

A Role of Digital Library in the Engineering Colleges

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Abstract: A digital library, digital repository or digital collection is an online database of digital objects that can include text, still images, audio, video, or other digital media formats. Objects can consist of digitized content like print or photographs. As well as originally produced digital content like word processor files or social media posts. In addition to storing content, digital libraries provide means for organizing, searching and retrieving the content contained in the collection.

Keywords: Digital Library

1. Introduction

A digital library is a collection of documents in organized electronic form, available on the Internet or on CD-ROM disks. Depending on the specific library, a user may be able to access magazine articles, books, papers, images, sound files, and videos. Digital libraries can vary immensely in size and scope, can be maintained by individuals or organizations. The digital content may be stored locally or accessed remotely via computer networks. These information retrieval systems are able to exchange information with each other through interoperability and sustainability.

The term digital libraries was first popularized by the NSF/DARPA/NASA Digital Libraries Initiative in 1994. With the availability of the computer networks the information resources are expected to stay distributed and accessed as needed, whereas in Vannevar Bush's essay *As We May Think* (1945) they are to be collected and kept within the researcher's Memex. The term virtual library was initially used interchangeably with digital library, but is now primarily used for libraries that are virtual in other senses (such as libraries which aggregate distributed content). In the early days of digital libraries, there was discussion of the similarities and differences among the terms digital, virtual, and electronic. A distinction is often made between content that was created in a digital format, known as born-digital, and information that has been converted from a physical medium, e.g. paper, through digitization. It should also be noted that not all electronic content is in digital data format. Library automation reduces the drudgery of repeated manual efforts in library routines by use of library automation collection, storage, administration, processing, preservation and communication etc. Digital transformation is the application of digital technologies to fundamentally impact all aspects of business and society. Most

of these technologies have been applied to existing processes: to digitize or computerize those processes, mainly for efficiency. Digital resources refers to any resource, which is in digitized form. That is which can be read & scanned by means of electronic media. Digital resources do not require separate space in a library as these can be stored in a computer locally or remotely.

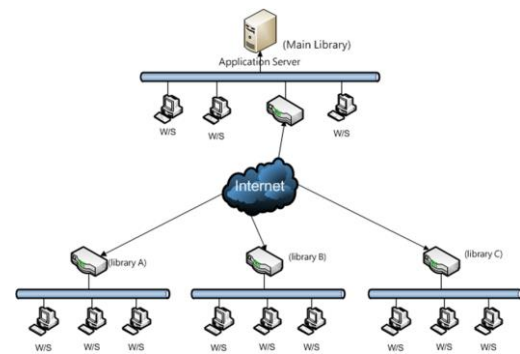


Fig. 1. View of digital library

Benefits that can be reaped from the digital library

1. *Immediate access to resources:* virtual libraries are available anytime facilitate just-in-time learning.
2. *Information updated immediately:* TL able to respond to immediate needs of teachers provide resources at short notice contains up-to-date information.
3. *No physical boundaries:* people from all over the world can access information as long as there is an Internet connection.
4. *Support different learning styles:* Access material in a variety of formats tailored to characteristics of the learner or community of learners range of resources to meet the information needs of different users can be customized for particular schools, grades and subjects.
5. *Accessible for the disabled:* Offers an alternative for those who have physical difficulty accessing resources in a regular library through use of audio and video, resources are made available to the visually and hearing impaired integrate voice, video, and text for users involved in distance education in remote locations.
6. *Present student work:* Share and showcase student work. Student-created art, photography, oral histories to support

local curriculum and compensate for lack of local resources on the Internet.

7. *Information retrieval*: Provides user-friendly interfaces, giving clickable access to resources. use any search term such as word, phrase, title, name, subject to search entire collection.
8. *Teaching tool for information literacy*: Enable to students to find their way more easily around the various search choices as an instructional tool, students learn the skills of selecting and using appropriate search engines, reading URLs and how to use an online database when needed can be taught information ethics i.e. plagiarism, reference sources, copyright issues.
9. *Storage of information*: Potential to store much more information that traditional library. requires very little physical space to contain information.
10. *Networking capabilities*: One digital library can provide a link to any other resources of other digital libraries. A seamlessly integrated resource sharing can occur.
11. *Direct students to relevant resources*. Students spend more time thinking about information rather than participating in time consuming searching
 - That complement the library's print resources
 - customized to meet the needs of a particular school community
 - resources selected to match research topics, age and reading levels of students
 - 365*24*7 library service.
 - Easy retrieval of information
 - Live assistance to the user's requirements
 - Modulation and organization of information in the institute
 - Help students to search and expand their knowledge

Secure system: There are some disadvantages or concerns that need attention and consideration when creating a virtual library.

