Digital Reference Service in libraries of NIT Colleges in India: A Study

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Abstract

Reference and information services have always been the main component of library services. They provide personalized assistance to library users in accessing suitable information resources to meet their needs. Digital reference service is an emerging trend of traditional reference service. Easily accessible digital reference service has become one of the hallmarks of the library and information services. The paper highlights how new visage of traditional reference service is developing as a natural solution to keep pace with comprehensive technological environment. It discusses about the basic concepts, elements of digital reference service and give in detail modes, the advantages, limitations, and some details regarding various digital reference services.

Keywords

Reference, Reference service, Digital, Digital reference, Digital Service, Digital reference services, information communication technology (ICT).

1.　　Introduction

Libraries, the storehouses of knowledge, have got a new outlook in the age of information communication technology. New and advanced technologies have brought significant changes in the education system. Almost all the countries of the world have adopted the new technologies for teaching and learning process where India is not an exceptional one. As a part of educational system libraries have also been influenced by the exhaustive innovations in information technology, computer technology and communication technology. These technologies have transformed the way librarians are collecting, organizing, storing and disseminating information. Technological developments have created new opportunities and challenges for libraries in creation, promotion and dissemination of information.

Library is one of the many institutions undergoing change in the face of technological advances. This, in turn, has led to the generation of new services, hit her to nonexistent, as well as modification of existing library services and their deliverables, as well as the move towards new communication paradigms and the shift from face to face human contact to human machine interaction, from paper to electronic delivery, from text centered mode to multimedia and from physical presence to virtual presence.

Digital reference service is an emerging trend in the   21st century. It   differs from traditional reference service. This new phase of   service is evolving which may prove a solution to keep pace with the multidimensional   technological environment. Digital   revolution keeps libraries and their collections more visible, accessible and usable. The amount of   digital information used in libraries is largely network based.

Technological developments have affected not only the format and sources of the information that libraries use to provide but also the provision of providing reference services. Libraries and their resources have partially moved to the virtual world of Internet. As a result, library patrons can access resources from outside of the

physical library. In an effort to reach patrons accessing the library via computers, many libraries and library consortia are extending their reference services to include

virtual reference. Technology now allows users to submit their queries to the library at any time from any place in the world. Virtual reference is responsive to the patrons' need for convenient access to reference service.

Providing digital reference services to users poses a myriad of challenges. Virtual reference transactions, whether through e-mail, instant messaging or chat, or text messaging, more often than not require an entirely different approach than does an in-person transaction.

1.1   Reference Service

Reference services arose in the late 19th and early 20th centuries in response to several forces and trends, including an increase in the number and variety of information resources available in libraries and outside, an increase in the complexity of those information resources, This growth has made it more difficult for people to find the resource they were looking for, and to find the information they needed within that resource, and an increase in the number and diversity of people using libraries (particularly public libraries), leading to a wider range of information needs, enquiries, and sophistication in the search for information (Janes, 2002).While reference services provided a useful facility to library patrons, the services themselves involved with time. The changes in reference services were brought about by new patrons, some of whom were not comfortable using network resources. Perhaps the greatest thrust for changing reference services is the increasing number, availability and complexity of online material in the digital age.

The reference desk or information desk of a library is a public service counter where professional librarians provide library users with direction to library material, advice on library collections and services, and expertise on multiple kinds of information from variety of sources.

1.1.1 Digital Reference Service

While librarians struggle to optimize service they provide to their respective communities, they are also keenly aware that a large segment of their population never visited libraries. Digital reference service encompasses service that can be delivered at the user's point of need. This entails instant messaging (IM) reference services and SMS reference service (also referred to as a Text-a-Librarian service), as well as proprietary online chat platforms, known simply as chat. Twenty first-century digital culture is such that most people now work and communicate primarily in front of a computer screen and spend a majority of their day connected to the online world. Digital reference service occurs online as a means to meet the needs of users where they are. Variously referred to as electronic, digital or virtual reference service, its salient feature is that communication between user and librarian takes place online. Digital reference services have been developed in response to a number of inter related factors. The terms, "digital reference", "Internet information services", "e-reference," virtual reference", "real-time reference" and "live reference" are used to describe reference services that utilize computer technology in some way and other way.

