Creation and Development of a Virtual Library :
Problems faced and Lessons learnt from the 'Gyan Tawi' Project

I V Malhan   Shivarama Rao K

Abstract

This paper describes the growth of the Internet resources and mentions that the major challenge for the information professional is how to control the growing electronic information, how to evaluate this information to separate the worthwhile information from the trash and how to organize this information. With the development of the Internet, a new pattern of organization of information emerged where electronic documents are linked and arranged in the spatial order instead of traditional hierarchical order of arrangement of information. Moreover, the information is now directly accessible to users over a network of computers. Collecting the most relevant and significant free flowing Internet information and organizing it into a virtual library will facilitate most convenient information access to user communities. This paper highlights the problems faced and lessons learnt from the 'Gyan Tawi' virtual library project undertaken by the authors.

Keywords : Virtual Library, Creation and Development

0.   Introduction

The convenience of the Internet has led to a tremendous growth of the Internet connections. It is growing in an amoeboid pattern because of the growing users' interest in the volume of information it carries. In "January 1996, 30 million people were using the Internet. At the dawn of the new century, however more than 400 million people were online. This 1,333 percent change over only five years is a harbinger of how the Internet will continue to alter the way we work…"[1]. In India too the use of the Internet is constantly increasing. Besides the growing number of connections in institutions, government departments, and business houses, cyber-café are mushrooming at various places to facilitate access to the Internet resources on the pay as you use basis. According to a NASSCOM survey there will be 11 million Internet connections and about 23 million Internet users in India by December 31, 2003 (Table 1, Table 2).

Table 1. Internet Growth in India (History)

Date	Internet Connections (millions)	Users (millions)
August 15,1995	0.002	0.01
March 31,1996	0.05	0.25
March 31,1997	0.09	0.45
March 31,1998	0.14	0.7
March 31,1999	0.28	1.4
March 31, 2000	0.77	2.8
June 30, 2000	1.04	3.70

(Source: NASSCOM Internet survey, 2000)

Note that 280,000 Internet connections translate to over 800,000 Internet users in India.

Table 2. Internet Growth in India (Projected)

Date	Internet Connections (millions)	Users (millions)
March 31, 2001	1.6	5
March 31, 2002	4	10
March 31, 2003	8	18
December 31, 2003	11	23

(Source: NASSCOM Internet survey, 2000)

"Researchers at the University of California, Berkley, say the amount of information being generated worldwide has increased by 30% each year since 1999… That means 800 megabytes of data-roughly equivalent to 800 books- was created for every man, woman and child in 2002. They found the new information stored on everything from hard disk drives to paper, added up to 5m terabytes-or 5 million megabytes-last year alone" [2]. The major problem before the information professionals is how to bibliographically control this information, how to index this information and how to filter the available information to separate the worthwhile information from trash. The challenge before scholars and researchers is how to referee and ensure quality control of growing volume of unbundled information. At the global level some user communities are drowning in information and a large number of users still not have means to access the desired information which leads to a digital divide among human population. As far as web resources are concerned, there are a large number of search engines, which facilitate easiest location and earliest access to information on any possible subject of human interest. However, a keyword search through a search engine may spit out a list of thousands of titles sometimes including entries from unsought areas. Pinpointed and most relevant information identification, location and access is still a major problem.

The current information scenario offers immense opportunities for information professionals to expand their information activities to better serve their user communities. Constantly tracking the Internet resources for data and information mining and knowledge discovery is emerging as a major profession. Further evaluating the retrieved relevant information to check its veracity, reliability and utility is another area where library and information professionals can provide immense help. Organizing the evaluated useful information and fitting it into a virtual library architecture providing graphical user interfaces and user-friendly scheme of information organization is still another activity where information technology savvy library and information can step in.

Keeping in view the information requirements of the University of Jammu, the authors have tried to collect the relevant information from the Internet and organized it into the virtual library of the University of Jammu namely 'Gyan Tawi'. Every effort was made to collect information conforming to the teaching and research programmes and routine functional requirement of the University of Jammu. We have not taken financial assistance from any funding organization or from the university for this project. This work was initiated keeping in view the professional ethics and in the best interest of the professional service. The first phase of our project is complete. A unique feature of this virtual library will be creation of our own electronic content and organizing it in the framework of our virtual library. For instance we have already started the development of a professional journal namely "Gyan Samsadan; the journal of knowledge resource management" which will be displayed in the 'Gyan Tawi'. The further enrichment and amerioration of this virtual library will be undertaken on continuous basis and in the second phase this virtual library will be made more dynamic and some departmental subject specific libraries will be developed and linked with the 'Gyan Tawi'.

