
Information Resources in DL: Issues and Opportunities

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Abstract

This paper is to assess the various kinds of information resources in DL which are available, their features, management selection policy these resources.

Keywords : Digital Library; Information Resources; Information Policies; Intellectual Property

0. Introduction

Information is being treated as a commodity and as an intellectual services today. The constant changes in the technology have a direct impact on the library and information service. This is clear and marked difference that information services has crossed national boundaries with the rapid progress in telecommunication technology. The demand for information and its method of supply have undergone a sea change with the advent of e-resources. On the basis of experience as well as literature survey, it has come to our knowledge that university libraries, R&D institutions libraries professionals societies and associations want to assist end users to achieve excellence in their academic, R&D and consultancy efforts and activities for this they are deeply engaged to build e-sources their respective areas.

1. What is DL

The concept is really modern and impressive but not as simple as it seems to be. There are several exciting and expert opinions around this phase. The digital libraries are defined by various people depending upon the kind of resources it deals with, types of users it caters to and goal and objectives of its very existence.

In simple words a digital library is any information, which is organized on the computer and is accessible through a network. The information is always a managed collection and is stored in digital formats. The information can range from tiny to huge with varying types or formats of resources.

1.1 Definitions

- Ray R. Larson- "*Digital library is a global virtual library*"- *The library of thousands of network electronic.*
- The working Group of the U.S Government Information Infrastructures Technology and Applications- Digital Libraries as the system providing users with a access to a very large, organized repository of information and knowledge.
- Sun Microsystems – Digital Library as the electronic extension of functions users typically perform and the resources they access in a traditional library.

1.2 Types of information resources in Digital Library

On the basis of literature survey we know that information resources in DL are very powerful dynamic and essential to any library. We find various types of information sources in DL. The following major types of information sources are listed :

E-Journals	Library Networks	Bulletin Board
E-Books	Data bases	Virtual Conferences
E-Groups	Library websites	Web Exhibitions
E-lists	FAQs	Virtual help desks
Search engines	Web OPACs	CD ROMs
Web Rings	Digital Archives	

1.3 Features of Information resources in DL

- | | |
|--|---|
| 1. Cost savings | 2. Globalised reach |
| 3. On line administration | 4. Easy to revise, manipulate and merge |
| 5. Raise users productivity | 6. User can use the same information |
| 7. Increase retention and comprehension place easily copied, stored & disseminated | 8. Resources @ the same time any |
| 9. Inter-publishers reference linking | 10. Use bulky than paper |
| 11. Maintenance of updated information | 12. Speedily delivery |
| 13. Create interaction between remote users | 14. Add value to services |
| | 15. User satisfaction |
| | 16. On demand publication. |

1.4 Need for information resources management in DL

In the advent technology world, the libraries have become DLS.

A key concept behind digital libraries is how multiple entities can come together, with out the end users even realizing it at times, to provide the user with final information creating a win-win situation at all times. Such a move would obviously requite immense sharing of responsibilities information traditional boundaries as we know between libraries will become immaterial

1.4.1 At the macro level

The libraries will be characterized by partnerships between departmental libraries, coming together to pool their resources to create the ultimate experience for the users. The relationships will requite an unforsean amount of trust, compatibility and symbiotic relationship

1.4.2 At the micro level

The modern DLs would consists of people working in small independent sections, over coming the restrictions of time and space by the use of modern communications and technology. They would move always from the definitions of employee and serve the users with self confidence.

