CHAPTER - 6

ROLE OF DIGITAL LIBRARIES IN USER’S SERVICE

6.1 ROLE OF DIGITAL LIBRARIES:

In the present network society, when new technologies have been continuously emerging and challenging the library services, human being activities have been developed extensively in the field of storage and dissemination of information in digital environment. Information communication technology has changed the society as world’s society and converted in a global village. It has also influenced information industry and libraries have changed their policies and accordingly their infrastructure to meet the needs of the users. It has been a revolutioned change in the users behaviour and information seeking attitude and they need a revolution in traditional libraries to be shaped in new form of digital library and digital collection building.

If information is for all, then libraries should also be open to all to access information. Libraries should be Universally recognised and linked with all sources for information. European libraries have already switch over to digital mode, but developing countries like India are still log behind because of many reasons like inadequate infrastructure and lack of skilled staff. The modern libraries are converting print format into electronic format and print format is being discouraged. A digital library is a rich collection of digital resources. Digital libraries are also called with other name as Virtual libraries and Electronic libraries.

It integrates all kinds of information resources with all possible levels of bits and bytes. All information found Universally are digitalised for a storing and distributing through the networks across the boundaries globally. It is a unit or a mode of managing knowledge and information in digital form for users interaction. It is like a large database for the community working on hypertext environment. It support creation of knowledge and storage, preservation and dissemination and use of data, and information.

In other words, digital library is a centre for managing information collection with associated services, where information is stored in digital form and accessed through
networks. It provides digital resources, organise them and manage them in electronic form and distribute it to its users on demand, by the skilled staff by selecting, storing, accessing, interpreting, distributing and preserving and then ensure current information available to use economically.

A digital library has following special features to provide services to its users:

(i) Organising multimedia collection,
(ii) Resource in computer processing form,
(iii) Function as a service centre for acquiring, storing, preserving, and retrieving information,
(iv) Access facilities to entire collection,
(v) Users supported for dealing with digital objects,
(vi) Organise and presenting digital objects in digital form.

6.1.1 Service Requirements of Digital Libraries:

Internet has been a strong media of accessing information resources and World Wide Web works as a information search media on internet. Both created a digital environment. Internet is a access protocol and www provides tool and techniques. Digital library requires following tools and techniques to serve to users:

(i) **Audio-Visual tools:**
   
   (a) T.V.
   (b) V.C.R.
   (c) D.V.D.

(ii) **Computer techniques:**

   (a) Server
   (b) P.C. with multimedia
   (c) U.P.S.
(iii) **Networks:**

(a) LAN  
(b) WAN  
(c) MAN  
(d) Internet

(iv) **Printing tools:**

(a) Laser printer, Dot-Matrix printer, Barcode printer, Digital graphic printer.

(v) **Scanning tools:**

(a) HP Scanjet scanner  
(b) Flatbed scanner  
(c) Sheetfed scanner  
(d) Drum scanner  
(e) Slide scanner  
(f) Microfilm scanner  
(g) Digital scanner  
(h) Barcode scanner

(vi) **Storage devices:**

(a) Magnetic storage device (Hard disks, diskettes, disk cartridges etc.)  
(b) Optical storage device (CD-ROM/DVD-ROM, CD R, Photo CD etc.)  
(c) Optical Jukebox

(vii) **Software:**

(a) Suitable software which can be connected with LAN, WAN connecting P.C.
6.1.2 Service Portability from Traditional to Digital Library:

Both type of libraries, whether traditional or digital, serve their readers to the best of their satisfaction. Closed access libraries are being shifted to open access library. Open access libraries are shifting to automated libraries and automated to electronic library. Virtual libraries may be categorised in three types: (i) Traditional library (ii) Automated library (iii) Electronic or digital library.

Automated library consist of machine readable catalogue, computerised acquisition, circulation and OPAC. Electronic library consists of LAN, CD-ROM, WAN, while its advanced form hybrid library work with both print and digital environment and display digital products.

