ELECTRONIC LIBRARY AND INFORMATION SERVICES: A CASE STUDY

By

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<u>ABSTRACT</u>

This paper describes the theoretical and practical explanation of the electronic library and its information retrieval and service, for a special reference to the Management institution library. It also highlights the e-Library, CD-ROM networking, Internet & Web resource services and legal issues.

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0.   Introduction

Information retrieval is essential for the success of e-Libraries.   The growth of Internet and the availability of enormous volumes of data in digital form have necessitated intensive interest in techniques   to assist the user in locating data.   The e-Library effort is also progressing with the goal of migrating from the traditional book environment to a digital library environment. The challenge to both knowee and knower of e-Publishing and e-Library has recently become a major new subject of development and research in the area of   information technology (IT).   The interest is caused on one side by the tremendous growth of all types of publications and the need to provide immediate and selective access, on the other side by advances in IT that have brought unprecedented digital capacity and network transmission power to the desktop of every user.   e-Libraries have the potential of changing the entire publication process. This will affect many scientists in their role of author/s, reviewer/s and a reader. It will also allow for new types of information to be disseminating at low cost and high speed that cannot be represented on paper.   The role of publishers, distributors and library professionals will also undergo changes, because of different ways found to bring information from the creator to the end users. This article provides a theoretical and practical explanation of the latest advancements in electronic library and its information retrieval and services.

1.   Concept of electronic library

The concept of electronic   library is   information stored electronically and made accessible to users through electronic systems and networks. One of the central tenets of the electronic library is the delivery of information, whenever required, to the user's desktop, wherever that may be. Library professionals therefore, will increasingly need to provide their services in some electronic form rather than accept face-to-face contact with their users. As academics become more willing and more accustomed to using electronic information on a regular basis, they will become increasingly dependent on technology

for information access. An additional factor is that in networked environments, information providers can supply their information directly to the end-user and so bypass the library entirely. Thus the move to an electronic information environment will radically alter the way in which a library operates and interacts with its users, and library professionals will need to consider their own future role as intermediaries. It will form a crucial part of an institution's information service provision and is likely to have a much wider remit than that of the traditional library. Electronic libraries will need to provide a range of new value added services for internally generated and externally acquired academic and scholarly information, and may be involved in the delivery of administrative information as well. However, the primary aim of the electronic library will be to support the institution's learning, teaching, and research, which might change significantly with number of users.

2.   Background

Sir Jehangir Ghandy Library – XLRI – Jamshedpur, is a special type of library in management and labour relations. Independent library building has comfortable air conditioning with more number of resource collection in the area of management and allied subjects, national and international hard bound and electronic journal subscription, CD-ROM network station connected with 300 PCs in the campus, computerization of library house keeping activities with Alice for Windows, Internet Library, Multimedia center and library web page (http://www.xlri.ac.in/library). The calm and peaceful atmosphere of the campus and its green surroundings are highly conducive to study and research.

This library is just beginning to feel comfortable with network computers, CD-ROMs, and text based Internet. The majority of electronic database available to users were accessed via stand – alone and CD-ROM network station. Then, seemingly overnight, everything began to change with the wide acceptance of the WWW and the proliferation of ISPs ready to provide easy access to the Internet. Suddenly there was instantaneous, global access to a wealth of information. Even slow to move organizations like management library could not help being swept up in the energy of this global information revolution. Every one now realized that the Internet in whatever future form it may take, is here to stay. As a result, management libraries are now turning their energies toward offering patrons a slew of innovative ways to access information.

3.   Towards new path

A few years ago several electronic databases were being released by national and international publishers in the form of CD-ROM. More number of pages in hard copy could be reproduced on a single CD-ROM. It's cost of production is very less but they could also provide customized, user friendly search engines such as Silver Platter Information Retrieval System (SPIRS) to assist the end – users in locating information within the database.

Stand alone PCs worked for awhile, but then the line of users waiting to use the electronic database began to grow. But our library could not afford to purchase enough PCs to satisfy our users demand. Hence, a solution arrived in the form of LANs and CD-ROM network tower.

As LANs became more prevalent in library, it became possible to attach towers to the network allowing access to a single electronic database around 300 PCs. Libraries could provide access to the electronic database from network in and around the library. All electronic database viz., ABI/INFORM Global on ProQuest abstract and full text – CD-ROM Database (http://www.bellhowel.infolearning.com), WINSPIRS, IBID (India Business Insight Database) and EXIME INDIA (http://www.informindia.com).

The majority of   electronic information is still available in CD-ROM format. CD-Tower's drives became a storage to keep required number of disks. However through extensive research and development of IT products, we are able to offer both software and full turnkey solution to enable the library to make use of innovative methods of retrieving CD-ROM and non CD-ROM based information through a local Intranet and the Internet, using Web Browser as a client. Now, are delivering the service through ITS Information Networking.

