Chapter 4

Overview of Using E-Resources in University Libraries

E-resource becomes the most important library resource all around the world. In higher educational system mainly in Universities, it is very much essential to the PG studens, Researchers and Teachers. "In the late 1990s, libraries began contemplating the migration of their print journal subscriptions to electronic only formats and Drexel University was one of the first institutions to commit to this change" (Zambare, Casey, Fierst, Ginsburg, & O'Dell, 2009). The enormous changes that are taking place in the form of library services, access of information, information storage and retrieval with the help of ICT have stretched too far into all walks of LICs. Librarians of Engineering Institutions have traditionally been at the forefront along with the other libraries in the integration of new technologies into their services as compared to other libraries. The exponential speed of growth of Internet technology facilitating uploads & downloads has created innumerable opportunities of online resources in the LICs. Electronic publishing has been revolutionizing the format of the recorded knowledge globally. The new electronic information services are attracting reader's attention in the present network environment of knowledge society. This changing scenario in library environment has begun for the need and use of online resources along with print version.

4.1 Issues and Features of E-Resources for University Libraries

The main issues and features of online resources for University Libraries are as follows:

a) **Stability and Storage**

   The volatility of e- journals makes preservation of e- journals a major concern. Although the benefits of enhanced access facility and ability of electronic journals to transmit information through time, its storage for future use like printed form is still a challenge in front of libraries. Offline storage methods suggested are magnetic media, such as tape, hard disks, and optical media such

as CD/ DVD-ROMs. There are issues of preservation of storage media, hardware and software dependency and dynamic versions of electronic journals that also need to be dealt with. Above all the issues of copy right act is a big hurdle towards storage of all subscribed contents by the libraries.

b) **IPR Issues**

There are certain issues like; protection of the intellectual property of the author in order to preserve the originality and integrity of the work; warrant for the attachment of the author and the work in public; protection of the author's ideal and economic interest and benefits, including publication and reproduction of his/her work. This is usually accomplished through the publishers, who disseminate the work in an appropriate, protected and retraceable manner. Electronic journals presently emphasize Information access instead of ownership.

c) **Reviewing**

There have been challenges for electronic journals in getting contributions because tenure committees in academic institutions question the legitimacy of electronic journals. Nevertheless, vigorous peer review process is implemented in many scholarly electronic journals.

d) **Selection and Acquisition**

The selection criterion for e – journals resembles the selection of other periodicals. The library selection policies can be applied to electronic journals, there are considerations unique to electronic journals that should be addressed by libraries, such as: subscription scheme, ordering procedure, standards, effectiveness of the search engine, ability to limit to local holdings (if not full text), and hardware and software compatibility.

e) **Cataloguing**

E- Journals can be classified according to the ordinary guidelines, such as LC, Web Dewey etc. Libraries should be alert to emerging standards for cataloguing electronic publications.

f) **Users' Access**

Depending on the licensing agreement and local funding, downloading and printing can be provided in libraries as well as at the desktops of the users. Minimum hardware and software requirements are going to progress as technology progresses, but basic entities such as hard drives, colour monitors, external disk drives, printers, security cables, tables and chairs are often inevitable to be equipped onsite. Internet connection and bibliographic linking software are extras to provide value-added service.

g) **Training and Support for Staff and Users**

With the number of e- journals being published and the variety of different interfaces, more sophisticated searching and retrieving skills are necessary. If library staff is provided with adequate training and support in order to be aware of new development of technology, more flexible and suitable services can then be available for users.

h) **Literature Control**

To keep bibliographical control over the published information, with the help of computer and communication technology various methods have been developed and adopted by the libraries from time to time. Broadly three types of online resources are needed to control over the available document.

(Hahn, 1999)

4.2 E-Resource Operation and Maintenance

4.2.1　E-resource access control

Each user of a multiple user system shall assigned a unique user identification. The user ID must be authenticated before the system may grant that user to access to the system. Shared or group accounts may be used when absolute necessary, but their use is discouraged. Such accounts must be authorized or sanctioned by ITS. Annonymous, guest or other IDs that are available for public use must have least privilege necessary for their intended function (Arora & Rai, 2004).