Therefore, digital library has many significant characteristics:

(i) Information explosion,
(ii) Searching information easily,
(iii) Low cost technology,
(iv) CD-ROM/www facilities,
(v) New generation needs.

There are many plus points with digital library serving the users:

(i) No physical boundaries,
(ii) 24/7 Access facilities,
(iii) Multiple access,
(iv) It has structural approach,
(v) It has information retrieval facilities,
(vi) It can preserve and conserve digital resources,
(vii) It require less space,
(viii) It has network connectivity,
(ix) It involve minimum cost.
On the other hand, there are many barriers in providing services to users (i) Copyright botheration, (ii) More load, low speed of internet (iii) Initial cost is higher (iv) It needs bandwidth which is decreasing day by day due to over utilisation (v) Preservation methods changeable from time to time.

There have been many services being rendered by digital libraries:

(i) Audio-Visual communication,
(ii) Bulletin Board Service,
(iii) CD-ROM databases,
(iv) Current awareness service,
(v) E-document delivery service,
(vi) File transfer protocol (FTP),
(vii) FAQ (Frequently asked questions),
(viii) Library portals,
(ix) Remote information services,
(x) Web OPAC,
(xi) Referral services.

6.1.3 Information Service in Digital Age:

Libraries started as store houses in and before Mughal period in India and in Alexandria (Unan), where books were more preserved than to utilise them. Librarian was custodian and interaction between librarian and reader was negligible. Librarians were not encouraging the readers. Reader’s has self approach to library without any motivation. Libraries deal differently with different users. One read the books, other newspaper while third read journals. Their place is also different and different time also. Librarian’s role is also important as it allow access facilities, organise information and provide it to users.

Library service is a key element for libraries. Information is provided to users within a time frame. Time frame varies with user’s nature of task and needs. The present user access a vast amount of information on internet and online databases. Library services cannot be deduced, if library is active to serve. There are no more informations on web speedily, demand of users for quick response to information need, technical deficiency
and efficient search of right information at right time are problems faced by libraries. Library organise collection of various types of sources of recorded information which includes catalogue, directories of factual information and also indexes which help in finding other resources.

Libraries play as intermediary between information producer and the users. Producer provides products to library and library provides products to users, which reduces many problems of users in making the relevant resources available for access. Libraries provide such services free of charge.

Library play important role as under:

(i) Selection of value-added resources available in market place according to users need,
(ii) Storage of resources for short term and long term both,
(iii) Providing service facilities to make resources available through circulation or on loan,
(iv) Providing guidance and support to users by user education programmes and users orientation programmes.

Library resources may not necessarily be owned, but may be loaned from other libraries, some may be available free or some may be on payment. Libraries make the resources valuable by searching their users through marketing or publicity programmes. Library added value to information by providing access facilities through indexing and abstracting or bibliographical resources by systematic managing and organising them.

Information service or so called user’s service can be categorised in two parts:

(i) Public user service,
(ii) Technical user service.

Public user service may be enumerated as under:

(a) Circulation service,
(b) Bibliographical service,
(c) Distance learning service,
(d) Documentation service,
(e) Reference service,
(f) Special collection service.

User service focus on (i) procedures and operational tasks, (ii) maintenance and selection procedures, (iii) developing library collection, (iv) supporting library collection, (v) acquisition work, (vi) cataloguing work, (vii) classification work, (viii) inter library loan, (ix) document delivery, (x) serial service.

Technical user services are related to internet supported technologies.
These are:

(i) Delivery of information service,
(ii) Delivery of information resources,
(iii) Information access service,
(iv) Hardware service,
(v) Software service,
(vi) Networks service,
(vii) WWW service,
(viii) Referral service,
(ix) Search service.

In the digital environment user information starts with information service, personal communication like e-mail, SMS, Video conferencing etc., computerised catalogue, e-database services, instant messaging services and virtual reference service.

The primary function of a University library has been information sharing and information in various formats, like (i) text (ii) audio (iii) video (iv) electronic creation of information (iv) e-storage (v) e-access (vii) transmitting information.

Traditional libraries and their services have been replaced by electronic formats, systems and services i.e.