1.   Features of Virtual Library

'Gyan Tawi' is an entry point website developed for the use of students, staff and faculty of University of Jammu. It gives access to a variety of Internet based open sources on Science, Social Science, Humanities and Management. The sources are freely accessible on the Internet. Through open sources virtual library provides access to carefully selected open access scholarly material, available freely on the Internet. These include: bibliographic databases, patents, reports, theses, e-print archives, current news, free electronic books, premier portals, general search engines and special search engines. Users can scan sources by subject discipline and also by resource type. It lists premier reference sources like encyclopedia, dictionaries, directories, OPAC's and organizations etc. The university publications link will act as a mirror to the research/development and know-how from University of Jammu. The other features of virtual library include 'today's highlights' brings to users the current news on highly useful scholarly research on the Internet. This is refreshed on a regular basis.

2.   Problems experienced and lessons learnt

In the present work we have tried to see how we might integrate virtual library ideas and new service models into the local library management system, which is at the heart of a library's daily operations. Our questions are is the virtual library the initial entry point for the user, or is it the local virtual library gateway, or is it the developing subject portals? Librarians are always sensibly cautious of new systems or concepts and are always concerned that any new initiative has to be capable of being supported, sustained and integrated into a service environment. With such a pragmatic approach, there has perhaps not been the scale of take-up of virtual library outputs in terms of obvious service additions, but what has been achieved from the work is a significant shift in thinking, imagination and above all confidence. The following specific problems we came across during developing the 'Gyan Tawi'- The Virtual Knowledge Resource of the University of Jammu:

- In the first place the Internet connection was disconnected for quite sometime in Jammu And Kashmir State and we could not do any work during that time.
- The slow Internet speed, 10mbps connectivity. We have started project with Pentium 4 machine and VSAT connection for the Internet. We suffered a lot due to the slow connection speed of Internet during content digging.
- Sometimes the ERNET VSAT server connection from Bangalore was down that took us away from the virtual world to the real world!
- Frequent threats from malicious viruses
- In the present network architecture we used to face frequent IP conflict problems
- Frequent power cut problems
- Simple system hardware configuration
- Difficulty in evaluating Internet resources, sometimes the traditional evaluation criteria is not adequate for evaluation
- Manpower: For this kind of work there is a need of trained manpower particularly association of those who can dig and evaluate the resources. Major psychological factors like patience, analyzing power, judgment on resources are must for such people.
- There is huge amount of duplication of links in many major portals. Most of the portals or gateways lead users to the same websites.
- We had a very good experience of WWW errors like 'URL Not Found' (404), 'Page is under construction', 'Internal server error (500)' etc.

- Lack of essential hardware like Scanners, CD writers, Digital cameras
- Lack of software like PDF converters, GIF animator software etc.

The major problem is that in the Internet one is not aware who is doing what and where. And hence there is lot of duplication of efforts, which cannot be completely avoided in case of Internet content development but can be controlled in case of Intranets.

The concepts like digital libraries, electronic libraries, hybrid libraries, Internet libraries, hyper libraries, universal libraries etc. all are synonymous in nature. In our work we tried to define the virtual library as "the Library where 'new' digital information resources and 'traditional' digitized hardcopy resources co-exist and are brought together in an integrated information service, accessed via online portals available both on-site, like a traditional library, and remotely via the Internet or intranets.

The software we used for creating virtual library is Dreamweaver a component of Macromedia Package. If one knows how to use this package it is excellent and economical. Still we are planning to purchase the required hardware like server, link-checking packages etc. Single university department may not afford to buy all the necessary hardware and software and employ adequate manpower for development of an excellent virtual library.

3.   Future Development and Suggestions

A final thought is that we are now in a 'search-box culture', where an often-crude commercial search engine defines the information landscape for our students, or where 'Amazon is now the Library'. They lack the appreciation of, or are too busy to listen to, the distinction between web content and quality refereed academic information. In the next phase of virtual library we are aiming to create a dynamic information space where students can capture, roam and move seamlessly between references, full-text articles and other quality virtual information resources. Unless we create this enclosed information space, the danger is that by having to explain it all, we overcomplicate the information-seeking lives of our users and so we cease to be of interest. This is the challenge for the virtual library – to integrate the best available resources, but above all *to simplify*. In the process of time the University of Jammu library OPAC and electronic databases e.g. Documentation on Jammu and Kashmir will also be integrated with the 'Gyan Tawi' so that these can be accessed online.

