FORMATION OF DIGITAL LIBRARIES

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Abstract

Digital libraries are starting to gain ground in the present century. We are heading toward an environment in which digital information may substitute for much print-based information. Digital libraries are aimed to link the past and the present, and help shape the future by preserving the records of human culture, as well as integrating emerging information technologies. Digital libraries come in many forms. They attempt to provide instant access to digitized information and consist of a variety of information, including multimedia. This paper discusses the new activities, methods, and technology used in the digitization and formation of digital libraries. It set out some key points involved and the detailed plans required in the process, offer pieces of advice and guidance for the practicing Librarians and Information scientists.

Keywords

Technology, DigitalLibrary, Metadata, DRM,

Introduction

With the development of information communication technology is the rapid rise of electronic databases and modern e-book technologies the concept of digital library has become very important. In modern times the library is constantly required to meet the challenge of information detonation. A Digital library is a global virtual library. Digital libraries are created with the aim to provide ready access to required information at a faster rate. The World Wide Web is playing a vital role in various Digital information sources and services. Digital libraries are innovations the execution of which is desired in the developing countries. Digital libraries are new and investment in libraries is fraught with unknown. Consequently, library professionals are curious for information about different institutional experiences, including digital library investment, cost-effectiveness, and what influence have helped shape a successful digital library program

Digital Library

A library with both digital collection and traditional, fixed media collection is called a Digital Library. It also includes digital materials that exist outside the physical and administrative bounds of any one digital library. A digital library may be defined as a library that has all the information in electronic form and having electronic devices to have access to digitized information. The digital library is a collection of services, a collection of information objects, which supports users with information objects. A Digital library consists of information in digitized form, where the information stored is electronically accessible using a computer that can store, provide access, and disseminate without any conversion process. Information in digital form is stored electronically and accessed, where access to a digital library has no boundary or particular restrictions in access with respect to space/age/time. This digital library helps to provide access to information through electronic gateways to remote digital database

Definitions

R. R. Larson defined "digital library as a global virtual library – the libraries of thousands of "networked electronic libraries".

The American Digital Library Federation has defined the digital library as "Digital libraries are organizations 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 collections of digital works so that they are readily and economically available for use by a defined community or set of communities".

The Associations of Research Libraries (ARL) (1955), has identified five elements common to all definitions of the digital library as under.

1 The digital library is not a single entity;

2 The digital library by requires technology to link resources of many;

3 These links are transparent to end-users;

4 Universal access to the digital libraries and information services in the goals; and

5 Digital library collections are not limited to document surrogates, but they also include digital artifacts that cannot be represented or distributed in printed formats.

According to Gladney H. M. et al. (1994) "A digital library service is an assembly of digital computing , storage and communication machinery together with the software needed to reproduce, emulate and extend the services provided by conventional libraries is on paper and other material means of collecting, storing, cataloging, finding and disseminating information."

Needs of Digital Libraries

There are a number of reasons for creating digital. In a library, even in an automated library searching information in printed books in response to some queries will be time-consuming and sometimes impossible also. Because, information is available in the books is not structured information. But in digital resources, searching information on a particular query is possible if two rows are organized with the help of method at a set. In a digital library, the delivery of the material is different from removing of a book from shelf and checking it out. This is because the book in digitize form can be copied to a user's computer or reading, but the book still remains in the source computer server. It can again be known in the name of another user. Again sharing and circulation of printed books in a wide area is also time-consuming, but it is very easy to share the digital resources through network, even multiple users in use digital resources at a time available in a single source. Therefore, it becomes essential to acquire organize and disseminate information available in digital form.

Digital libraries are needed to provide quality-based services at the user's doorsteps. In general digital libraries are needed for the following reasons:

1. Information explosion
2. Information retrieval
3. Easy to understand
4. Distance learning
5. Shifting of environment
6. Multiple functions of the same information
7. To procure online publications

Today, the digital library is in demand with the fulfilling of following goals:

• To increase the access;

• To preserve the original documents and manuscripts;

• Qualitative and quantitative resource sharing;

• To improve the library services;

• Effective utilization of funds invested in the digital library;

• User acceptability from their desktops; and

• To satisfy the five laws of library science.

Characteristics of a Digital Library

Digital library requires digital technologies and is a combination of traditional and media collection. So they encompass both paper and electronic material. The Digital library consisted of mostly electronic documents, which are of reference type. Generally, the three main characteristics of a digital library are the storage of information in digital form (Whether born-digital or digitized form), usage of communication networks to access and obtain information, and copying by either downloading or online/offline printing. Here the major characteristics of a digital have been jotted down:
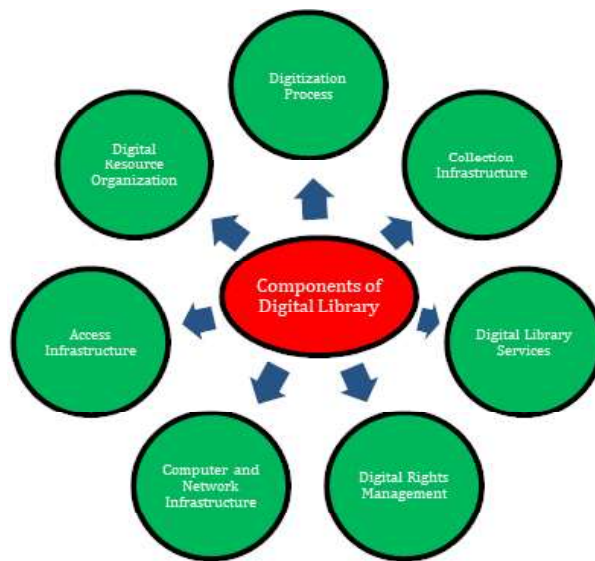
• Digital Library is a digital object, which may be text, audio, video, image, and numeric multimedia components.