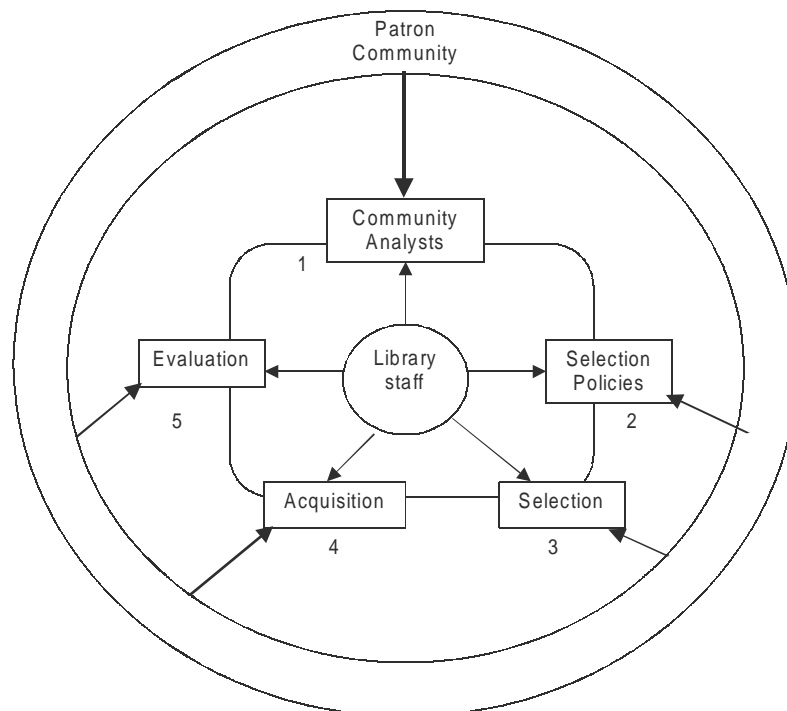
Such integration is possible only when the resource and database of the libraries are linked electronically to provide the desires services hence information resources management in DL have to be effectively.

2. Collection development

Collection development is the process of meeting the information needs of the people in a timely and economical manner using information resources locally held, as well as from other organization. To serve the users library performs many functions. On of the very important function of a library on which all

other functions are depend is the collection development. The quality in collection is more important than the quantity therefore it needs careful planning and systematic approaches.

Feng states “ to decide what to select and what not to select required the courage to chose what to have, and what not to have however the courage to choose what to have, and what not to have however tempting, and a sound collection development policy provides such a rational & a remedy lest vanity, or timidity leady to astray.



Collection Development Process

3. Policy

- **Community Analysis :** The community of any library includes the faculty members research scholars, and students. To assess the needs of the user groups direct discussions will be held with the faculty members as and when required. The view of research scholar and other users are also gathered from different services point of the library.
- **Selection :** Based on the recommendation of the chairman from different faculties selection will be made in vie the availability of budget and interlibrary loan facilities. In addition to this the quality of the product services and modes of services should be taken into consideration.
- **Acquisition :** Now the information is available through LAN/ WAN, via wireless network, which has crossed the earlier barrier of time, speed and provides easy and smooth access. The predefined

format for print the fund allocations formulas, cannot be used in case of E-information. The policies and procedures of e-Information resources, their acquisition, management account technical issues, licensing MOU, negotiation, control access, downloading availability at LAN, security issues IPR, etc. needs to be addressed separately.

A number of abstracting indexing journals databases full text journals, monographs, periodicals, patents, standards etc in the form of CD-ROM or online.

Library may subscribe the databases either in the form of CD-ROM version (stand alone or networking) or online (single site license, multiple license/ consortia site license) which are available to the different publisher with different retrieval software, different coverage different price. Therefore library in charge should thoroughly study the following feature through checklist while subscribing the particular databases. The check lists composes the following parameters: Databases contents, currency, back-files, installation, retrieval software and indexing, use interface, post processing data access time cost, standardization.

- Access : The sources of access can be via publisher or aggregate or approved vendor. Making library users aware about the e-information. Access through bulletin board services, or through library home page. The requirement of enabling technology as also in issue, which needs to be addressed.
- Pricing : The pricing models for subscription of e-information resources various from vendor to vendor, publisher to publisher. It is different in consortium mode of acquisition. There is a need to have a watch in the variation of pricing

Organization of E information resources : It is necessary to organize e-information keeping in view the priorities and preferences of specific institutions and users. For example an institution in area of physics should identify e-information resources first in physics and then related subject electronics engineering keeping this view. The electronic citation sources provide great help to our users in citing papers electronically

- Weeding out : It is a process by which the information identified as unused and found no longer in use are with draw. It will help to maintain currency in the collection. The faculty member's users were invited and requested to suggest their views in weeding out of these information resources.

