
THEME PAPER**VIRTUAL LIBRARY: AN OVERVIEW****MUTTAYYA KOGANURAMATH****Abstract**

Most of the Libraries today, offer a wide range of on-line services to their users. And, now, the internet and web technologies are not the new things to any academician hence, it is the time for a Library to be virtual and develop its on-line presence in order to further facilitate and enrich the educational processes. In this direction, Virtual Libraries provide a new way of serving the new generation users of the libraries. Virtual libraries are the new vision of libraries of the future. This paper provides an overview of a Virtual Library System. It narrates purpose, features, functions, design and development of a Virtual Library and Virtual Library Environment. Impact of 'Virtual Library' on 'Lifelong Learning' has also been emphasized. It also enumerates principles of development of Virtual Library Collection and advantages of Virtual Libraries. Notably, suggests and advocates for the Virtual Library of India to be hosted by the INFLIBNET Centre.

Keywords : Virtual Library/ E-Learning/ Knowledge Society/ INFLIBNET

“Ultimately ... libraries as we know them seem likely to disappear. Facilities will still exist to preserve the print-on-paper record of the past, of course, but they will be more like archives, or even museums, providing little in the way of public service. As for the electronic sources, libraries may have an interim role to play. ... In the longer term, it seems certain that the libraries will be bypassed. That is, people will have very little reason to visit libraries in order to gain access to information sources.”

F. W. Lancaster (1983)

1. Virtual Library

Virtual Library is another kind of Digital Library which provides portal to information that is available electronically elsewhere. This is referred so to emphasize that the Library does not itself hold content. Librarians have used this term for a decade or more to denote a Library that provides access to distributed information in electronic format through pointers provided locally.

A Virtual Library has been defined by Gapen (1993) as, “the concept of remote access to the contents and services of libraries and other information resources, combining an on-site collection of current and heavily used materials in both print and electronic form, with an electronic network which provides access to, and delivery from, external worldwide library and commercial information and knowledge sources”. The speedy and wide access to current information contents makes virtual libraries a global symbol of the information access paradigm.

The Virtual Library has changed the traditional focus of librarians on the selection, cataloguing and management of information resources such as books and periodicals. The virtual library is putting emphasis on access without the need to allow for the time required by these technical processes. Virtual Libraries have induced libraries, scholars, publishers and document delivery vendors to develop new partnerships that are working for the good of scholarly communication in both developed and developing countries.

2. Purpose of the Virtual Library

In general, the purpose of a Virtual Library is to underpin learning and acquisition of knowledge, to provide a more solid basis for education and to enhance quality of life by drawing on digitally available (preferably on-line) books, materials and journals via ICT-based tools. A Virtual Library provides remote (on-line or CD-ROM-based) access to a variety of national and international content (e.g. curricula, learning materials, books, journals, magazines, newspapers), services traditionally offered by libraries and other information sources. Virtual Libraries thus combine materials in electronic format with an electronic network which ensures access to and delivery of those materials.

To become an effective educational tool in the public service, it must respond to the needs of and provide affordable access for prospective users - students, teachers, researchers and academics. Emphasis should be given to building up collections that are in the public domain and that are accessible through, e.g., applications of free software on the basis of affordable Internet tariffs.

3. Features of a Virtual Library

1. It provides speedy and wide access to updated information in a global manner.
 2. It has changed the traditional library system of cataloguing only book materials.
 3. Cataloguing of NBM (Non Book Materials) includes not only databases but also websites.
 4. Greater emphasis is on access and not on collection.
 5. Time saving
 6. It results in a creation of digital divide because only developed countries with strong funds for automation and fulfilling infrastructural requirements for Virtual Library can afford to support Virtual Library services.
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4. Functions of a Virtual Library

The function of a Virtual Library is to ensure the systematic development of the means to collect, store, and organize information and knowledge in digital form and to provide easy and affordable access to it around the clock from various locations. In general, a Virtual Library should:

1. provide ICT-based access to a range of digitally available publications for educational purposes available in the public domain and from other sources;
2. provide access to distance education materials;
3. contribute to the efficient delivery of information to students, researchers and teachers of all universities and other educational institutions;
4. strengthen communication and collaboration between and among the research, library and educational communities, nationally, regionally and internationally;
5. offer lifelong learning opportunities.

5. Virtual Library Environment

The Virtual Library Environment means virtual teams; virtual communication and the electronic environment are now a reality for the library. Users are able to view and request information resources either from the library Intranet site or over the Internet and contact staff by phone and e-mail for more general research requests.