4.2.2　Physical Access Control

Direct physical access to certain resources such as servers, data networking devices and telecommunication switches is restricted. The rooms containing critical electronic infrastructure must be closed and locked at all times. Alarms, sensors and other types of physical security system must be utilised to further secure these facilities and to detect and report emergency conditions that might occur. Signs outside the room must indicate the sensitivity of the equipments inside. Water sources including sprinkler system must not be located in such rooms. Printing equipments and paper must be stored in separate rooms to protect systems from paper duties. Visitors must be escorted in all times. Authorized poersonnel may be granted access to server or network equipment rooms through the issuances of ID cards or keys or through the use of passwords or other access codes. These access controls may not be shared with any person. If an authorised person leaving their current role he /she should no longer have accessed to system, his or her access must be revoked immediately upon the termination of duties. All access to server and network equipment room made by authorized person, escorted visitors and vendors must be logged when entering the room, logs must be reviewed on a regular basis. Vendors must supply e names of all

authorized personnnel that will be performing on-site work and must keep the list up-to-date at all times (Kumari, 2015).

4.2.3 E-Resources Administration

All system admnistrations (Those individuals charged with the daily administration of E-Resources within a unit of the institution) have the following rights, responsibility and restrictions.

Rights

- Administrative authority to establish secrity controls and protection for information and e-resources under the authority.
- Administrative authority to grant other users the authority to read, write, edit, or delete information in files or databases established by them.
- Administrative rights over certain E-resources as delegated by the appropriate Institution Officer or Unit of the institution.
- Employ a variety of security monitoring devices and tools to identify misuse or unauthorised use of systems under otheir management.
- To temporarily shut off the institution's internet connection, without prior notice, in order to protect Institution systems, data and users. A member of ITS management team must give approval for the the Internet connection to be shut down.

  (Forsman, 1998)

Responsibilities

- Preserve the availability and integrity of institution E-resources, data systems.
- Restore the integrity of the affected system in case of abuse, viruses, malfunctions.

- All system administrators will preserve users' privileges, and rights of privacy consistent with this and other applicable Institution policies.

- Provide information to users about policies pertaining to use and access for each user or class of user.

- Determine and authorize the appropriate level of access for each user or class of user.

- Provide or obtain the necessary training for the proper use of e-resources and data made available to the users.

- Ensure that all hardware and software licensing agreements applicable to E-resources are executed by appropriate Institution authority.

- Ensure that all server and networking device user IDs are administered in accordance with established policies.

- Initiate access change, procedures when individual users changes his or her position, (e.g. Graduation, termination, transfer, leave of absence)

- Implement individual department remote access connection methods only when the institution provided e-resources cannot meet their needs and when the method desired will be resonably secure and is certified by the ITS department.

- Perform monitoring and maintenence of e-resources and troubleshooting & resolution of technical problems.

- Assist in the investigation of suspected violation of institutional policies or procedures.

- Take resonable steps to keep their log files secure and physically secure equipment and E-resources.

- Implement basic loging for all remote access systems and remote access sessions.

4.3 Important E-Resources for University Libraries

a) **Bibliographical Resources**

Bibliographic online databases (e.g. SCIFINDER provided by American Chemical Society) are mainly containing information on single subject. These resources are not providing full-text but facilitating the user with abstracts and also provides linking facility to the full-texts in some of the cases, e.g. Biological Abstracts (database covering biological sciences), MathSciNet (bibliographical database deals with mathematics), etc. Some other online database like SCOPUS (provided by Elsevier Science), JGate Plus provides wide ranges of searching facility and linkages to subscribed, free online resources apart from bibliographic details of unsubscribed online contents. The usefulness of data mining facility in SCOPUS is very useful tools to the users and worth mentioning.

b) **Offline e-resources**

Offline e-resources i.e CDs, DVDs, Databases, Cassettes, Magnetic tape etc are also very important e-resources for the library. But the use of these e-resources gradually decreases in the libraries. However, the libraries possessing such information materials must give due importance on their proper maintenance as well as making available necessary hardware facilities to users for use of these information materials.

c) **Full-Text Online Resources**

These online resources provide full-text of the document apart from its bibliographical information with both browsing as well as searching facilities to the users. American Chemical Society is publishing about 33 e-journals. The same way there are, Institute of Physics, Cambridge University Press, Springer Journals, Elsevier Journals and Taylor and Francis, etc. are various prominent publishers who are provides access to full text journals through Internet. Some

of them provide only online journals but some of them provide both print a e-journals. Many publishers across India has also started publishing e-journals (e.g. NISCAIR, Indian Academy of Science, etc)

d) Portals/ Aggregator Products

It is just like a super market, where one can get everything from a single shop. Portals provide a single interface to search various databases, e.g. Under UGC-Info net: E-Journals Consortium Indian universities are accessing 20+ different databases or products. Ingenta and J-Gate are the examples of these portals. So as the aggregator products, aggregator purchased the contents (on mutual or legal understanding) from the actual publishers and providing the access to users, e.g. EBSCO, JSTOR are the aggregators who are providing access to 1000+ publisher's journals from single window.