3.1   ITS Information Network

Info Technology Supply (ITS) has been trying to establish links between publishers, database software and operating systems. It has developed InfoWare CD/HD, which is a complete CD-ROM networking system, compatible with a large majority of the databases in the market.   This system allows CD-ROM database searching from almost every operating system and can even be accessed over the Internet, Intranet and private Extranet.
ITS Info Ware Systems are designed around IRIS (InfoWare Remote Information server) (http://www.itsltduk.com).

> ? It uses the power of hard disks to form the basis of its CD-ROM networking solution. This means phenomenally faster access time and ease of maintenance. It also means economical solution. Conventional CD-ROM servers and Jukeboxes on the other hand work in the line of traditional CD-ROM drive based technology.
> ? ITSL has powerful tools for administration and database license controlling. Servers and jukeboxes on the other hand just provide for a tool to manage CD-ROM server.
> ? ITSL allows data to be ported to the web such that anyone from anywhere (give access controls) can access the data through the WWW. To do this, application server along with CITRIX software needs to be added. CD servers and jukeboxes work only within the LAN environment providing Internet solution. It does not allow access of the data across the Web.

? The solution is expandable and scalable to accommodate thousands of CDs, CD-ROM servers and jukeboxes are not scalable and are limited in growth

This networking software provides;

? Web type of access to the CD and non CD applications
? Ease of use
? CD to Hard Disk Coaching
? Centralized control
? Zero Client maintenance
? Automated Client application development
? Extended reporting features
? Tight integration with thin – client / server platform

ITS InfoWare System, through IRIS (InfoWare Remote Information Server) Software provides tight integration and control of Thin-client server operating platforms such as CITRIX Winframe, MetaFrame and Microsoft Terminal Server, thus removing the need for organizations to upgrade their workstations as well as benefit from the effective use of slow intranet / internet network line. Its systems utilize existing computer resources and manpower to enable organizations to improve productivity, security and efficiency, offering long-term savings for the library.

IRIS software is designed to be both efficient and cost effective as well as being very user friendly (both for administrator and on the user side). The product has been specifically designed for use with the global Internet market place and is complete web-based CD-ROM networking solution. For WAN, an application server is used.

The application server uses thin client/server technology to improve the productivity and efficiency of library. With the Citric software solution, all processing is done on the application server with only the screen updates crossing the network. This means that it is even possible to access CD-ROM resources from old and non-PC workstations, and over slow network lines. The application server also facilitates distance learning, with remote access to database being possible through the Internet from any desktop, anywhere in the world. The special features of IRIS are:

IRIS Local: Allows you to access all types of applications (with or without CD-ROM support) over your LAN. You have simple use of databases and other application, while maintaining complete, trouble-free administrative control.

IRIS Remote: Will run all types of application (again, with or without CD Support) on the LAN or the WAN through the application server, allowing organizations with old computers, slow network lines and multiple sites to access electronic applications with LAN like speed.

IRIS Universal: A combination of both solutions, IRIS universal supports all types of application over the LAN and remotely over the WAN, through the application server, gives organizations maximum flexibility, with the ability to use all types of applications with any computer over any network lines. This provides very high performance without the need for expensive upgrades.

3.2   Web resources

At present major electronic resource publishers are providing Web access to their products. Many of them are no longer updating their CD-ROM products. Popular electronic resources in different subjects are now available as web based resources.

The greatest benefit to new Web based resources is remote patron access. Remote access is accomplished in one of two ways. A library can provide their IP (202.140.158.18) range to the publishers. The publisher then authenticates the patron logging into the resource by comparing the patron's IP address within the list of approved IP address in their database. Alternatively, the patron can be prompted to enter a password which is checked against a list of valid patron IDs stored in a designated server. In either case, a remote server hands the authentication process in a matter of seconds and access to the electronic resource is either allowed by a remote. The benefit to users is that they no longer need to be in the library, or even on campus, to access an electronic database. The benefit to the library is that staff no longer need to worry about all the nightmares associated with managing a networked CD-ROM tower.

3.2.1 PROQUEST On-line database
Library has been subscribing ABI / INFORM and Business Periodicals on Disc (BPO), and provides extensive material on-line on variety of business topics including viz., market conditions and strategy; management trends and corporate culture; corporate case studies; company news and analysis; international trade and investment; economic conditions and forecasts.

Material is available in the form of full image articles, citations and 25-150 word abstracts. Subscription provides material for the current   year and a three-year back-file, with updates provided monthly.   The full image capability means users can view and retrieve exact article copies appearing just as they do in the original publication. For casual browsing of popular business magazines to in-depth research of scholarly journals, users will find cover-to-cover reproduction of material they need most.