Restricted by copyright law.

- works cannot be shared over different periods of time like a traditional library
- content is public domain or self generated
- If copyright exists, permission should be requested

Requires connectivity: Instability of Internet sites requires regular checks should be carried out to ensure that web links are still active

- If there is not Internet connection, the VL is inaccessible
- Many people do not have Internet access - the Digital Divide may apply
- May have access to the Internet but lack skill to utilize the available information

Skilled professionals are required:

- To organize, maintain and help students
- Guide students in their selection, evaluation and use of electronic choices

- Need the knowledge of Boolean searching and advanced searching skills

Increased number of resources challenges student selection.

- Purchase of online materials are not tailored for a particular community of learners
- Increased need for instruction in use and evaluation of resources
- Students face difficulty in selecting quality material from the increased assortment of resources

The building of a virtual library requires consideration of both the advantages and disadvantages in order to create an effective library. With careful design and the support of skilled information professionals, virtual libraries can provide a powerful environment for student learning.

2. Literature review

Digital libraries as a means of easily and rapidly accessing books, archives and images of various types are now widely recognized by commercial interests and public bodies alike. Traditional libraries are limited by storage space; digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain it. As such, the cost of maintaining a digital library can be much lower than that of a traditional library. A physical library must spend large sums of money paying for staff, book maintenance, rent, and additional books. Digital libraries may reduce or in some instances, do away with these fees. Both types of library require cataloguing input to allow users to locate and retrieve material.

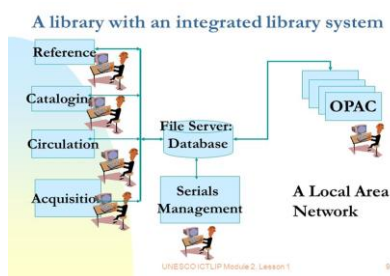
Digital libraries may be more willing to adopt innovations in technology providing users with improvements in electronic and audio book technology as well as presenting new forms of communication such as wikis and blogs; conventional libraries may consider that providing online access to their OPAC catalogue is sufficient. An important advantage to digital conversion is increased accessibility to users. They also increase availability to individuals who may not be traditional patrons of a library, due to geographic location or organizational affiliation. The importance of library automation, which requires planning, designing, and implementation. Library automation reduces the drudgery of repeated manual efforts in library routines by use of library automation collection, storage, administration, processing, preservation and communication etc. Digital transformation is the application of digital technologies to fundamentally impact all aspects of business and society. ... Most of these technologies have been applied to existing processes: to digitize or computerize those processes, mainly for efficiency. One such interesting term is "digitally-enabled learning", or learning that is enabled through digital media, tools or technology. ... A similar term that is sometimes used interchangeably with "digitally-enabled learning" is "digitally-enhanced learning" Refers to the use of computer to automate the typical procedures of libraries such as cataloging and circulation.

3. Suggestions for digital library

Many digital libraries offer recommender systems to reduce information overload and help their users discovering relevant literature. Some examples of digital libraries offering recommender systems are IEEE Xplore, Europeana, and GESIS Sowiport. The recommender systems work mostly based on content-based filtering but also other approaches are used such as collaborative filtering and citation based recommendations. [41] Beel et. al. report that there are more than 90 different recommendation approaches for digital libraries, presented in more than 200 research articles.

Typically, digital libraries develop and maintain their own recommender systems based on existing search and recommendation frameworks such as Apache Lucene or Apache Mahout. However, there are also some recommendation as a service provider specializing in offering a recommender system for digital libraries as a service.