e) Library Networks

The proliferation of the literature on all the subjects and the budget crunch made the libraries depend upon each other. This leads to resource sharing among the libraries. The main objective of resource sharing is to create an environment in which libraries can offer better services and meet user's needs within available limited resources.

f) Open Access Journals (OAJ)

A large number of E-journals are made available in net freely which are termed as Open Access Journals (OAJ). Those have covered almost all areas of knowledge. Some of the sites of OAJ have covered almost all disciplines; on the other, some of them are specific to a particular subject area. E-journals made accessible through DOAJ directory (htpp://doaj.org) are freely accessible. It has been seen that many of the commercial publishers are providing free access to few of their archival E-journals some time only current issue products which can also be categorized in to this group.

g) **Institutional Repositories (IR)**

About 20 years ago, the first disciplinary repository – arXiv – was created at the Los Alamos National Laboratory. Since then, a large number of Institutional Digital Repository (IDR), and Institutional Repository (IR) have emerged to foster online scholarly communication in almost all academic disciplines. Institutions are patronizing to develop E-resources repositories in the form of Institutional Repositories (IR). For example, the repositories at the INFLIBNET (http://dspace.inflibnet.ac.in) & Indian Institute of Science (http://iisc.ernet.in) are accessible freely by its member libraries.

h) **E-Theses and Dissertations (ETD)**

ETDs are the digitized version of theses and dissertations. These are the intellectual capital of an organization created by the graduates and research scholars in universities and research institutes. ETDs which are very important sources of online information for undertaking any research works are generally accessed online.

i) **Websites and World Wide Web**

Websites of a particular organization, be it Government, Semi Government, Scientific and other institutions, etc and of individual are also a source of information. The internet through its World Wide Web has given a paradigm shift to information management. The information available on net is increasing rapidly and the task of providing relevant information to patrons is gaining paramount importance in all types of libraries.

j) **Blogs**

New web technology tool options on the Internet to share one's views or opinions with other fellow professionals around the globe is being introduced in the form of Blogs/ Professional discussion forums is a part of web **2.0** technology. As mentioned, because of extensive use of web based information

and for the facilities of extension of remote log in individuals are availing facilities of meeting each other through their blogs.

k) E-Journals

Electronic serials may be defined very broadly as any e-journal, e-magazine, newsletter or type of electronic serial publication which is available over the Internet. Within this broad definition, the titles can be electronically accessed using different technologies such as the World Wide Web, gopher, ftp, telnet, email etc.

Open access resources

A number of initiatives striving to ensure "open access" to scholarly information in all disciplines and to bring control over publishing process back to scholars, emerged in late nineties and in the first years of the 21st century like Open Archives Initiative, Scholarly Publishing and Academic Resources Coalition (SPARC), Public Library of Science, Budapest Open Access Initiative etc. and during the year 2004, these initiatives as well as ideas represents, became largely recognized and respected by the scientific community, and the term "open access movement". The open access movement is supported and advanced by a spectrum of interest groups and activities such as national and international organizations, publishers, individuals, and many special events. While open access is gaining strength and popularity as the new model for dissemination of information, there are still many issues which are not completely resolved such as pricing models, peer reviewing, indexing and impact factors, archiving, and the stability of this new publishing model for scientific literature. The open access movement has had a tremendous worldwide impact and involves not only the academic and publishing communities but also many other disciplines. There are huge numbers of online resources covering social sciences that are prevailing as open access initiatives. In this technologically changing world, the online