4. Retrospective conversion of collection in Digital form

There are certain steps in the process of digitization. It follows

- To select the document to be digitized
- To scan the document selected in the first step. For the purpose of scanning digitizer is used. The scanner looks at a page and divides it into a very large number of extremely small elements. Called picture elements, pixels or sometimes dots
- To enhance the images of the document by image processing. Images of the document are analyzed enhanced and reconstructed in this page.
- To assure the quality of images (Quality Assurance) Quality assurance is nothing more than ensuring that the images are clear and legible at that all the information is included in this bitmap. It may be important to assure that these is no skewing of the images or that these are no dropout colours.
- To save the image file (uncompressed) in an appropriate file format.

- To format the image file.
- To compress the images in order to economize on storage space.
- To CC Red for convert the content data on the images to ASCII data. OCR systems usually first receive a page image as input then they segments out characters, and finally they recognize these characters.
- To index the document by indexing software package that indexes every word in the imaged document for locating archived information. Indexing must be carefully panned to make any document management solution work and data is linked to the scanned images to enable fast and accurate retrieval.
- To store image file onto a long-term high capacity storage medium (such as tape or optical disk) etc.
- To retrieve the document stored on high capacity storage medium.
- To publicize the digital document. It can be converted into HTML and publish it on the web.

5. Advantages of using the E-information

- The e-information are minimizing the labour & time of the resources and other users with the following effect.
- Easy and effective retrieval search
- Downloading the text image, audio with the MM concept
- Current information
- Quick access thro' efficient search engines,
- Teaching & learning process in a live manner
- Teleconferencing
- Retrieval thro' web indexing/ Mete data
- Meet the people of the subject specialization
- Vast statistical data

6. Challenges facing the E-information sources management

1. Preservation
2. Legal issues
3. Lack of professional skills key skill for digital librarians
4. Lack of co-operation amongst librarians
5. Lack of resources
6. Lack of expertise
7. Lack of manpower training
8. Information explosion on the Internet
9. Technology change
10. Political & social constraints

6.1 Preservation

Digital data does not have a long enough natural lifetime for us to wait for better medias to come along. Even today we have not achieved stability in date storage technology. Effects should be made for the survival of digital data for longer duration right from its birth. This is kwon as the 'retention-intention' Data-

preservation cannot and must not be left to chance. Born-digital data, which has no analogue counterpart, is at higher-risk.

6.1.1. Data Preservation Methods

- **Technology preservation** : Technology preservation is not a practical approach in for data preservation as it is financially unfeasible to go for regular cycle of media refreshing i.e. maintenance of hardware and software platforms that support digital resources.
- **Refreshing** : Refreshing involves periodically moving a file from one physical storage medium to another to avoid physical decay or the obsolescence of that medium. It is a process that needs to be carried out whatever other preservation strategies are adopted. Refreshing is technically relatively straightforward, which has low risk of loss if performed and documented properly.
- **Migration and Reformatting** : Migration is an approach that involves periodically moving files from one file encoding format to another that is usable in a more modern computing environment example word star file –word perfect- word 3.0 word 5.0 – word 97.0
- **Migration** involves changes in the configuration of the underlying data, without change in its intellectual content. Migration is must when H/W and S/W up gradation make data un-accessible.
- **Emulation** : Emulation is the process of re-creation of the H/W and S/w environment required to access a resource. Its approach is more focused on the application w/s rather on the files containing information. It would be theoretically possible to emulate either the hardware (H/W) or software (S/W).
- **Data Archaeology** : Data archaeology involves recovery of data on, using better techniques available in future depending upon the value of data. This becomes necessary rescue a digital resources that has not been migrated but contains total information or to which some unforeseen disaster has occurred.
- **Output to analogue media** : Output to analogue media basically incorporate microfilming before the digital imaging is done. This provides a preservation copy in an analogue format and circumvents some of the concerns over the longevity of the digital files. The method employed in this process is termed as “computer output to microfilm” or com”
- **Security** : Data security in digital form is the most pressing challenge of digital libraries. Piracy of databases, virus invasion parallel satellite networking stress is some of the problems for which solution is needed.