(i) Card catalogue has been replaced with OPAC,
(ii) Users search service for information from their desktop,
(iii) Download e-books,
(iv) Full-text retrieval of information resources.

6.1.4 Access to e-Resources:

Automation has been proved as boon to libraries in the field of access information of their choice at any time and any location. OPAC has many diversions to search information. User can consult library holdings from work station. User avail online services. CD-ROM is a storage system of information. Indexing and abstracting services are mounted online as databases or on CD-ROM server and are usually accessible throughout the system. Many more automation systems have been developed to access more and more resources and delivering more bibliographical records.

There has been rapidly transformation of knowledge in the world of libraries. It is no more important to house more and more collection, but it is more important to select important collection which is relevant and fulfill the information needs of the users. Information which respond to user’s choice. WWW (World Wide Web) has been an valuable media of searching information.

Library should be more careful and becoming dependent on World Wide Web. Web resources are frequently change in location or schemes which replaces URLs, updating library’s link to external resources. Information providers are also face problem to long term information maintaining as they may soon tire of up outdated resources. These may be free today but costly by tomorrow.

6.1.5 User’s Work Environment:

University is a academic centre of knowledge and its library is a learning centre. Library serves the users and users are making increasing use of new information technology of computers and electronic storage. It is no more traditional technology of pen, paper and photocopier. New tools are data, text, sound and image which are powerful tools of user’s service.
Modern technology have following technical tasks:

(i) Sending electronic messages,
(ii) Sending text to distance users,
(iii) Compilation of concordance,
(iv) Complex calculations made easy,
(v) Image enhancement,
(vi) Increase in information handling,
(vii) Computing library services,
(viii) Using internet,
(ix) Use of online catalogue,
(x) Remote access.

In fact the increase in service to those who need it in short period and current information has been one of the reason to shift from traditional to electronic library to benefit the users. Library could be able to provide information out of the collection housed in library and extend it services to other libraries, if collection needed by user, is not available in library by generating copies on paper with the help of bibliographical tools.

The electronic technology enables a user to search his information out of library collection and use the sources of other libraries electronically and skillfully by extending substantial extension of library service. It depends on work habits and working environment of users. In Universities it is common to find increasing use of computer information technology. The users prefer electronic library to access information from electronic record which is easy and quick.

All these reasons the use of electronic library increased and users change their use habits in electronic environment. Users prefer remote access to online catalogue and other electronic form. Electronic library is much more helpful, but it needs the user work in electronic form. The new information technology has transformed the use of various resources of libraries with the help of computer technology for (i) identify, (ii) locating, (iii) access information, (iv) transfer of data file, (v) analysing data, (vi) manipulation, (vii) comparison, (viii) revising images, text, sound etc.
But the dial-up access to online resources needs following factors:

(a) **Technological infrastructure:**

Libraries extending its services to electronic environment and it needs the use of computers and its connectivity with internet and other networking. It also need the change in the habits and attitude in users and inclination to access to library resources electronically for which user should be able to:

(i) To search the library catalogue and holdings of distant libraries,
(ii) To search in bibliographic databases and find the items of his needs,
(iii) To search reference books,
(iv) To search images,
(v) To search for text.

All such searches needs copy of electronic form in to personal storage or printing order which require minimum effort to work with computers and convenient movement from file or function and integration of computered task which is possible by hardware and software environment and require compatibility, linking and interoperability through standard protocols.

(b) **From service to self service:**

Library serves the potential users which are sensitive and serious to their studies and search, but it depend on infrastructure of a library. Moreover, electronic library remove many barriers of paper library like opening hours, place of work and other limitations.

All such tasks depend on self service of users and one-to-one service by library professionals, which needs skilled and experienced staff who can face library users. In case of electronic library more use of library services will be from outside the library. Instead of help or dependency on library staff, the self service by user is more useful and convenient, even though the library services is complex.
(c) **Complexity:**

There is increase in complexity with the emergence of new technologies. More problem arises when expertise is not available.

