program to preserve the layout of the page.

6. Final Version: For many documents, there is a need to add some information to the text so that readers can identify it easily. For a book the book title, the author or the editor, the publisher and the publication date as well as chapter in a book, you should include. As for the journal articles title, the date, the volume and the issue number, the article title and the authors and the page numbers in the original printed journal should include. In other words there is the need to add Metadata to describe each document.

Issues for Selecting the material for Digitization :

Selection of the material is one of the most important and complicated issues in digitization. Factors given by National Digital Library Program (NDLP), that influence selection for conversion include Uniqueness of the material, synergy with other activities in custodial division (such as preservation), the availability of suitable digitizing technology and the value of the material for education. There are many organizations like library of Congress, University of California, Columbia University, Cornell University, National Library of Canada, National Agricultural Library USA, Perry Library etc. have discussed the selection criteria for the digital conversion.

The most common issues in the selection of material for digitization are as :

1. Value of the material: It is important to see the criteria as a part of an integrated whole of the selection process and to see the selection in the context of whole digitization process. Digitized collection must have value to community, better access to broad public and uniqueness in the collection. Library is going to spend time and money to digitize a collection so it should provide greater added value to the original material.

2. Dem and for the material: While selecting material the importance of users should be taken into account. The value of the collection depends upon how frequently the reading material used by the user. Material used less frequently than every ten years cannot be considered useful. But this does not mean that the material is not valuable. The selection of the material depends only on current high priority of it but also the intellectual content of the collection should be considered.

3. The Nature of the source material: The physical condition of item including its size, shape, colour as well as preservation technique like microfilming, life span, effect of scanning on original material etc. these criteria should keep in mind for digitization material. Even though some material is not in dem and but its physical condition it requires to digitize them for future anticipated use.

4. Copyright : One of the "Single most vexing" barrier to digital library development will be the copyright status of the original material. The current paper based concept of copyright

breaks down in the digital environment because of digital objects is less fixed, easily copied and remote accessible by multiple users simultaneously. Libraries are simply care taker of the information so library will ever be able to freely digitize and provide access to the copyrighted material in the collection. They have to develop mechanism for managing copyright.

5. Cost : The financial cost like overhead, staff, labour equipment and long term maintenance of infrastructure that forces libraries to make proper selection decision for digitization of the material. The long term maintenance of the digital images and associated metadata as a part of project cost, so it is the best to plan well in advance while selecting the material to digitize.

6. Technology obsolesces: Technology obsolesces represents a threat to the information in digital form than the inherent physical fragility of many digital media. Tapes, hard drives, floppy discs have a very short life span. Over the long term, material stored on older media could be lost because there will be no longer the hardware or software to read them. Thus libraries will have to keep moving digital information from one format of storage medium to another advanced preserving medium i.e. data migration. However, there are difficulties here too data migration is so much costly. There are as yet no common standard for the use of digital media as a preservation medium and it is unclear whether digital media are as yet up to the task of long term preservation. Digital preservation standard will be required consistently to store and share material the digital material.

7. Technical Architecture/Infrastructure   :   Libraries need to enhance and upgrade current technical architecture such as; high speed local network and fast connection to Internet, Relational database that supports a variety of digital format, Full text search engines to index and provide access to resources, a variety of services such as web services and FTP servers, Electrical Documents. All these technical things should be provided by Institutional authority to the library so that the digitization process can move smoothly.

Access to a digital library collection can be provided on-line or off-line. In On-line access client uses a web browser on a desktop computer or laptop and access the collection by connecting to the digital library website over the Internet. In Off-line access, the digital library is not accessible over a network. The digital library collection should be   distributed the digital library on a CD-ROM.A digital library project would require equipment like Server computer, Desktop computers, Digitization equipment, Network   connectivity.   The Digital   library software works with the web server in providing various digital library functionalists including creation, organization, maintenance, indexing, search and retrieval. In choosing the software, the factors should be considered i.e. document types,   customized metadata, Collection administration, standards like Dublin core metadata, Multi-lingual support. Several free digital library software packages are now available which could facilitate the easy creation and sharing of information through digital library collections. Examples of open source free digital library software are : Greenstone Digital Library software by New Zeal and Digital Library; Academic Research in the Netherlands On-line (ARND); Tilburg University, The Netherlands; CDSware; CERN Document server software, Geneva, Switzerland ; D-space; MIT Libraries, Cambridge, MA USA. Etc.

8. Personnel : It is important to assign the personnel with the right skills and attitude to h and le the various tasks associated with the digital library project.

Broadly speaking, the personnel will be required for the following tasks:
a. Project management.
b. Selection and preparation of source material
c. Digitization and conversion
d. Cataloguing and metadata assignment e. Quality assessment
f. System administration and maintenance of digital library server and website.
g. System analysis and programming for digital library application/interface development h. Promotion and provisions of services.