4.   Conclusion

Co-operation among library and information providers and research scientists is essential in building a virtual library. Librarians working in specialized institutions can also develop an information cooperative in their subject area of information service through joint efforts. For instance *Healthweb* [3] provides access to evaluated medical information resources available on the Internet and selected by library and information personnel at 22 academic medical centres in the US Midwest. As we do not have good physical libraries, virtual libraries may fill the gaps and supplement the existing resources. Artificial intelligence, dynamic animation software can be used to provide library guides. Data mining and Knowledge discovery techniques can be used for refining and customization of information. Users must be trained for using Internet facilities, and then only the virtual library can be utilized in a successful way. Complexities of various formats of electronic information resources pose problems both qualitatively and quantitatively for Internet users. Design and development of virtual library could provide a solution enabling customization of information products on the net. The University of Jammu Campus now have a campus wide optical fibre network and is at the verge of upgradation of V-SAT facility to 512 kbps. The campus intranet will give a boost to our work and will help the users to access the 'Gyan Tawi' from their place of work.

5.   References

1. Dadashzadeh, Mohammad, *Information Technology Management in Developing Countries.* London, IRM Press, 2002, p1.

2. "World drowning in information". *Hindustan Times* November 2, 2003, p7.

3. http://www.healthweb.org

Appendix
Screen Shots of 'Gyan Tawi'
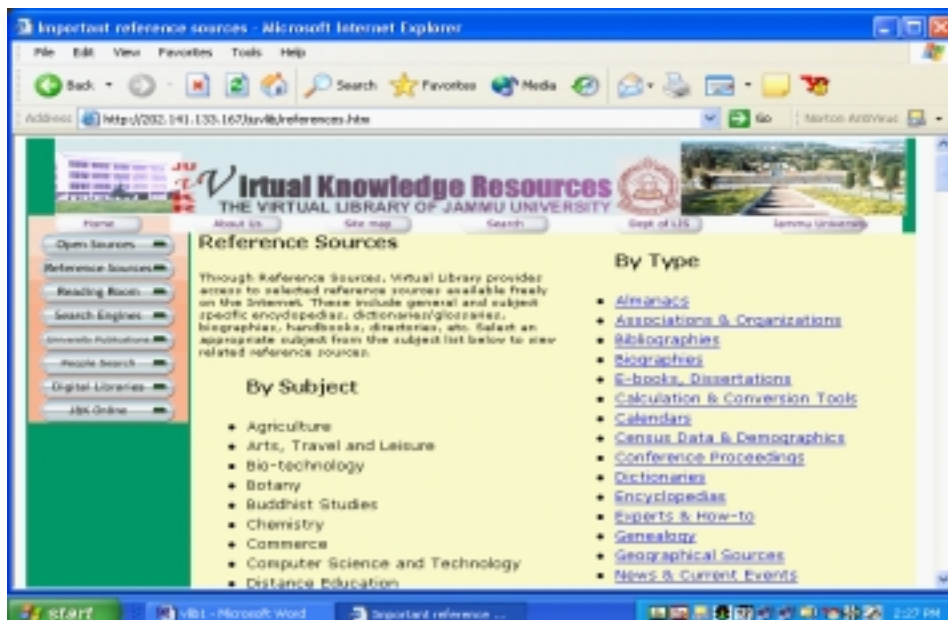***Fig 1: Index Page***

Fig 2: Open Sources

Fig 3: Open Sources Sample Page

Fig 4: Reference Sources

About Authors

Dr. I. V. Malhan is Professor and Head in DLIS and Acting University Librarian at University of Jammu, Jammu-1800 06, India and awarded Fulbright Fellowship to do research in the USA in 1996. He has published books and several papers in the national and international journals. He participated in Conferences and Seminars held in Asia, Europe and the United States and supervised Member of PhD students.
E-mail: imalhan_47@rediffmail.com

Mr. Shivarama Rao is Lecturer in DLIS at University of Jammu, Jammu-1800 06, India. Earlier he was a Project Staff at NCSI, Bangalore India. He has published papers in journals and international conference proceedings.
E-mail: sramashiva@yahoo.co.in