It needs following steps:

(a) User’s education programmes and their increase in frequency,

(b) Expert advice of the library experts,

(c) Simplification of system, complexity should be reduced to make the users expertise more adequate,

(d) Intermediation: Necessary expertise should be provided by intermediary to provide assistance, i.e. reference librarian etc.,

(e) Delegation of power, if necessary the complexity may be made easy by delegating the task or system to new and easy systems or to the other expert of that field.

(d) **Assistance/help:**

There are different needs of different users, which are so extensive and varied because of complexity with resources. Information search too complex, too imperfect and too incomplete and also frequent change in technology, for self service. The public libraries have less complexity than academic libraries because the users of academic libraries are more dependent than public libraries for help and guidance.

Users need assistance in three fields:

(i) Reference service,

(ii) Library guidance and instructions,

(iii) Referral services.

6.2 **DIGITAL REFERENCE SERVICE:**

The digital reference service began in 1980. It was started in academic and medical science libraries. E-mail was the first digital reference service provided.
These libraries introduced reference service by two reasons:

(i) To extend the hours that question should be put up on reference desk,
(ii) To explore the potential of campus wide network.

‘World Wide Web’ was also a mode of digital reference service for question submission, which reduced the increasing load on electronic mail. Such type of reference service was not began in a particular library. It was ‘AskA’ services. The other service was remote based service practiced in libraries with the widespread use of chat software. Reference questions were answered on phone, fax, electronic mail and audio conferencing. Electronic mail is the first and oldest digital reference service started in library.

About 200 libraries were using virtual reference service in USA. Such reference services were increased rapidly because of proliferation of knowledge globally, but there was a challenge to keep information current as it was the first condition effort for digital reference libraries, though it was one of the part of library services in interactive technologies to meet the needs of new generations. New generation has grown up with Google culture or internet. Virtual reference library may be used with web 2.0 such as facebook, blogs, twitter etc. and online services. The range of cost per transaction has been costly due to salaries and infrastructure cost required for reference interviews.

6.2.1 Various Forms of Digital Reference:

There are various forms of digital reference services:

(i) **Webforms:**

Webforms help the users in asking their questions. It helps the librarian to trace the document which the users has asked, but it require the suitable design as it constitute a reference interview and receiving the maximum information.

There are few aspects to be considered within webforms:

(a) E-mail to answer the question,
(b) The particular questions asked,
(c) The type of questions,
(d) The sources consulted by the users,
(e) The object of the patrons/users,
(f) Users are member of library or not,
(g) The name of the user,
(h) The data of the information need,
(i) Type of resource: Print or e-Print.

(ii) **Chat form:**

Chat form is instant messaging services which are provided on low cost. Such services are provided free and allow a user to contact the library from any location via internet. It is a interaction between a library and the user.

In this form of reference service, many aspects involves:

(a) Creation of a profile online,
(b) Conversations should be error less,
(c) It should be familiar with abbreviations.

**6.2.2 Digital Reference Software:**

The software should be (i) Chat web based, (ii) Instant messaging based (iii) Text messaging based, (iv) Digital audio-video reference based.

The reference service software should have following features:

(a) It should meet information needs,
(b) It should chunk information,
(c) User can access independently,
(d) It should make serialised listing of FAQ (Frequently asked questions),
(e) It should be instant messaging and chat based and users may feel satisfaction,
(f) E-mail may be used in responding to reference questions,
(g) It should involve short message service or SMS (use of mobile phone may be possible),
(h) Co-browsing or cooperative browsing may be possible. It should have interactive control of a user’s web browser.

Hence, reference service provides answers to computer questions via electronic means, i.e. e-mail, webforms, interactive chat and application sharing.

6.2.3 Need:

The number of users has increased enormously. It is not possible to users to visit library and locate the books easily and using the website using internet to find information due to large number of users. Libraries found it difficult to contact each user, since it begin with website and web based access to library catalogue and the collection. It has been the duty of library to provide quick service at the point of need.

Digital reference service accept the challenge of such people, who are unable to visit library physically. Users may submit their queries at any time at any place and at any location in the world. Digital reference service provides an opportunity to provide information online.