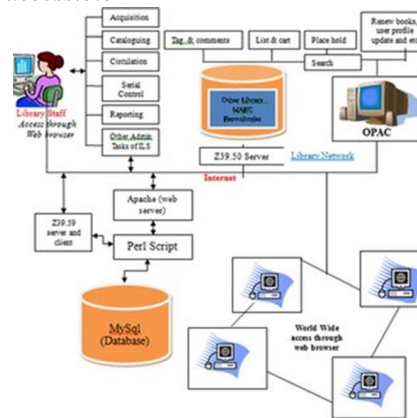
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Digital libraries may be more willing to adopt innovations in technology providing users with improvements in electronic and audio book technology as well as presenting new forms of communication such as wikis and blogs; conventional libraries may consider that providing online access to their OPAC catalogue is sufficient. An important advantage to digital conversion is increased accessibility to users. They also increase availability to individuals who may not be traditional patrons of a library, due to geographic location or organizational affiliation.

- *No physical boundary:* The user of a digital library need not to go to the library physically; people from all over the world can gain access to the same information, as long as an Internet connection is available.

- *Round the clock availability:* A major advantage of digital libraries is that people can gain access 24/7 to the information.
- *Multiple access:* The same resources can be used simultaneously by a number of institutions and patrons. This may not be the case for copyrighted material: a library may have a license for "lending out" only one copy at a time; this is achieved with a system of digital rights management where a resource can become inaccessible after expiration of the lending period or after the lender chooses to make it inaccessible (equivalent to returning the resource).
- *Information retrieval:* The user is able to use any search term (word, phrase, title, name, subject) to search the entire collection. Digital libraries can provide very user-friendly interfaces, giving click able access to its resources.
- *Preservation and conservation:* Digitization is not a long-term preservation solution for physical collections, but does succeed in providing access copies for materials that would otherwise fall to degradation from repeated use. Digitized collections and born-digital objects pose many preservation and conservation concerns that analogue materials do not. Please see the following "Problems" section of this page for examples.
- *Space:* Whereas traditional libraries are limited by storage space, digital libraries have the potential to store much more information, simply because digital information requires very little physical space to contain them and media storage technologies are more affordable than ever before.
- *Added value:* Certain characteristics of objects, primarily the quality of images, may be improved. Digitization can enhance legibility and remove visible flaws such as stains and discoloration.
- *Easily accessible*



View of digital library

4. Previous motivational reviews

IFLA Working Group on Guidelines for Digital Libraries
A special working group was initiated to work on the

preparation of Guidelines for Digital Libraries*. These Guidelines are meant to be a set of standards for libraries which are in the process of building a digital library. Major issues and concerns in the metadata community to be addressed by the working group can be found in the survey on metadata decisions for digital libraries.

- This initiative is co-sponsored by the World Digital Library Project.
- *IFLA/UNESCO Digital Library Manifesto*: The IFLA Manifesto for Digital Libraries was drafted under the presidency of IFLA President Claudia Lux (2007-2009). The Manifesto was then endorsed by the IFLA Governing Board in December 2007 and revised in December 2010. In November 2011, UNESCO formally endorsed the IFLA Manifesto for Digital Libraries at its 2011 General Conference.
- *ICADS-IFLA-CDNL Alliance on Digital Strategies*: In 2007, the board of ICADS, one of the IFLA Core Activities, decided to refocus their actions solely on digital strategies.

@your library®

A. About the Campaign for the World's Libraries

The Campaign for the World's Libraries is a public education campaign of the International Federation of Library Associations and Institutions, the American Library Association and libraries around the world to speak loudly and clearly about the value of libraries and librarians in the 21st century. It is designed to showcase the unique and vital roles played by public, school, academic and special libraries worldwide.

The Campaign for the World's Libraries was officially launched in August 2001 during the IFLA Council and General Conference in Boston, Massachusetts. It is based on The Campaign for America's Libraries, a multi-year public education campaign sponsored by the American Library Association and libraries across the U.S.

Library Associations in over 30 countries and regions have shown interest in the logo, which has now been translated into IFLA's official languages (English, French, German, Russian, Spanish, Chinese and Arabic) as well as other languages such as Armenian, Azeri, Bulgarian, Chinese, Georgian, Icelandic, Italian, Japanese, Kazakh, Korean, Nepali, Portuguese, Romanian, Serbian, Turkish and Vietnamese. No matter the language, the core messages of the campaign remain the same:

- Libraries are changing and dynamic places.
- Libraries are places of opportunity.
- Libraries bridge the world.