• Users can get remote access to the Digital library from users to the workplace.

• Digital libraries support formal and informal learning procedures.

• Digital library provides remote to rare and expensive material.

• Digital libraries reduce the physical space

• Variety of Digital information resources available on the Digital library

• Provide access to distributed information resources

• The same information resource can be shared by many at the same time

• Ability to handle multilingual content

• Paradigm shift both in use and ownership

• Collection development P paste on potential usefulness and appropriate filtering mechanism by following the negotiate the problem of plenty of resources

• Last users may build their own personal collection the facilities is provided by digital library

Functions of Digital Libraries

The purpose of a **digital library** is to provide a central location for accessing the information on a particular topic. The role of a Digital Library is to collect, manage, preserve and make accessible digital objects. The following are some of the functions of the digital library:

• To enhance advanced search, access, and retrieval of large amounts of information to users wherever they are and whenever they need it.

• To support library functions and improve library operations..

• To preserve unique collections through digitization.

• 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

• To enable one to perform advanced search and retrieval.

• Integration with other digital libraries.

• To secure the information.

Components of a Digital Library

1. Collection Infrastructure: The digital library collection can be developed in three ways:

• Born Digital resources

• Buying Access to External Digital Collections·

• Converting of Existing Print Media into Digital Format (Digitization)

2. Digitization process: The digitization process involves the following main steps:

• Selection

- Conversion
- Data Capture
- Data Processing
- Storage
- Organizing and Indexing
- Retrieval and Display
- Preservation

3. Digital Resource Organization: Digital Resource management includes addressing protocols, development of Metadata Schemes, assigning metadata to digital objects, assigning digital object identifier (DOl) to the digital objects, linking of objects with associated metadata for searching and browsing capabilities, organizing the digital objects with metadata in the database and also manage to build browsing and searching interfaces

4. Access Infrastructure: This includes Search and Browsing Interface which facilitates Simple Search and Advanced Search with Boolean queries, wild cards, phrase searches, and field-specific searches.

5. Computer and Network Infrastructure: The infrastructure includes the following hardware and software requirements:

a. Hardware: Servers, Nodes, Printers, Scanners, Digital Camera, Sound Recorders, etc.

b. Software: System Software, Application Software, OCR Software, File Format converter, Web server, Database software, Antivirus, Networking software, Image enhancing, Compressing software are software requirements. Digital Library Software viz. DSpace, E- Print, Greenstone, etc.

c. Networking: LAN, MAN, WAN, internet, etc.

6. Digital Rights Management: involves a number of steps.

- The digital library should include policies and rules specifying the management required.

- The users of the digital library should be authenticated in some way so they are known.

- The content of the digital library should be shown to be authentic.

- Payment should be made if access requires that in a particular case.

- Users who are authorized to access a DO are allowed to do so.

- Subsequent access with the DO may take place after retrieval to a user's site.

7. Digital Library Services: The major digital library services include:
a. OPAC to web PAC

b. Digital Reference Service

c. Library Chat Rooms

d. Electronic Delivery Services

e. Virtual Library Tours

f. Ask-A-Librarian

g. Real-Time Services

h. Bulletin Boards

i. Web-based User Education Web Forms

j. Frequently Asked Questions (FAQ)

k. Selective Dissemination of Information in Digital Library: Delivering Customized Contents

l. RSS Feeds

Advantages of Digital Library

The advantages of digital libraries include:

- Nearly unlimited storage space at a much lower cost
- Re-allocate funds from some staff, collection maintenance, and additional books
- No physical boundary, structural approach
- Round the clock availability
- Multiple access, networking
- Enhanced information retrieval
- Preservation for print material
- Added value, information retrieval
- Universal accessibility

Disadvantages of Digital Library

The disadvantages of digital libraries include:

- Digitization violates the copyright law as the thought content of one author can be freely transferred by others without his acknowledgment.
- High initial cost.
- Digital library needs high bandwidth network for transfer of multimedia resources.
- With the larger volume of digital information, finding the right material for a specific task becomes increasingly difficult.
- A Digital library cannot reproduce the environment of a traditional library.

Conclusion

Digital libraries are going to play a very vital role in this century and are an important component for disseminating the required information. The contexts of

physical sources of information are being transformed into digital for its various advantages which can lead to multiple usage and easy access. The advent of computers, IT, advancement in telecommunication and storage devices, and disseminating techniques have given new dimensions to collecting, organizing, and disseminating a vast amount of information. There will be continuing expansion of digital library activities Digital libraries will build upon work being done in the information and data management area. Digital libraries provide an effective means to distribute learning resources to students and other users. Planning a digital library requires thoughtful analysis of the organization and its users, and an acknowledgment of the cost and the need for infrastructure and ongoing maintenance. Digital libraries are beneficial to all researchers, scholarly institutions, and the entire research community. Building world standard digital libraries, as powerhouses of knowledge, that are able to address the complex issues put forth by the technology push as well as the demand-pull are fast catching up worldwide attention.

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