6.2.4 Objectives:

The main objectives of digital reference service are:

(i) It enable a user’s to contact library online,
(ii) To provide information even at home,
(iii) It identify the information and satisfy the users need,
(iv) To develop effective search strategy and recognise the topic order to provide adequate information,
(v) To satisfy the users with information provided,
(vi) To provide good quality and valuable information to the users,
(vii) To analyse and critically evaluate the information in order to provide authentic and authoritative information to the users.
6.2.5 Prerequisites of Digital Reference Service:

There are many prerequisites to be considered before providing digital reference service:

(i) **Staff training:**

The library professional is an experience person or qualified. He needs proper training to provide digital reference service. The training provides necessary guidance for developing a programme to develop confidence at the reference desk.

(ii) **New recruitment:**

It is necessary to take careful consideration to recruit skillful staff members for reference service. Even though due to timely emerging technologies, the new staff member needs proper guidance and supervision of senior members in providing reference service.

(iii) **Interface design:**

The reference desk should be designed to access resources and expertise for dealing with user community to avail reference facilities. The present era is computer era and most of the users have facilities of computers and internet. Many softwares are freely available on net, which can be helpful to download information and use. Digital reference service should be protected and continuously given to meet the needs of the users constantly to make it successful.

(iv) **Evaluating the service:**

There are three components which are basic and important aspects of digital reference service, i.e. computers, skilled staff and the software. Most of the libraries of higher education has facilities of internet. Softwares are available freely and reference service is readily available and implemented fully to meet the needs of the users.
But there is a need of maintaining standard to achieve in creating and maintaining digital reference service. Digital reference service may be evaluated in several ways, i.e. through questionnaire, observation, case studies and interviews. The following methods may be applied to evaluate reference service:

(a) User’s feedback,
(b) Rating scale,
(c) Survey methods (Questionnaire),
(d) Observation methods,
(e) Interview methods,
(f) Case study methods.

6.2.6 Challenges in doing Digital Reference Service:

Challenges can be divided in three categories:

(a) Administrative challenges,
(b) User expectations challenges,
(c) Insight challenges.

(a) Administrative challenges:

(i) There is increase in number of e-resources without making any consideration in budget,
(ii) There is license needed and its terms,
(iii) Competency of staff and their willingness to work,
(iv) Documentation of e-reference service,
(v) To maintain secrecy in digital reference service,
(vi) To maintain reliability and continuous publicity,
(vii) Timely evaluation of digital reference service,
(viii) Proper training,
(ix) Long term maintenance.
(b) **User expectations challenges:**

There are many challenges which arises out of users expectations:

(i) Quantity of requests,

(ii) 24/7 services,

(iii) Proper marketing,

(iv) Information delivery program, i.e. know the client (i.e. e-mail, phone, chat etc.),

(v) Knowledge of customisation or marketing trend of users needs,

(vi) Speed of online service and bridging the print online divide.

(c) **Insights challenges:**

(i) Librarian should act as information filter,

(ii) Focus of librarian should be on user’s service,

(iii) Human intermediation of information need and assistance by advice using information retrieval systems.

6.2.7 **Collaborative Reference Service:**

(a) **Value added librarians:**

In modern time user need relevant, verifiable and authoritative information and that quickly. Libraries serve its users with current information after acquiring, describing the required information by any time at any location. Reference desk work as cyber cafe. Libraries organise information with controlled vocabulary and other tools to make material accessible.

Library design selection policy and select resources accordingly. Libraries have both digital and analog collection, regulated by subject experts. Research scholars use e-mail, phones, fax, chat rooms and video conferencing. Librarian also work and offer expertise and serve as bridge between resources and users. Information needs timely evaluation because of economic and intellectual considerations.
(b) **Academic Reference Service over E-mail:**

Electronic mail has been used in academic libraries. It has been experienced that more number of enquires have been through phones and questions, were more inappropriate.