Library services will entirely be virtual. Delivering virtual information services differs from traditional information service delivery in the following areas:

Clients are unable to visit the library to preview resources, collect material or access resources such as databases. All communication must be conducted through e-mail, phone or fax. Information literacy training must be delivered innovatively, as traditional face to face training sessions are no longer possible. Even several libraries have developed 'tele-training' sessions, which are training sessions delivered via telephone link-up in areas such as using library's electronic sources and searching networked databases through their Intranets or Internet.

There is an increased dependence on information technology to access information resources. As a result, library users often expect technical support from librarians, and queries regarding network and access problems become increasingly common. This means librarians must keep abreast of current technical developments and know when and where to refer clients with problems beyond their knowledge.

These differences have a number of implications for the virtual library, such as an increased emphasis on value added information. This information should be easy to locate using tools such as the corporate Intranet. This allows users to clearly discern which information is most relevant to their work practices, without the benefit of face to face communication. Marketing assumes an increasingly important role in the

virtual library as users are potentially less aware of the library than if it were located in close proximity.

Given the differences from traditional library services, there are a number of key components for successful service delivery in the virtual environment:

- 1. Maintain interaction with clients :** The Virtual Library needs to maintain a 'human presence' by balancing both telephone and e-mail contact. Using e-mail exclusively changes the users' service style that users are accustomed to and increases the likelihood of lengthy correspondence.
- 2. Continued Visibility :** The Virtual Library has to maintain an everyday presence in the virtual environment by activities including: posting news items on the Intranet home page, writing feature articles for the newsletter etc. and inviting people into the library when they are traveling in the vicinity.
- 3. Policies and Agreements:** Users are often unsure of the service boundaries in the virtual environment. Highly visible policies outlining the virtual library's role and service level agreements means both parties have clearly defined roles and responsibilities. The Virtual Library's service level agreements and policies detail the services provided by the library, clients' obligations, request turnaround times and borrowing privileges etc.

Virtual teams have been defined as those which 'transcend distance, time zones, and organizational boundaries'. Virtual Library may have many virtual teams with team members located in different locations, working to accommodate varying time zones and technical infrastructure.

The virtual environment has had a dramatic impact on the way team members operate. As emphasized by Cascio (1999) who believes one of the most challenging aspects of virtual teams is the absence of physical interaction and the lack of synergy associated with verbal and non-verbal communication (Cascio, 1999). As with servicing remote clients, working in the virtual team increases the importance of communication and willingness to interact via new electronic tools (Mohrman, 1999).

6. Virtual Library and Lifelong Learning

The use of multimedia systems is embedded part of a process of lifelong learning through the Virtual Library. The Virtual Library appears to offer substantial benefits to lifelong learners over both formal study and conventional open learning. Virtual lectures in particular provide an advanced interactive learning tool with distinct advantages in terms of engagement and flexibility. Students benefited from the interactivity of the environment and its self-assessment facilities. They also welcomed being able to study in their own location, time and at their own pace. The virtual lectures have a number of advantages including interactivity, adaptation, simulation, demonstration and integration. They facilitate active learning rather than the more passive learning associated with conventional open learning materials. The Virtual Library aims to be subject neutral.

Further trials are needed to compare the reactions of students from less technology-focussed disciplines. The virtual seminars were not fully utilised by students although they believed them to be a useful facility. Further investigation is necessary to establish whether students found the virtual seminars useful for dissemination of information other than teaching material. This might in part explain the students' positive attitude but under-utilisation of the discussion boards. Other trials will involve distance learning students. This allows testing of the hypothesis that the use of virtual seminars is reduced when face-to-face problem classes are also provided. A survey will also be conducted to investigate the use of virtual tutorials. Taken together, this will allow a comprehensive assessment of the benefits of the Virtual Library for lifelong learning

7. Design and Planning of a Virtual Library

The design of a comprehensive Virtual Library and its proper implementation, needs the examination of the feasibility of how best to create, operate and expand, taking into account of the availability of present infrastructure etc. In this context, the issues mentioned below must be addressed:

1. Institutions to be included (Universities, other training institutions, libraries etc);
2. Access modalities (institutional and/or individual);
3. Content themes (faculties and subjects to be covered in connection with higher and tertiary level curricula);
4. Content form (access to existing materials and the need to create new content in English, and/or other national languages; content in the public domain; inclusion of commercially available content);
5. Content delivery (combination of online and offline ICT approaches and products);
6. Content access (cataloguing and indexing), including relationship with the Union Catalogue;
7. ICT infrastructure and equipment needs/availability at institutions concerned (including connectivity and networking capacities, use of freeware, tariff negotiations; suitability of equipment to climate and local conditions);
8. Architecture of the virtual library (access and centralised vs. decentralised services);
9. Training needs (to set up, manage and use the Virtual Library);
10. Links to already existing national virtual library and virtual laboratory projects;
11. Partnerships with other regional and international virtual library initiatives.

