

# Digital Resources and Digital Library Services

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## Introduction

The advancement in the field of information technology has brought drastic changes in the information communication. It has influenced for the increase in the digital resources publishing.

Digital describes electronic technology that generates stores, and processes data in terms of two states, positive (number 1) and non positive (number 0). The data transmitted or stores with digital technology are expressed as a string of 0's and 1's. The data in the form of 0s 1s means perfect copying.<sup>1</sup>

Traditionally, digital means the use of numbers and the term comes from digit, or finger. Today, digital is synonymous with computer. When information, music, voice and video are turned into binary digital form, they can be electronically manipulated, preserved and regenerated perfectly at high speed. The millionth copy of a computer file is exactly the same as the original.<sup>2</sup>

Study on information representation and retrieval has become key field only after the World War II. Developments in Information representation and retrieval have increased with the introduction of computer in the field in 1950s. Hans Peter Luhn used the machine in this period to handle not only the keyword matching and sorting tasks, but also the intellectual work related to the content analysis of written texts.<sup>3</sup>

(put reference) The emergence of online systems such as DIALOG (it is a SDI services from online search services providers) in the 1960s and 1970s has shows the shift from manual to computerized information retrieval. In the demystified phase 1980s to 1990s implementation of CD –ROM and Online Public Access Catalogue systems made it possible for the end-users to search for themselves by demystifying Information Retrieval system that existed previously in online form only. The networked era started from 1990s. This era symbolized by the internet, this provides a novel platform as well as a showcase for information representation and retrieval in the digital age.

## Digital Resources

Information published on computer readable format is digital resource, not necessarily on computer. Digital resources either born digital or digitized materials; they can be accessible from library's database or through internet.

Types of digital resources are Digital Communications, Digital Collections and Online Finding Aids.

Digital Communications may be online classroom instruction sites, Blogs, social networking sites, E-mail, online tutorials, Message boards, etc.

Digital Collection includes, Internet web sites, Online video collections, Online electronic book collections, Online image collections, Online audio collections, Wikis, Online documents, Online periodical article collections, etc. Online finding aids are Search Engines, databases, Indexes, etc.

## Structure of Digital Resources

Different file formats are available to store digital resources. They are Portable Document Format (PDF) Format, CHM Format, Rich Text Format, Plucker Format, Higher Text Mark up Language (HTML) Format, Desktop Author Format, Tagged Image File Format (TIFF), PostScript Format, etc.

PDF gives customized form for storing and editing printed publishable documents. This format is designed by adobe systems. Now a day this is the common file format used worldwide.

CHM format is used to compress file for multiple pages ad embedded graphics which are distributed along with proprietary metadata. It is based HTML format. Rich Text format is used by word processors. Plucker format is a digital resource reader application.

The High per Text Markup Language (HTML) file format can be read with the help of browser like Microsoft internet explorer. Most of the web pages using this format. The HTML file formats are in Unicode or ASCII format.

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Quick Response Code :



Desk top author format will help to create digital books with automatic turning pages. It is useful for desktop authors. Usually this format is used for e-cards, online resumes, exams, forms, quizzes, surveys, digital photo albums, digital diaries, tests, etc.

Tagged Image File (TIFF) format is used for storing photographs, line art and images.

Postscript format is a desktop publishing area for describing area of a printed page in a higher level.

The basic components needed for accessing digital resources are, Windows PC with P-4 CPU @3.0 GHz or above, 512 MB RAM, HDD: 40 GB, CDROM Drive, Monitor: 15" /17" and Windows Operating System.

Internet connectivity is needed to access online digital resources. The software requirements are Web Browser: IE: 5.x or later, Fire fox Mozilla 1.0 or later, Netscape: 4.79 or later and Java version required: 6.0 or later.

The web browser being used to access digital resources should be enabled for JavaScript/Java, Acceptance of cookies, Cascading Style Sheets, Secure Sockets Layer (SSL) Security (128-bit encryption minimum).

Digital resources can be accessed only on dedicated terminals, networked terminals or online. As per the publisher's license agreements, some digital resources access is controlled by user name and password.

#### **Special Features of Digital Resources**

- For a particular keyword / search term, full text can be searched, except when available in the form of images.
- Hundreds or thousands may be carried / stored on one device.
- Font size, type, page alignment, format, document style, can be adjusted.
- Digital resources can be used with text-to-speech software.
- Dissemination in any number of copies can be possible at low cost.
- Digital resources circulate instantly.
- No risk of damage on the information resource as in the print resource.

#### **Factors Influencing on Growth of Digital Resources**

- Low cost of digital resources storage.
- Increase in digital resources users.
- Fast development in network technology.
- Popularity of internet usage.
- Easy to transfer information in minutes.
- Editing digital information is very easy and less time consuming.
- Development of digitization technologies (capturing devices like scanners, and conversion software).

- Increase in the availability of digital software (commercial, free software).

