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Overview on Digital Library



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Short Profile

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ABSTRACT:

This article throws light on introduction of Digital Library, Definition of Digital Library, Objective, Characteristic of D.L, Advantages & Disadvantages of Digital Library and it also describe components and software of Digital Library. short introduction of few Indian digital libraries.

KEYWORDS

Digital Library, E-library, Digital Library Software.

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INTRODUCTION :

The computerization of the library during past few decades have focused heavily on creation of surrogate records of printed documents available in a library or for providing computerized services through secondary databases held locally on CD ROM or magnetic tapes. Library automation has helped to provide easy access to collections through the use of computerized library catalogue such as On-line Public Access Catalogue (OPAC). Digital libraries differ significantly from the traditional libraries because they allow users to gain an on-line access to and work with the electronic versions of full text documents and their associated images. Many digital libraries also provide an access to other multimedia content like audio and video.

The term digital library may mean different things to different people. It has been applied to extraordinary range of applications and is frequently used to denote one or more of the followings:

- i) Collections in which complete contents of documents (as opposed to bibliographic citation or abstracts) are created or converted to computer processible form for online access;
- ii) Providing digital access to material that already exists within traditional library collections, i.e. libraries of scanned image, images of photographic or printed texts, digital video segments;
- iii) Scientific data sets like protein sequences or nucleic acid sequences, etc. Software libraries or multimedia works are often referred to as digital library;
- iv) Online databases and CD ROM information products, particularly those with multimedia or interactive video components or those which contain complete contents of books or other publications;
- v) Computer storage devices on which information repositories resides, such as optical disc, juke boxes, CD ROM / DVD ROM towers, etc.;
- vi) Database, including library catalogue accessible through the Internet; and
- vii) Digital audio, video clips or full-length movies.

The only thing common about the range of products and services mentioned above are their being “digital” or “digitized”. With a vision of digitizing a million books by 2008, the Digital Library of India (DLI) project aims to digitally preserve all the significant literary, artistic and scientific works of people and make it freely available to anyone, anytime, from any corner of the world, for education, research and also for appreciation by our future generations.

DIGITAL LIBRARY :

The US Association of Research Libraries (ARL) identified five elements common to all definitions of the digital library, in October 23, 1995 [2]:

- The digital library is not a single entity
- The digital library requires technology to link the resources
- Linkages between digital libraries and information services are transparent to users
- Universal access to digital libraries must be a goal
- Digital library collections are not restricted to document surrogates but include digital artifacts that have no printed equivalent

In a broader sense, we can define Digital libraries as 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.

Borgman (1992) : emphasized that digital libraries should not be viewed only as a point of access to digital information but as a combination of a services; an architecture; a set of information resource, databases of text, numbers, graphics, sound, music or animation, etc.; and a set of tools and capabilities to locate, retrieve and utilize the information resources available.

Objectives of Digital Library :

- ✦ To collect store, organize, access, information in digital form.
- ✦ To develop database in digitize form.
- ✦ Better and value added library services.
- ✦ To save time of library staff by avoiding routine jobs.
- ✦ Space saving.
- ✦ To provide remote login facility.
- ✦ To reduce cost involved in various library activities.
- ✦ Resource sharing through network.

CHARACTERISTICS OF DIGITAL LIBRARY :

- Digital libraries are the digital counterparts of traditional libraries and include both electronic (digital) as well as print and other (e.g. audio, video, graphics, animation, etc.) material;
- Digital libraries are not bound to physical spaces. Different components of digital library may be distributed to different locations that works coherently so as to meet the requirement of users;

- **Requirement of physical spaces in digital environment reduces essentially for :**

- ✦ housing servers for hosting digital content;
- ✦ PCs as clients for accessing digital content; and
- ✦ staff for maintaining digital libraries.

- A digital library owns and controls the information, it provides access to information, not just a pointer to it;
- A digital library has a unified organizational structure with consistent points for accessing the data;
- A digital library is not a single entity, it may also provide access to digital material and resources from outside the actual confines of any one digital library;
- Digital libraries support quick and efficient access to a large number of distributed but interlinked information sources that are seamlessly integrated;
- Digital libraries offers access to its content to multiple users simultaneously, these content can be listed in multiple ways by different users simultaneously;
- Digital libraries include all the processes and services offered by traditional libraries though these processes will have to be revised to accommodate difference between digital and paper media.

COMPONENTS OF DIGITAL LIBRARY :

The basic components of a digital library include necessary hardware, software and skilled man power.

Hardware :-

- ✦ Server with high capacity hard disk and clients in the LAN, web server and FTP server.
- ✦ Desktop workstation - PC
- ✦ Capturing devices such as scanner, cameras, cards, data compression devices etc.
- ✦ Cartridge tape
- ✦ High power UPS
- ✦ Secondary storage
- ✦ High speed network

Software:-

- ✦ Digital library management software's like D-space, Greenstone, E-print, Fedora etc.
- ✦ OCR - software
- ✦ Scanning software
- ✦ CD - read / write software
- ✦ Windows – NT networking software, SQLserver software, DBMS etc.

Skilled manpower:-

The manpower, who are supposed to implement and manage the IT should be retained in order to keep themselves abstract of the latest techniques and tools of IT.