Through the consistent delivery of these key messages, the campaign aims:

- To raise awareness about the variety of programs and services offered;

- To increase use of libraries at schools, at colleges and universities, in government, at work, and in daily community life;
 - To increase funding for libraries;
 - To involve librarians as stakeholders on public policy issues such as intellectual freedom, equity of access and the "digital divide;"
 - To encourage librarianship as a profession.
- Through outreach efforts, the campaign targets:
- General public -- parents, children, students, senior citizens and business people;
 - Educators, school groups and administrators;
 - Government leaders, policymakers and opinion leaders;
 - Librarians and those who are considering the library profession; media;
 - Strategic partners, including funding agencies.

B. Ways to use the @your library brand

Now that you have interest in the @your library campaign, learn how to take full advantage of the slogan and incorporate it in many aspects of your library! Here are some promotional ideas:

- Feature it on Associate Websites
- Promote National Library Day or Week
- Incorporate into Summer Reading programs

Target a specific group or audience on the value of libraries

- Public Library Outreach to Farmer, in which the Rolling Prairie Library System of Decatur, IL, promoted the agrarian resources available in libraries with "Think outside the barn @your library."
- ALA has created a website devoted solely to the Kids Campaign with all kinds of tools and activities, with the slogan "So Much To See, So Much To Do @your library."



Create partnerships to expand message (anything from investing, to magazines, to products, to information)

- ALA partnered with University Radio to develop a new campaign in response to data showing that Latinos are less likely than other groups to use their local libraries. So together, ALA and University Radio began to air public service radio ads across its network of 70 stations in the 16 Latino markets nationwide.
- ALA partnered with Walgreens to promote health literacy, and since then, 16,400 public libraries have received brochures on the new Medicare Drug Discount

Card, and 10 libraries have received grants from Walgreens to host healthy literacy seminars with valuable information and resources.

be well
informed



@ your library

Help with government programs

- Libraries and the Campaign can help governments raise awareness and provide support for problems in society
- Public libraries receive grants to engage in financial literacy programs, or "Smart Investing."



For example, the Campaign worked with the Argentinian government to fight drug addiction.



Utilize the campaign on social networking sites: blogs, YouTube, Face book, Twitter, etc.

- Co-sponsored by IFLA and ALA
- Integrate the logo into your library/organization's letterhead, business cards, fax cover sheets and email WAY signature.
- Incorporate the phrase @ your library into press releases, fact sheets, speeches, presentations, letters-to-the-editor and op-ed/opinion articles.
- Integrate the logo into your annual report: this (last) year @ your library.

Encourage staff to answer the phone by saying:

- "Reference at your library"
- "Children's room at your library"
- "Periodicals at your library."

C. Program @ your library

Use the brand on flyers and brochures to promote special programs and services at your library/organization. Examples:

- Art exhibits @ your library
- Lectures: (name of guest speaker) @ your library
- Story hour @ your library
- Homework help @ your library
- Back to school night @ your library
- Government information @ your library
- It's just not academic @ your library
- 24/7 @ your library.

D. Promote @ your library

Create new library cards using an @ your library slogan:

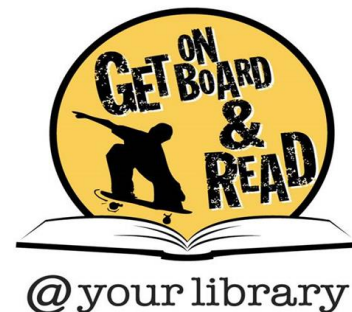
Check it out @ your library.

Something for everyone @ your library.

See what's new @ your library.

The best school supply of all is @ your library.

- Create a bulletin board where you post flyers, announcements and programs and call it today @ your library, this week @ your library, this month @ your library. You can also use the same concept to title a calendar of events page for your Web site or newsletter.
- Create book displays and/or booklists for adults and children and call them: good reads @ your library.
- Create bookmarks that use the @ your library logo. You might want to create a slogan that says: find your place @ your library.
- Thank volunteers by creating promotional items such as t-shirts that say: volunteer @ your library.