8. Principles of Development of Virtual Library Collection

Six principles have been identified that drive the development of a Virtual Library Collections as enumerated below:

1. **Priority of Utility :** Usefulness is the ultimate reason behind all collection decisions. Predicting utility is, however, notoriously difficult.
2. **Local Imperative:** Local collections are built to support local needs, and expenditure of local resources must have a demonstrable local benefit.
3. **Preference for Novelty:** Although historical collections are essential for research, only limited resources can be devoted to the collection and maintenance of older material.
4. **Implication of Intertextuality:** To add an item to a collection is to create a relationship between it and other items. Building a collection always creates new textual relationships.
5. **Scarcity of Resources:** All collection development decisions have to balance scarce resources – funding, staff time, document size, user time and attention.
6. **Commitment to the Transition:** More and more information will become available in digital form. Libraries are responsible for promoting this transaction and assisting users to adjust to it.

10. Advantages of Virtual Libraries

1. Virtual libraries provide immediate access to a range of resources not available in physical collections. Virtual libraries allow unprecedented access to information and ideas. “A paradigm shift takes place from libraries as collectors of items to libraries as facilitators of access to all kinds of information, provided by anybody, located anywhere in the world, accessible at any time”.
 2. Physical libraries operate with designated hours, virtual libraries are available anytime and anywhere where there is an Internet connection.
 3. Virtual libraries offer opportunities for learning that are not possible in their physical counterparts. Virtual libraries complement other virtual learning environments, such as those provided in distance education and courses offered online, and like virtual learning environments, providing flexibility of time and place.
 4. Virtual libraries often contain more up-to-date information than physical collections. Their sources can be searched more efficiently than those in physical libraries, and the information they contain can be updated more frequently.
 5. Well-designed virtual library collections are organized and managed to increase productivity and efficiency of the user.
 6. Virtual libraries empower the user and promote informal learning.
 7. Virtual libraries can be customized for particular schools, grades, and subjects. This variety of formats in presentation and navigation is quite different from that of a physical library. Thus, virtual libraries support specific communities of interest, thereby, creating global communities of learners.
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8. Virtual libraries break down the physical barriers between users and information sources. Through the use of audio and video, virtual libraries can also make resources available to users that are visually and hearing impaired, and they make these resources available in their homes. Virtual libraries of the future may integrate voice, video, and text for users involved in distance education in remote locations.

11. Can INFLIBNET Centre be the Virtual Library of India?

There is an urgent need of the 'Virtual Library of India'. India is a home for rich and diverse cultural, educational and R & D institutions, associations, societies and scholars and so on. I strongly suggest and advocate, INFLIBNET Centre to take an advantage of being the Virtual Library of India.

We have witnessed that, INFLIBNET Centre has experience of uniting the scholars and their works by its aims and objectives, and through its specialised programs and activities such as automation and networking the Indian University Libraries and others. Therefore, I believe in its strengths and capacities to host a 'Virtual Library of India' where one can stop for every aspect of Indian Information Diaspora. Indeed, this 'Virtual Library of India' will make the Indian content more visible, accessible and applicable to build again a stronger, prosperous and knowledge superpower of the world.

12. Conclusion

Virtual libraries are facing big challenges in their efforts to build a foundation for sustainable, ongoing effort. To develop a successful Virtual Library System several components such as, library-based, open and cooperatively developed content and software within a centralized, focused, cooperative organizational efforts are necessary. Virtual Library has to support the users' community, by providing accurate, reliable, and affordable access to all the desired scholarly and educational electronic/internet resources. Several Virtual Libraries have claimed the vital new areas in scholarly and educational information service by way of technological provisions.

Virtual Libraries are the new vision of the Libraries of future. The development of Virtual Library will take place when libraries transform themselves into three dimensional electronic information centres. It will be possible when data storage, data representation and image processing technologies mature to cope with the great amounts of graphically represented data held by the Virtual Libraries.

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