CHANGING ROLE OF THE LIBRARIAN / UPDATING THE SKILLS OF THE LIBRARY STAFF :

Technophobia and indolence are the two greatest factors that are resisting the librarian to change themselves according to new changes in information technology and Communication. Technology survey users realize they need help which librarian can provide. Now Information specialists have to work as information resources to produce, manage , maintain the services and information. Librarian has to work as the information manager, technical processor to manage and deliver appropriate information services. Librarian must keep themselves aware about the new trends and techniques developing in the field so that he can work as information adviser / Instructor. Librarian has expertise in knowledge management which contain financial resources, human resources, knowledge resources, technological resources etc. Librarian should be aware about technical knowledge like operating system – windows, Linux, Database management system, Information retrieval software, Library software package, General purpose programming, Web page development and content management etc. The library staff has to be more specialist, highly technical and better equipped to provide high tech services. The reader also should become computer literate and develop the skills for exploiting computerized information services to the maximum. Librarian also should have capacity to use / download free software Dspace, Koha, NewGenlib. Librarian should learn to apply the skills in modern scenario and changing situation, otherwise time is not far that the librarian will also become fossil.

DIGITAL LIBRARY MYTH OR REALITY :

In India no library has attained status of 100% digitization. The existing libraries are in the transition phase. The libraries are hybrid of conventional libraries and electronics libraries hence names as hybrid libraries. Digital libraries have so many advantages as we discussed already, in spite of them there are some reality remain, what we can said disadvantages of the digital library.

1. Initial Cost is high : The infrastructure cost of Digital library i.e. the cost of hardware & software learning communication circuit is generally very high.
2. Copyright : Digitization violets the copy right law as the thought content of one author can be freely transfer by other without acknowledgment. As the electronic information can be

easily reproduce, manipulated there is lack of standard authoring process. The identity of the original author or original data may affect in digitization process. Difficulties of Intellectual property rights of the author and publishers are still persisting in the digital media.

3.Staff and Efficiency : The library staff is opposing the digitization because they don't try to pull themselves out of the   comfort zone in which they had been working since years i.e. technophobia is there. Lack of experts to h and le and operate the latest technology, effects the quality and future planning for storage of Digitized material.

4. Environment: Digital Library can't reproduce the environment of a traditional library. Many people find for reading printed material to be easier than material on computer screen.

5. Audit point: The electronic material like E- journal or E-Book subscribed by the library may not be available physically on the library stack, hence their procurements from the pint of view of audit become doubtful. Secondly misuse of user Id and password of the E-journals by the library user cannot be ruled out also.

6. Preservation: Due to advance technological development after 3 to 5 years Digital library can rapidly become out dated and its data become inaccessible. Compare to fast technological changes it is not feasible to change all the resources in digital form by the common libraries. Its so much expensive.

7.Power supply is a major problem in India, hence connectivity is always a problem either at the server end or client end.

DIGITAL LIBRARIES IN INDIA:
1. Electronics Theses and Dissertation (ETD) funded by NISSAT
2. Digital Library of India (www.digitallibrary.edu.pk)
3. Child Trafficking Digital library (www.Childtrafficking.com)
4. Archives of India Labor : Integrated Labor History Research Program (www.indianlabourarchieves.org)
5. Indian National Digital Library in Engineering Science and Technology(INDEST) Consortium (http://indest.iitc.ac.in)
6. Vigyan Prasar Digital Library (www.vigyanprasar.gov.in/diglib/)
7. Vidyanidhi digital library and e Scholarship portal (www.vidyanidhi.org.in)
8. CSIR Explorations (http://csirexplorations.com)
9. Traditional knowledge digital library(TKDL) http://www//tkdl.res.in
10. India Education Digital Library (www.edudl.gov.in)
11. Cultural Heritage Digital Library in Hindi (http://mobilelibrary.cdacnoida.in)
12. Digital e- library (Dware gyan sampada providing books at your doorsteps) (www.new.dli.ernet.in, http://dli.iiit.ac.in)

LIBRARY CONSORTIA IN INDIA :

1. INDEST-AICTE Consortium (Govt-funded)
2. CSIR E-Journals Consortium (Govt-funded)

3. UGC Infonet Consortium (Govt-funded)
4. DAE Consortium (Govt-funded)
5. MCIT Consortium (Govt-funded)
6. IIM Libraries Consortium
7. FORSA Consortium

SUMMARY:

In India, particularly librarian of newer generation wants to modernize their library by integrating ICTs. But in the absence of any sound policy, standard or guidelines, they are forced to provide only the basic library services in a traditional library. The mandatory purchase of E-Journals, E- Books by AICTE is one of the steps towards the digital library. The situation in India regarding digital library is very peculiar. Many Government agencies as well as institution mostly in public sector are engaged in some sort of work regarding the digitization of libraries. At national/state/local level for identifying rare document to be digitized the criteria like Intellectual property rights issue, balancing print and digital collection, designing and improving service based digital collection, costing and economics of Information in digital era are laying down. We need some clear-cut national plans and polices for infrastructure, standards, metadata, interoperability, multi-lingual databases, training, co-ordination, copyright, and archiving and preservation methods, so that our heritage of knowledge and culture can the ravages of time and present and future generations can benefit and be guided by them. Parallel to this, effort also needs to be made to strengthen library association so that enough pressure on the GOI to formulate a policy on library and information services. The establishment of digital library is a complex task and does not happen easily and cheap. For development of digital library several factors such as organization's goal, value of timely information, availability of infrastructure and resources for conversion and funds are necessary.

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