ABI / INFORM and Business Periodicals On disc (BPO) is available in two editions:
      i)   Global Editions: Abstracting and indexing from around 1,520 titles in ABI/Inform Global edition with page images from over 630 titles and searchable full text from 730 sources in BPO Global editions. This edition was compiled specifically to meet the research needs of international users. By bringing together information from hundreds of key international journals, BPO Global edition enables users to tract business trends and activity in all industry sectors around the world;

ii)   Research Edition: Abstracting and indexing from over 1,270 titles in ABI/Inform Research edition with page images from 470 titles in BPO Research edition. It will cover subjects: accounting, banking, business, computers, economics, energy, engineering, environment, finance, healthcare, human resources, international Trends, insurance, law, management, marketing, medicine, public administration, taxation, telecommunications.

Searching the Database: BPO uses the popular ProQuest searchware. ProQuest is powerful and easy to use regardless of users computer knowledge or search expertise. There are two ways to search the database: first, is free text searching and second is multiple indexes to help users avoid the trial and error guessing the correct term. Indexed terms are available for – companies, subjects, geographic places, journals, authors, key words and industry sectors.

BPO has the unique opportunity to combine a rapid search across hundreds of journals with immediate delivery of the original documents. Articles can be printed out immediately and the information quest which usually takes hours or days by traditional methods, is completed in less than five minutes. All for a fixed annual fee. It provides organizations with an instant electronic journal collection, including a huge archive. This in turn reduces many costs associated with journal storage and binding. In addition, BPO journals are unaffected by problems of theft and mutilation, nor are there the frustrations and cost of obtaining articles from outside via inter library loans.

3.2.2 ISI emerging markets on-line database

Another subscription of commercial database is ISI Emerging Markets, which, service provides desktop delivery of hundreds of hard-to-get news and business information sources direct from the emerging markets, in one online location. Subscribers gain a "Three Dimensional" view of emerging markets through this unique collection of information.

3.2.2.1 Highlights of the ISI Emerging Markets Services.
- ? Coverage of more than 25 emerging market countries in Latin America, Europe and Asia.
- ? Over 800 sources, many of them unique to the ISI Emerging Markets service
- ? 18 worldwide offices managing local provider relationships and monitoring local developments
- ? Fully searchable daily news and archival information
- ? Current financial statements and profiles of listed and unlisted companies
- ? Macroeconomic forecasts and industry analysis from leading international research organization
- ? Emerging market indices and corporate action reports
- ? Briefings from the Economist Intelligence Unit.
- ? Information delivered in English and 8 other languages.

3.2.2.2 Centralized
ISI Emerging Markets provide subscribers with time and cost saving, by consolidating their global information gathering activities. Keyword searching reduces the time needed

to retrieve relevant information. Electronic delivery of multiple publications in one location saves subscription costs. The ISI Emerging markets service is easily accessed through the Internet and normally does not require additional investments in hardware, software, or networks.

3.3   Web Page

Library has designed and developed a Web page and link to the institute's Web site (http://www.xlri.ac.in/library). Web page can be used to house all sorts of useful information to the users. Library Web page would be a help to consolidate electronic source into one easy-to-find location. Users can find links to search engines, general reference sources, specialized collections and Web based database. Our library page includes links to general, IIMs, IITs, R&D Institutions and international business schools, etc.

We also provide links to full text, electronic management and allied subject journals. Web page is also a great way to provide "Know your Library" information. Library is making use of the web to provide access to local, national and international specialized collections through digitization. This is helping students and researchers, who may not have the time or funds to travel to a particular library, the opportunity to access a special collection from their office or home. It also gives the libraries opportunity to become user friendly; search for material that are more difficult to access in paper media. Digitizing specialized collections and providing access to those collections via the web have been an invaluable boon to academic community. It has opened up many avenues, but has also created its share of potholes and roadblocks. There is a seemingly infinite amount of data "out there", but we have barely begun to explore how we are going to organize, weed, maintain and simply find the information we need.

Recently, Institute has improved user interfaces, increased bandwidth which is all going to be of crucial importance in the design of tomorrow's virtual libraries. Institutes will be providing virtual libraries for their students. Our focus needs to move from the physical collection and storage of huge amounts of paper – based information to easy access to all forms of information – increasingly this format will be electronic. Much of what a virtual library offers is already available to our users.

An increasing number of electronic resources in the form of Web-based databases, digitized special collections, full text of thousands of electronic journals, useful links organized by subject on library Web pages and online catalogue with Web interfaces are already accessible. The information on the Web is still free. This may change and also copyright and intellectual property issues still need to be resolved. Publishers will track who accesses or downloads their publications? How will authors be compensated? How do we afford to digitize all the material that currently exists on paper, if we don't charge people to access what material, once it is online?