E. Use the computer @ your library

Post the logo on your library/organization's Web site. Use the brand as a standalone logo or create a slogan such as:

- You're online @ your library
- Untangle the Web @ your library
- Get connected @ your library

Create a display for your computer workstations with slogans such as:

- Log on @ your library
- Get wired @ your library
- Try surfing @ your library

F. Especially designed @your library

For special/corporate libraries:

Create placemats for your company cafeteria that say food for thought @ your library or stuff pay checks with bookmarks that include the logo and a catchy phrase.



- *For school libraries:* Use the logo to demonstrate the relationship between the curriculum and the library by creating a poster or other promotional item that says: Get more out of class @ your library. Do homework. Research your term paper. Surf the Web.
- *For school and college libraries:* Use the logo to promote studying with Make the grade @ your library.

For college and university libraries:

- Use the logo to promote doing research
- Theses and dissertations @ your library
- Research made easy @ your library
- Manuscripts @ your library

Work with the media: @your library

- Download one of the print PSAs available on the Campaign Web site or create a print PSA of your own for your local newspaper. Ask the newspaper to donate space to run the piece if you don't have an ad budget.
- Work with your local television station to create broadcast ads that incorporate the logo. Or collaborate with an outdoor display company to create billboards or bus cards using the @ your library brand.
- Run a weekly ad or ask your local newspaper to donate space either in the movie theatre section or the literature section. Design an ad with the title, "Coming Soon @ your library" and list the newly acquired books, videos, CDs, databases, programs and services that will soon make an appearance @ your library.



@your library

For more information about the U.S. campaign, including how to subscribe to a discussion list for the latest updates, visit the campaign Web site at www.ala.org/@yourlibrary
More Success Stories!

G. Campaign for the World's Libraries Spreads

Since its launch in 2001, the American Library Association (ALA) and the International Federation of Library Associations and Institutions (IFLA) have worked together to promote and highlight the 'Campaign for the World's Libraries.' The public awareness campaign is designed to showcase the unique and

vital roles played by public, school, academic, and special libraries worldwide and to speak loudly and clearly about the value of libraries and librarians in the 21st century.

Taiwan gets real for its campaign

In Dec. 2010, The Library Association of the Republic of China (Taiwan) joined the Campaign for the World's Libraries. The Campaign external goals are under the unified brand to provide a face to the public of the vitality of the libraries and various services now being offered. The campaign started with two major projects. First, 'REAL @ your library' unveiled at the opening of the incredible new National Taichung Library in May this year. 'REAL @your library' summarizes and exemplifies the four library visions: R for Reading, E for Exploration, A for recreation, and L for Learning.

The slogan was featured prominently during grand opening activities, and is displayed at the top of the library's website. 'Real @ your library' also now appears on library cards, and on posters for any presentation at the library.

The second initiative, started in June 2012, all public libraries hosted "Caldecott Medal Winners and Honor Books Exhibition @your library" with exhibitions and programming around the books selected by Association of Library Services to Children (ALSC), the children's services division of the American Library Association.

The focus on children's literature continued through April 2013 with 'Enjoy Picture Books @ your library.' Each month during the year specific winners collections will be highlighted through integrated promotion- posters, brochures, etc. In August the focus was on the works of the recently passed Maurice Sendak. His books will be featured in different languages, e-books, and artworks, with corresponding lectures and workshops.

H. Latvia

In 2010 the Latvian National Commission for UNESCO, Latvian National Library and Library Association of Latvia organized campaign "Pasaule t@vā bibliotēkā" ("World @ Your Library"). Libraries from all of Latvia took part in the campaign and encouraged children and young people to enquire about exotic places and cultures. The Library Association of Latvia has gained valuable experience and are continuing as second phase of their campaign The association created a web page for the campaign at www.stastulaiks.lv where in a special world map places learnt about at libraries of Latvia are noted.

The 2011 theme for the campaign "Pasaule t@vā bibliotēkā" ("World @ Your Library") is the study and promotion of world cultural heritage and it has two main objectives: firstly, to promote Latvian libraries as a modern information resource, to invite children and young people to learn about other countries and cultures by reading books and maps, and using all the resources available at the library, and, secondly, to encourage children and young people to learn about the world, to promote understanding about world cultural heritage (based on UNESCO's world cultural heritage list). UNESCO's world cultural heritage list contains more than 750 objects of culture

and nature. The uniqueness and beauty of these places describes the diversity of our planet and its inhabitants.