#### **Purpose of Digital Resources**

- Easy to use and disseminate.
- Reducing gap between information publication and usage of online digital resources.
- To provide current information to the users.
- Save the time of user.

#### **Advantages of Digital Resources**

Digital resources have become popular amongst information users, because of their advantages over print resources. Whatever their disadvantages, digital resources possess a number of important advantages as below and have gained the popularity:

**Mobility:** All the resources can be taken in hand and can be accessible at any time. Easy to move from one place to another.

**Saving Physical Space:** It occupies very less space and solves the space problem in library.

**Convenience:** Hence it occupies very less space, even less used or not used resources can also be stored for future use.

**Saving Time and expenditure:** Waiting for the resources after placing orders or visiting bookstores for selection procedures like in printed resources, no need to wait for the resources and save the transportation expenditure.

**Ease-of-Use:** Though the numbers of software are more, most of them developed on similar features, like font size, type, add or delete book marks, hyperlink, and text search, etc. Hence user find easy to use the resources even they are available on different software.

**Searchable:** Searching throughout the text is very simple to locate the key words in digital resources. Further, online resources search result provides a list of matches for the search word or phrase. It helps the reader to select most relevant resources.

**Modifiable:** The digital resource can be changed during use to meet the needs of the reader. For example, electronic books often allow students to choose their own font and font size. This could be especially helpful for users with vision impairments. Some digital resources are written in multiple languages, allowing the reader to decide, for example, whether to read the text in English or Spanish. Other features might allow students to add their own documents and images to the book, or annotate the text with personal observations in the form of notes.

**Enhanceable:** Digital resources bring together text documents, multimedia, images, etc. So that user can enhance the text by using pictures, text, link to related

documents, embedded resources, as per his requirement.

### **Disadvantages of Digital Resources**

- Computer and other gadgets are required to read Digital resources.
- Information preservation technology is becoming obsolete rapidly.
- To access online digital resources needs internet connection.
- To open / read digital resources, batteries / electricity is needed to run the computer.
- Difficulty in reading on computer screens for a long period<sup>4</sup> and portability.<sup>5</sup>
- The main considerations for archiving of electronic journals are: (i) should the publishers or libraries archive the digital data? (ii) **Whose responsibility** would it be to upgrade old data to newer formats? And (iii) if the publisher goes bust, or the editor of an independent journal gets bored or leaves their institution, what will happen to the archives?<sup>6</sup>
- **Perishable citation**: Once printed, the details of printed resources remain constant, thus finding them again is straightforward, and however web sites **change their URLs** or frequently disappear altogether.
- **Authenticity** : worries about the "malleability of content in electronic form" establishing the **source and authority** of material in general.
- **Search engines ignore PDF files.**
- Knowledge about the access technology: Users required continuing education to update them with the ever changing technology.

### **Digital library**

Selection, acquiring, processing, organizing, storing and retrieving of information in digital form is called digital library. Users are not necessarily to locate in particular geographical area. User can access the resources from any corner of world.

### **Digital Library Services**

According to Gladney<sup>7</sup> "A digital library service is an assemblage of digital computing, storage, and communications machinery together with the software needed to reproduce, emulate, and extend the services provided by conventional libraries based on paper and other material means of collecting, storing, cataloguing, finding, and disseminating information."

The recent developments in the internet and in Web Technologies have brought significant changes in the concept of traditional reference services and a number of web-based expert services.

Information services are provided to the users on demand as well as anticipating the user needs including

various forms of current awareness and selective dissemination of information services. Such services are provided to the users to keep them abreast of the latest developments in their field of interest through on-line search services in digital information environment.

Personalized services in a digital library atmosphere would help the users to find information available in a digital form.

HodgKin<sup>8</sup> has made an aggregation approach to reference and information services. According to which more than one reference sources is made accessible digitally and also it is more practicable in terms of visibility and profitability than a single reference source.

### **Common Services**

- Catalogue Databases
- Current Awareness Bulletins
- Externally Purchased Databases
- CD-ROM Databases
- Remote Information Services
- Internally Published Newsletters, Reports & Journals
- Internet Information Sources Mirroring & Cataloguing
- E-mail
- Bulletin Board Service
- Netnews system
- Audio and Video Communication
- Electronic Table of Contents
- Electronic Document Delivery Service
- Electronic Theses and Dissertations
- Reference Service
- Electronic Publishing
- Discussion groups and forums
- Central storage facilities for Hosting digital collections and indexes
- Tools for loading, storing, searching, and displaying digital objects

**Conclusion** : With the development of information technology and growth of online system, automated and automatic techniques for information representation and retrieval had been produced and tested. Through this digital resources gained the importance amongst users.

It has brought significant changes in the concept of traditional library reference services and a number of web-based expert services.

In a developing country like India where resources are limited, funds are inadequate; the library professionals have to take careful decisions in selecting library materials for digitization.

Library professionals have to update themselves time to time with latest developments in technology which is

used in digital information resources. Because to access digital resources need continuing education to gain knowledge about the new technologies.

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