Developing Digital Library: Major Issues and Challenges

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Abstract: - *This paper discusses the major issues and challenges in digitization and formation of digital libraries. The concept of digital libraries comes into existence in the 21st century. Digital library are synonymous to virtual library, electronic library, library without walls. Digital libraries are based on digital technologies. It is a very complex system. In this study, we have to discuss about the basic concepts of digital library, need of digital library, objectives of digital library, factions of digital library, various point to creation of digital libraries and advantages and disadvantages of digital libraries.*

Keywords: Digital Libraries, Internet, D-space, Greenstone

1. Introduction

Recent developments in ICT, especially the web, have led to the creation of a growing number of digital library projects in the UK, USA and elsewhere. This new phenomenon is designed to bring a paradigm shift in the ways we create access and use information. To develop digital libraries we depend on information technology. Digital libraries are completely different from the traditional libraries because they allow users to gain on-line access to and work with the electronic versions of full text documents and their associated images. Digital libraries provide users with documents in a systematic way to focus on collection of digital objects that can include text, video, numbers stored as electronic media.

2. What is the Digital Library?

A digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM (compact-disk read-only memory) disks. Depending on the specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos. A digital library is a library in which collections are stored in digital formats and

accessible by computer. A digital library is a special library with a collection of digital objects that can include text, audio-visual material, stored as electronic media formats. An electronic library is a type of information retrieval system.

3. Need of Digital Library

Impact of information explosion we must need to change over traditional libraries in to digital libraries. Some factors are as follows:

1. Information explosion
2. Data storage problem
3. Low cost technology
4. Searching problems
5. Need of new generation
6. Environmental problem
7. Cost effective services

4. Objectives of Digital Library

1. To provide personalized and retrospective services in an efficient way.
2. To have large digitized databases.
3. To save the time of library staff by avoiding routine jobs.
4. To collect, store, organize and access information in digital form.
5. To reduce cost involved in various library activities.

5. Digital Libraries Creations

One of the major issues in developing digital libraries will be the creation of digital collections. Tools used for the digital library include several core and peripheral systems like hardware including scanners, computers, and data storage and software including image capturing and editing, network such as data transmission and display/printing technologies. Some of the important points to be considered in developing a digital library are as follows:

5.1. Digital collection – 1. Digitization, converting paper and other media in existing collections to digital form 2. Acquisition of original digital works created by publishers and scholars. 3. Access to external materials not held in-house by providing pointers to websites, other library collections, or publishers' servers.

5.2. Access to external digital collection- Access to external digital collection is provided by external sources like institutions, resources of the libraries, electronic journal through on-line access like Elsevier, ACM, etc., which provide their journals on-line through websites.

5.3. Accesses to digital information available on the web - www.edoc.com, mel.library.mi.us, www.inflibnet.ac.in, etc., are the important sites that provide access to electronics resources. We can say that digital libraries can provide access to electronic resources through the library home page.

5.4. Conversion of print to digital **–** For creating digital library some of the technical requirements for image processing include hardware (computer,

scanner, input/output devices), software (image capturing, data compression/decompression), network (for transferring information for resource sharing), and display technologies. All the above components are the important machines and tools needed for digitization.

6. Digital Library Services

Digital library provides a wide array of services to its user community making them more widely available. The following services are offered by the digital library.

- E-books /E-Journals
- E-mail
- DVD- ROM databases
- Internet service
- Photocopying
- Current Awareness Service
- Selective Dissemination of Information
- Catalogue database
- Externally-Internally purchased database
- Document delivery

7. Developing Digital Libraries- Team Approach

Very few people will have all the skills required to construct a digital library. Most of the skills are too specialized for the librarians or any other layman to acquire. Therefore, digital library development projects are very much a team effort. The skill set of a typical digital library team may be as follows:

- Technical skill (knowledge of IT hardware/software);
- Project management
- Database development
- Cataloging (Meta-data)
- Computer programming
- Web designing subject specialists
- Preservation (document formats and long-term storage media)
- Photography
- Graphic design/digitization skills
- Volunteer/student help

8. Functions of Digital Library

- Access to large amounts of information to users they need it.
- Access to primary information sources.
- Support multimedia content along with text
- Network accessibility on Intranet and Internet
- User-friendly interface
- Hypertext links for navigation
- Client-server architecture
- Advanced search and retrieval.
- Integration with other digital libraries.

9. Components of Digital Library

To design and develop a digital library requires well-established information technologies by accessing the database or servers through networks. There are some essential components to create a digital library.

1. Computer with high-speed processor, sufficient memory and hard disk space
2. Scanner and digital camera.
3. Backup facility and devices to take backup of all files.
4. High-speed internet connectivity.
5. Digital library software for organizing digital resources e.g. Greenstone, D-space, E-prints.

9.1 Hardware Requirement
- LAN or WAN
- Scanner
- Computer Servers
- Digital Camera
- High power backup
- Converters
- Networks
- Multimedia interface
- 24 hours Internet Connectivity

9.2 Software Requirement
- Linux operating system
- Digital Library software like Greenstone and D-space
- Editing software

10. Advantages and Disadvantages of Digital Library

 10.1 Advantages
- Information can be consulted, shared by multiple users simultaneously, updated quickly, and available 24/7

- No physical boundary.
- Round the clock availability
- Multiple accesses
- Information retrieval
- Preservation and conservation
- Space
- Wider access
- Added value
- Easily accessible

10.2 Disadvantages

There are some disadvantages of digital libraries also, which are as follows:
- User authentication for access to collections
- Digital preservation
- Equity of access
- Interface design
- Interoperability between systems and software
- Information organization
- Training and development.

11. Conclusion

LIS and computer science professionals face challenges that will lead to improved systems. Converting the existing material into a digital from is not an easy task, it is challenging work. It involves many steps, which have been described in this paper. Librarians have to consider these criteria before converting their materials into digital form. The overall goal of the digitization is universal access to materials which

can be achieved by selecting the useful, valuable and unique material.

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