I. Barbados

The Library Association of Barbados (LAB) got involved with the Campaign for the World's Libraries in 2010 to make a commitment to expose the public of Barbados to the values of the Campaign and to highlight the roles of libraries and the work of librarians.

The Committee, with the assistance of the Library and Information Association of Jamaica (LIAJA), which had developed a similar campaign decided to launch a poster competition. The competition was geared towards young people and would allow them to express how they saw the library in their community through the theme, "Building Strong Communities @your library." The competition was launched in September 2010 and was divided into 3 age groups.

There were over 300 entries in the various age groups. This poster competition was very successful, not only from the point of view of the entries and the attention that it received but also from the level of corporate sponsorship for prizes!

The posters were printed and distributed across Barbados in schools, supermarkets, stores, bus stations and other public spaces. The Library Association of Barbados met with the State owned Transport Board, who agreed to partner with LAB and have allowed the use of the sides of two buses to display the posters and any other relevant messages.

As part of the overall strategy, LAB is engaged with the Association of Guidance Counsellors, who run several careers showcases throughout the year in the various schools, in order to make them aware that librarianship is a viable and rewarding profession. It is hopeful that there will be a heightened awareness of the roles of libraries and librarians as LAB continues its programmes.



IFLA is building a new strategy from the bottom up, one that will be a source of inspiration for its key actions. By contributing to the IFLA Global Vision Ideas Store, you have the opportunity to help define the future directions of IFLA. Everyone is welcome to contribute ideas that will help define the strategy. Our online platform for collecting ideas is available in all seven IFLA languages and submissions can be made in any of those languages.

The challenges facing the library field from ever-increasing globalization can only be met and overcome by an inclusive, global response from a united library field. This is why IFLA has engaged thousands of librarians and library friends in IFLA's Global Vision discussion – a venture that will generate a united library field roadmap for the future. There has never been such an initiative before, which gives every single

librarian in the world the chance to contribute. With feedback and input from 190 UN Member States, we are already on the best way to create together, with you, the Global Vision of a strong and united library field powering literate informed and participative societies. It's our vision, our future

5. Defence Scientific Information and Documentation Centre (DESIDOC)

Defence Scientific Information and Documentation Centre (DESIDOC): DESIDOC started functioning in 1958 as Scientific Information Bureau (SIB). It was a division of the Defence Science Laboratory (DSL) which is presently called as Laser Science & Technology Centre (LASTEC). The Defence Research and Development Organisation (DRDO) library which had its beginning in 1948 became a division of Scientific Information Bureau (SIB) in 1959. In 1967 SIB was reorganised with augmented activities and named Defence Scientific Information and Documentation Centre (DESIDOC). It still continued to function under the administrative control of Defence Science Laboratory (DSL).

Defence Scientific Information and Documentation Centre (DESIDOC) became a self-accounting unit and one of the laboratories of DRDO on 29 July 1970. The Centre was functioning in the main building of Metcalfe House, a landmark in Delhi and a national monument. In August 1988 it moved to its newly built five-storied building in the same Metcalfe House complex. Since it became a self-accounting unit, DESIDOC has been functioning as a central information resource for DRDO. It provides science & technology information, based on its library and other information resources, to the DRDO headquarters, and its various laboratories at various places in India.

- *Organization:* DESIDOC has been divided into various sections such as Documentation Section, Translation Section, Reprography Section, Technical Section, Administrative Section, Library Section, Multicopier Section, Publication Section, etc.
- *Services and Facilities Available:* The main services of DESIDOC.

6. Conclusion

The Digital Library Management software (DLMS) present an easy to use, customizable architecture to create online digital libraries. With these institutions/organizations can disseminate their research work, manuscripts, or any other digital media for preservations and world over dissemination of digital items. The software's discussed above present different services and architectures. It is difficult to propose one specific DLMS system as the most suitable for all cases. The study can be used as a reference guide by any organization or institute to decide which one will be ideal for creating and showcasing their digital collection. The choice usually depends on type/format of material, distribution of material, software platform and time frame etc. for setting up a Digital Library.

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