resources are the only solution to provide right information at right time to an individual user. In this regard the library and information science professionals must gather knowledge and right information about the latest changes taking place and various technologies in the field of online resources. All the social sciences research scholars have to depend highly upon the subscribed online resources by the library as well as free available resources. The different issues which are discussed above are regarded to be the main consideration for the online resources of social sciences. But the access of most of the e-journals, which are published by the commercial publishers, like Springer Link, Kluwer Online, Elsevier Science, IEE, and IEEE, ACM Digital Library, Emerald, etc. is restricted to the subscriber institutions or individual subscribers only. Online resources are available in different formats for accessing e.g. ASCII Text, HTML, Web Pages, Power point presentation and some PDF. The electronic resource are acquired through a number of sources including registration for free online access offered in conjunction with print subscription, consortium licenses, aggregation of journals compiled by third party vendors and licenses for individual journals titles negotiated directly with publishers along with open access initiatives. Choice cards, Project Gutenberg, Internet Public Library (IPL) Directory of Book on the Web, Danny Yee's Book Reviews, H-Net Reviews in humanities and social sciences, Book page, New York Times "Best Seller", ARTstore, JSTOR etc. There are other important review sites like: Booklist Quarterly, Black Review of Books, Atlantic Monthly, Book Wire etc. again there appears now many bookstores on web from where selection of e-books could be made. In the present environment of hybrid nature, there has to be separate budget for E-journals, e-books and other online resources including printed journals. In India too several consortium have been developed in the past years such as INDEST Consortium, UGC- INFONET, FORSA Consortium, CSIR Consortium, IIM LIBRARY Consortia, ICMR Library Consortia, HELINET, MCIT Consortium etc.

Based on the financial management and the number of participating libraries, library consortia can be classified in to the following types.

a) Open consortia: An LIC can join and leave in an open consortia at any moment according to their choice. Here, the publishers who are providing the resources decide the minimum number of libraries to run the consortia and the price rate per product. A small group of homogeneous libraries of a specific discipline can form open consortia. AICTE-INDEST run by Ministry of Human Recourse Development, Government of India is an open consortium.

b) Closed consortia: An exclusively defined group of libraries can form a closed consortium. The coalition, affiliation and collaboration among the numbers lead to the establishment of closed consortia. No member can join or leave the group according to their wish. IIM consortium is an example of closed consortia.

c) Centrally funded consortia: A central funding agency runs the consortia of a large group of libraries and directly deals with the publishers and the aggregator. For example, UGC runs the UGC-INFONET Digital Library Consortia among the university libraries in India which maintained by INFLIBNET.

d) Shared budget consortia: The member libraries of the consortia run and handle the financial matter required to run it. IIM consortia and FORSA are the example of this type of consortia.

e) National consortia: A large number of libraries within a country can be provided resources under this consortium if the national level licensing of the resources can be obtained. UGC-INFONET Digital Library consortium is working successfully in India.

f) Publisher initiative: EIFL Direct (Electronic Information for Libraries Direct) consortium is a joint project of the open society institute (OSI) and EBSCO publishing, one of the world's largest suppliers of journals via electronic and printed media. It provides access to over 3300 full text international journals and 5000 periodical's abstracts and indexes and covering

Humanities, culture, Education, Medicine, General Sciences etc. The network of EIFL direct has member of more than 45 developing and transition countries in Africa, Asia and Europe and in over 10 countries in Africa, Europe and Latin America.

A library consortia formation can be at local, state wide, national and international level for making available the resources and services available both within the premises of members and outside for the benefit of members. Some of the services can provide through consortia are:

a) Union Catalogues: Books, Journals, Technical Reports and Conference Proceedings b) Shared library systems: Hardware, Software and other infrastructure c) Human resource development: Training staff and uses d) Inter Library Lending and Document Delivery: Both physical and electronic documents. e) Electronic content loading: Contents generated by members and storing as well as retrieving on common server.

The standards and protocols that concern the librarians most in a library consortia environment, which is beyond licensing electronic resources, are: a) Metadata standard or Resources description standards- AACR2 and Dublin Core b) Resource exchange standards- MARC, CCF c) Protocol standards for Resource discovery-Z39.50 and d) Standards for Interlibrary Loan-ISO 10160/10161. Since e-journals are costly, library and information centers of particulars interest may come together and form consortia and negotiate with the publishers or aggregators to have access of e-journals for their library users. The consortia approach of acquiring e-journals are very much popular in USA, UK and many western countries; of course, this has now been coming up in India with the forming of INDEST, FORSA, CSIR, IIM, and UGC-INFONET Digital Library consortia. The consortia like INDEST, FORSA and CSIR are functioning successfully and UGC-INFONET Digital Library Consortia for e-journals access managed by INFLIBNET are under experiment and trials. It can be hoped that in near future these consortia will also run successfully and both publishers as well as UGC will be benefited.