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DIGITAL LIBRARY :

National Digital Library :

- A Digital Library of India has been initiated with a free-to-read, searchable collection of one million books. The books digitized/being digitized are predominantly in Indian languages and are made available to anyone over the Internet. One of the goals of the Digital Library of India is to provide support for full text indexing and searching based on OCR (optical character recognition) technologies where available. The availability of online search allows users to locate relevant information quickly and reliably thus enhancing student's success in their research endeavors. This 24x7 resource would also provide an excellent test bed for language processing research in areas such as machine translation, optical character recognition, summarization, speech and hand writing recognition, intelligent indexing, and information retrieval in Indian languages.

Traditional Knowledge Digital Library :

The Traditional Knowledge Digital Library (TKDL) is an Indian digital Knowledge repository of the traditional knowledge, especially about medicinal plants and formulations used in Indian systems of medicine. Set up in 2001, as a collaboration between the Council of Scientific and Industrial Research (CSIR) and the Dept. of Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homoeopathy (Dept. of AYUSH), Ministry of Health & Family Welfare, Govt. of India, the objective of the library is to protect the ancient and traditional knowledge of the country from exploitation through biopiracy and unethical patents, by documenting it electronically and classifying it as per international patent classification systems. Apart from that, the non-patent database serves to foster modern research based on traditional knowledge, as it simplifies access to this vast knowledge of remedies or practices.

As of 2010, it had transcribed 148 books on Ayurveda, Unani, Siddha and Yoga in public domain, into 34 million pages of information, translated into five languages — English, German, French, Spanish and Japanese. Data on 80,000 formulations in Ayurveda 1,000,000 in Unani and 12,000 in Siddha had already been put in the TKDL.

National Science Digital Library :

National Science Digital Library (NSDL) aims at providing comprehensive S&T information to students of science, engineering and technology in the country. Begun as a Tenth Five Year Plan Network Project of Council of Scientific and Industrial Research (CSIR), NSDL is the only one of its kind that provides curriculum based content to address the information needs of the undergraduate students of science. The content creation and development for NSDL has gone through rigorous procedures to make available quality content for the students. Authored by eminent teachers and validated by renowned faculty in Indian universities and colleges, NSDL envisages to bring finest content to the students. The discussion forum has been provided for interactions amongst NSDL users.

Most resources in the library adhere to principles of Open Educational Resource (OER) access, although some resources are restricted to provider site membership, or may have a cost associated with them (indicated in the full record of the resource).

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Indira Gandhi National Centre for Arts (IGNCA) :

The Indira Gandhi National Centre for the Arts, established in memory of Smt. Indira Gandhi, is visualised as a centre encompassing the study and experience of all the arts -- each form with its own integrity, yet within a dimension of mutual interdependence, interrelated with nature, social structure and cosmology. Recognizing the need to encompass and preserve the distributed fragments of Indian art and culture, a pioneering attempt has been made by Indira Gandhi National Centre for the Arts (IGNCA) to serve as a major resource centre for the arts, especially written, oral and visual materials. One of the programmes of this centre, in collaboration with UNDP, is to utilize multimedia computer technology to create a wide variety of software packages that communicate cultural information. Multimedia technology allows the user to interact and explore the subject in a non-linear mode by combining audio, text, graphics, animation and video on a computer.

ADVANTAGES OF DIGITAL LIBRARY :

Information retrieval:- Digital library provides very faster use friendly interfaces, single click of the mouse help to access resources the user is able to search entire collection of the library.

Cost:- A traditional library must spent large sums of money for paying staff, book maintains, rent and additional books etc the cost of maintaining a digital is much than that of a traditional library.

Multiple access:- Electronic resources can be accessed by number of user at the same time.

Networking:- A seamlessly interesting resource sharing can be achieved by providing the link to any other resources of other digital by a particular library.

No physical boundary:- People from all over the word could gain access to same information as long as on internet connection is available. The user of digital library need not to go the library physically.

Space:- Where is traditional libraries are limited by storage space, digital libraries have the potential to storage much more information.

Preservation and conservation:- An exact copy of the original can be made and number of times without any degradation in quality.

DISADVANTAGES OF DIGITAL LIBRARY :

Initial cost is high:- The initial infrastructure cost of digital library is very high such as hardware, software, networking cost, digitizing equipments etc.

Copyright:- Digitization violates the copyright law as thought content of one author can be freely transfer by other without his acknowledgement. How does a digital library distribute information at will while protecting the copyright of the author?

Physical problems:- One cannot read whole book with the help of the compute. After reading lot of time in front of computer leads eye problem and mental stress.

Environment of library:- Digital libraries cannot reproduce environment of traditional libraries.

Technological problems:- Due to technological developments, a digital library can rapidly become inaccessible.

CONCLUSIONS:

Digital libraries are amongst the most complex and advanced form of information systems. Deployment of digital library requires integration of several information technologies because of many diverse requirements involving creation of digital contents, its organization, ontology, development of interactive interfaces for users, multiple accesses and listings, digital document imaging, OCR, distributed database management, web technology, hypertext, information storage and retrieval system, experts system, intellectual property rights, integration of multimedia information services, management of multilingual collection, data mining, electronic and real-time reference service, electronic document delivery and personalization. Due to these unique challenges and opportunities, the digital libraries are emerging as a growing interdisciplinary area of research and education for information science, computer science, library science and a number of other related disciplines.

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