6.2 Legal Issues

6.2.1 Intellectual Property Right

Intellectual Property Right (IPR) protects ideas or information of commercial value. It plays a crucial role in the information market, as information being an intangible asset is easy to copy. In digital libraries, which contain information mainly in digital or electronic form, copyright issues are, in fact going from bad to worse. Obtaining a copyright of electronic information is easier than print as it can be done without human identification of the publishers author and uses. Even the author himself can act as user as well as publisher and visa versa.

One of the major issues surrounding the development routine electronic interwoven network of content provides is balancing the needs of people to protect their rights to their creative and intellectual work with the need of the public to be able to access those work. These are many IPR issues in digital libraries concerning databases, computer software programmes and the administration of copyrights.

Copyright has been the focus of protecting intellectual property on the Internet. As such, there have been both technological (IPR/encryption wrappers) and legislative efforts to continue incentives for authors to create useful works. Contributory infringement (and the consequential liability) is one of the most contentious areas of the copyright debate. For instance is an ISP liable for contributory infringement when it allows its users to link to hacker sites? If an ISP closed a user's account when informed by an IP owner would the ISP be liable for the violation of civil rights or breach of contract.

- Some of the issues to consider are
- Before digitizing a document it should ensure that the work has been licensed for reproduction. Authorization should be obtained from the author of work.
- Since the digitizing of an existing document is also reproduction it should also ensure that they hold the right to digitize the document.
- The issue of protection of digital documents has attracted considerable attention, and a number of technologies including watermarking, encryption, digital syntax and fingerprinting have been developed and are marked.

6.2.2 IFLA position on copyright in the digital environment

IFLA is an international non-governmental organization (NGO) which exists to undertake, support and coordinate research & studies and disseminate information about all aspects of library and information work worldwide and to organize meetings and training in this field.

In order to maintain a balance between the interests of right holders and users IFLA has developed some principles. The summary of the principles is as follows.

- Summary of principles

In order to maintain a balance between the interests of right holders and users IFLA has developed the following state of principles.

1. In national copyright legislation exceptions to copyright and related rights, allowed in the Berne convention and endorsed by the WIPO treaties should be revised if necessary to ensure that permitted users apply equally to information in electronic form and information in print.
2. For copying over and above these provisions there should be administratively similar payment schemes.
3. Temporary or technical copies which are incidental to the use of the copyright material should be excluded from the scope of the reproduction right.
4. For works in digital format, without incurring a charge or seeking permission all users of a library should be able to.
 - Browse publicly available copyright materials
 - Read, listen to, or view publicly marked copyright materials privately, on site or remotely;
 - Copy or have copied for them by library and information staff a reasonable portion of a digital work in copyright for personal educational or research use.
5. Provide access to digital format of a protected work to a user for a legitimate purpose such as research or study should be permitted under copyright law.

6. The lending of published physical formal digital materials (for example CD-ROMs) by libraries should not be restricted by legislation.
7. Contractual provision for example with in licensing arrangement should not override reasonable lending of electronic resources by library staff.
8. Legislation should give libraries and archives permission to convert copyright protects materials into digital format for preservation and conversation related purposes.
9. Legislation should also cover the legal deposit of electronic media
10. National copyright legislation should render invalid any terms of a license that restrict or override exceptions or limitations embodied in copyright law where the license is established unilaterally by the right holders without the opportunity for negotiation of the license by the user.
11. National copy right law should aim for a balance between th rights of copyright owners to protect their interests through technical means and the right of users to circumvent such measures for legitimate, non infringing purpose.
12. Copyright law should enunciate clear limitations on liability of third parties in circumstances where compliance cannot practically or reasonably be enforced.