There are few useful tips, which may be helpful for libraries:

(i) E-mail is more useful and a part of e-framework,
(ii) It is largely used integrated with computers and other communication channels,
(iii) ‘Ask a librarian’ programme has been organised,
(iv) Description of questions and service given,
(v) Check the questions daily and on every working day,
(vi) Source may be cited.

(c) **Self Service Technology:**

Bibliothek offered opportunity to meet the needs of the user’s who required the service ‘click and go’ on payment by card without any waiting or losing time. It provides fast access to the regular web users, who are capable of making payment.

It has two benefits:

(i) Libraries promote other services also to new users,
(ii) My community initiative has enabled the libraries to become a focal points and offer services beyond lending of material.

There are huge potentialities for more self service tools in libraries.

(d) **Reference Desk:**

Reference desk is a point of reference services to users for taking help in finding information. Librarian interact with users to clarify their needs and determine
their need of information resources. As per medical analogy, the librarian diagnose and treat information deficiency.

The following help is provided to users:

(i) Use help to search reading material,
(ii) Instructions in using specific searchable e-resources,
(iii) Help to access online catalogue,
(iv) Help to access online databases, full-text databases or reference collection,
(v) Reference desk can be consulted for help by telephone, e-mail or online chat.

Reference desk services depend on the type of libraries:

Reference sources housed in reference desk are:

(i) Computer with internet connectivity,
(ii) A small collection of reference books,
(iii) Newspaper clipping files,
(iv) Index cards with answers to frequently asked questions,
(v) Books and other collection which is provided to library users through phone,
(vi) List of items which are not included in catalogue.

Reference desk services:

Reference desk provide following services:

(a) Reserving computer with internet access,
(b) Place the books ‘on hold’ on request of users,
(c) Providing inter library loan service,
(d) Recommendation for library purchase for its collection,
(e) Librarian perform other service also:
   (i) Giving brief answer to user’s questions,
(ii) Informing the users about availability of item with a particular title,

(iii) Help the users to take them to shelves to trace the material,

(iv) Make the user familiar with many reference resources,

(v) Guiding the users to access online databases,

(vi) Recommending reliable websites.

(f) Electronic reference services:

(i) ‘Ask a librarian’,

(ii) Digital reference,

(iii) Search engines used for internet,

(iv) Reference scenario.

**Example:** ‘Ask a librarian’/ question point.

<table>
<thead>
<tr>
<th>Name of the library:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welcome to our library.</td>
</tr>
<tr>
<td>Please fill in the information below and click submit to chat with a librarian.</td>
</tr>
</tbody>
</table>

**Chat Information:**

<table>
<thead>
<tr>
<th>Name (Optional):</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-mail (Optional):</td>
</tr>
<tr>
<td>Question:</td>
</tr>
</tbody>
</table>

Submit

**Other Example:**

(a) Answers.com- a Q & A website
[http://www.answers.com]

(b) Ask.com
[http://www.ask.com]
How to Establish a Reference Service:

There are few factors involved to begin reference service, i.e. e-reference or virtual reference service. What is the need of the user’s or his question and which source is available to answer the question. In instant messaging reference service, we make a programme to consider the user’s question and its answer.

Instant Messaging Reference Service:

User’s need (Question) → Assessment of need → Resource required or allocated → Technology involved → Policy determined → Staff skill & Training → Customisation/marketing → Service promotion → Evaluative efforts → (User’s need……………)

The above is a circle of instant messaging reference service and it continue under the model “Ask me” project.

(i) The first step is user’s need or question which is assessed in consultation process in which identification and involvement of a resource is studied.
(ii) Allocating resources is other step which identify it as suitable to answer.
(iii) Technology applied is another effort as technology often changes and decision is taken about the latest technology providing latest information available.

Some websites for the purpose are:

(a) The Wikipedia users.
(b) Information Weak: (Search for messaging).
   [www.informationweek.com]

(iv) The policy determined should be the mission of the institute developed by the library.
(v) Staff support is necessary, but it would need special training and skilled staff.
(vi) Marketisation of reference service is necessary, which is a challenging process.
(vii) Evaluation of reference service is held, which depend on the availability of log files and transcripts of reference service.