3.4   Internet and library

Internet is a wildly successful and rapidly growing technology. The internet library offers a variety of services used to create, browse, access, search, view and communicate information on a diverse set of topics ranging from the results of scientific experiments to discussion of recreational activities. Information in the e-Library can be recorded in memos, organized into menus, stored as hypermedia documents, or stored in textual documents. In addition, information accessible through the digital library can consist of data, including audio and video, which is gathered, communicated and delivered instantly without being stored. Furthermore, because the services have been integrated and cross referenced, a user can move seamlessly from the information on one computer to another computer and from one access service to another.

3.4.1 Service through Internet

The information is very essential in this competitive world; the influence of developed countries, the demands of users and the networked nature of libraries are some of the factors that have resulted in many libraries using the Internet. Every year library is getting the vast electronic resources and have benefited from the access, organization, storage and publishing opportunities provided by the Internet. The Internet is basically treated as a treasurer of knowledge because:

* Many functions and correspondence of the library are primarily with administration, faculty, students and others and answering queries from users, sending out notices, communicating with publishers and vendors, Inter library loan and document delivery matters etc.

* It will help in retrieving information, checking OPAC from other libraries, seeking information behaviour of users, answers to reference queries, keeping pace with current developments through the WWW, Evaluating Web sites for linkage to the library Web page and e-journals.

* Libraries will be able to keep abreast with current developments in the field, and seek information on common problems faced by users.

* It will connect to remote computer resources, accessing database services.

* It will allow libraries to expand their programmes and services as well as initiate new services and programmes.

* It will help promote library information, rules, services etc., and will help to reach a wider section of the users at low cost, something which was not possible in the pre-Internet days.

* Many of the digital libraries are using the Internet to provide CAS & SDI services to their users.

* It helps to extend the more services like reference and referral service, renewal of the lending of resources, etc.,

* Helps in the compilation of bibliography on specialized subject areas, viz., on-line bibliography, directory of expertise and internet resources in virtual libraries in subject areas relevant to teaching and research.

* It is a platform to the library for its contents and services, designed and planned from the beginning to be in the virtual mode. Using available technology and incorporating as much contents as possible in digital format to provide information services to its users anywhere, any time and in many forms through the network.

3.4.2 Internet v/s professionals

The Internet has brought a significant impact on library and information centers. The effect is dependent on the availability of facilities, usage by the library professionals and users, quality of communication links and other factors. It has resulted in focus of new roles for professionals, provided them with new opportunities and efficient work nature, etc.

It has forced professionals to review their roles. Now-a-days users are becoming more Internet literate and are able to access information themselves, resulting in fear psychosis for the profession. So, many of them have now adopted the Internet as a tool for providing personal service to each reader in helping him/her find the documents answering his/her interest pin-pointedly, exhaustively and expeditiously.   In the advancement of S&T, library professionals expect the nature of their jobs to change in the future.   Internet is enhancing the role of professionals to become information searchers, evaluators and verifiers for storage   of the information to the benefit of their users.

3.5   Legal and other issues

Internet based information services and other digital reference services can vary in many aspects including number of staff, number of questions answered, technology used and subject areas covered. Many of the services struggle with legal issues regarding liability for information provided and confidentiality of user information posted on services Web sites. Such issues are viz.,

3.5.1 Confidentiality : The library planning to make users correspond through question and answers etc., should consider how it will ensure confidentiality of information that can be used to identify a users (Name, e-Mail & postal address, Phone & Fax number etc.,). Library professionals should adopt core policies for protecting each library user's right to privacy and confidentiality with respect to information sought or received and resources consulted, borrowed, acquired or transmitted.
3.5.2 International support: This is particularly problematic on the Internet where it is nearly impossible to establish the geographical origin of an inquiry?
3.5.3 Other issues and concerns : These are : service liability, lack of software to assist internet user in managing the question and answer session, advertising services, question

& answer policy, cost recovery, cost per unit for outsourcing and establishing base-line budgets, etc.

4.   Conclusion

With reference to our country, electronic library is feasible and with sufficient training and awareness, user will use it. That training will need to continue as technology of the electronic library changes.   At present,   all types of libraries need to acquire new skills and knowledge as a matter of urgency. Failure to do so, through apathy, could amount to professional suicide. The digital era requires staff to be proactive in terms of both their approach to work and their own professional development. Also, organisations need flexible structures if they are to be effective; structures which are based on a matrix to facilitate cross-functional teamwork and which are responsive to rapid change. There are still many unresolved issues surrounding IT based services and its role in information access in libraries. Our skills as professionals are needed now more than ever. We need to become involved at the grass-root level in finding solutions to many of these problems. We need to take proactive roles within our libraries, pushing for new technology, professional training in technology and reminding the administration that access to information, regardless of where the information resides, is the key.

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