6.3 Key skill for digital librarians

For the management of E –information resources following key skills are necessary for librarian in digital age.

- Subject skill
 - Management skills
 - Technical skills
- Subject skills : Subject skills are implicit to a notion of librarianship and they do not vary when we shift from analogue work to digital works.
 - Management skills : Management skills for librarians has crossed the boundaries of resources management and now includes project management, system implementation and fundraising
 - Technical skills : As identified by Termnant (1999) the key skills in this area are knowledge of imaging technologies, OCR markup language, cataloging and metadata indexing & database technology, user, interface design, programming, web technology.
 - Lack of co-operation amongst librarians : There is a lack of cooperation among librarians, because all librarians have different attitude . some of them have their own ego, this problem are facing mostly in present position.
 - Lack of resources : Mostly libraries have insufficient fund for its development, so there is lack of information resources which needs users and also human resources to manage the library. Due to the lack of human resources users do not get their needy information rightly and timely .
 - Lack of expertise : There are only limited supplied for digital materials over the whole world. Farther, as there is frequent tech change these is lack of experts to handle and operate the latest technology both in India & abroad.

- Lack of Manpower Training : Librarians have not attained suitable recognition in any organization in which these exist due to lack of proper care by the authorities. With the passage of time the knowledge of library staff is to be refreshed for accepting challenges of electronic information environment and without upgrading their skills the library professionals become unsuitable for adopting new technology like digital technology in libraries. Therefore the concept of inform resource management in DL without proper refreshing the skills of library personnel appear impossible.

Professional skills required.

- Theoretical knowledge of digitization and digital library
 - Understanding of digital library
 - Ability to handle digitizing devices
 - Knowledge of copyright laws and patents act. Knowledge of Language
 - Under standing of asset and content management technologies.
 - Technical expertise in operating digitization hardware and software
 - Experience with image scanning, processing and quality control.
 - Public relation skill
 - Translation skill
 - Training and consultancy skill
 - Skill of evaluating the quality of the information
 - Sill of protection right
 - Skill of planning, designing and maintenance economy of space time and money
 - Skill of acquiring information form diverse resources
 - Skill of operating the complex technology with in which the information is embedded
 - Skill for cataloguing and documentary digital objects.
 - Skills to develop and maintain WWW files.
 - Skill of linguistic and logistic are needed to formulate information needs and make them explicit in a form understandable by the system and also to read, decode and interpret electronically provided information.
- Information explosion on the Internet : As the digital library are working through internet and other network, therefore there are facing a large amount of unless information in the networked environment which leads to wastage of valuable time of information society, that is also against the 4th law of library science.
 - Technology charge : In these days information technology skills and applications are changing and developing fast. To survive digital libraries need the latest technology. Hence, more and more investment is necessary for digital library to update their tech.
 - Political & social constraints : Many libraries have many components of digital library such as locally developed database acquired foreign/ Indian database with the librarians equipping them solves to meet the requirements, but these libraries will not quickly be able to offer fully electronic library services because of political & social hurdles

7. Conclusion

Today since the need of better knowledge management is felt, the library and information Science professionals should update themselves. The need of the hour for libraries in to have, may not be an

advanced system like in the western countries, a working and reliable information infrastructure. The vision of the future should be an environment that encases people and these information devices to connect and communicate with each other at all time. It can be felt that user could be more satisfied if DL library has effective management of Inf. Resources. With effective management of Information resources DL set excellence in collection and services. Librarians can identify the staff to take initiatives to have comprehensive and interactive web site for their libraries and develop fruitful collaboration with other libraries for devolving effective and efficient information services and solution.

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