1.2 Definition

1.2.1 Reference

"If you refer a particular book or writer, you make a precise reference to them in what you are saying or writing".

"A writer or a book or an article etc. is mentioned in a piece of writing, showing you where particular information may be found". - Cambridge English Dictionary

"Reference to many types of printed matter may come in an electronic or machine in readable form. For books, there exists the ISBN and for journal articles, the Digital Object Identifier (DOI) is gaining relevance. Information on the Internet may be referred to by a Uniform Resource Identifier (URI)". - Wikipedia

"The word "reference" in this context refers to the text of providing assistance to library users in finding information, answering questions, and otherwise fulfilling users' information needs".

1.2.2 Reference Service

According to the American Library Association's Glossary of Library Terms, 'Reference Service is that phase of library work which is directly concerned with assistance to readers in securing information and in using resources of the library in study and research.'

Ranganathan defines Reference Service as 'personal service to each reader in helping him to find the documents answering his interest at the moment pin pointedly, exhaustively and expeditiously.' Both

definitions convey that reference service means 'process of establishing contact between a reader and his documents in a personal way.' 'His documents' refer to those who will serve his requirements precisely.

1.2.3 Digital

Prior to digital technology, electronic transmission was limited to analog technology, which conveys data as electronic signals of varying frequency. Broadcast and phone transmission has conventionally used analog technology.

Digital describes electronic technology that generates stores and processes data in terms of two states: positive and non-positive. Positive is expressed or represented by the number 1 and non-positive by the number 0. Thus, data transmitted or stored with digital technology is expressed as a string of '0's and '1's. Each of these state digits is referred to as a bit (and a string of bits that a computer can address individually as a group is a byte).

Digital technology is primarily used with new physical communications media, such as satellite and fiber optic transmission. A modem is used to convert the digital information in your computer to analog signals for your phone line and to convert analog phone signals to digital information for your computer.

Digital data, in information theory and information systems, is discrete, discontinuous representation of information or works, as contrasted with continuous manner, or represents information using a continuous function.

Although digital representations are the subject matter of discrete mathematics, the information represented can be either discrete, such as numbers and letters, or it can be continuous, such as sounds, images, and other measurements.

1.2.4 Digital Reference

Digital reference is a service by which a library reference service is provided online, and the reference transaction is a computer-mediated communication. It is the remote, computer-mediated delivery of reference information provided by library professionals to users who cannot access or do not want face-to-face communication.

"Digital reference is reference service initiated electronically, often in real time, where patrons employ computers or other Internet technology to communicate with reference staff, without being physically present.

Communication channels, used frequently in digital reference, include chat, Video conferencing, voice over IP, co-browsing, e-mail and instant messaging.

1.2.5 Digital Service

"A service (i.e. not goods) Delivered via internet, or an electronic network is known as Digital Service. Supply is essentially automated or involves only minimal human intervention. It is impossible to ensure in the absence of information technology." The term 'Digital services' refers to the electronic delivery of information including data and content across multiple platforms and devices like web or mobile.

1.2.6 Meaning of Digital Reference Service

Digital reference service refers to a network of expertise, intermediation and Resources put at the disposal of a user seeking answers in an online/network environment. The terms 'Digital Reference Services', 'Web-based Reference Services' and 'Electronic Reference Services' are used inter changeably as terms with similar meaning.

Digital Reference Service is only an advancement of the same traditional service which is emerging as a natural solution to meet the users' information needs in the changing technological environment. Technically speaking, Digital Reference refers to a network of expertise, human intermediation and resources placed at the disposal of users in an online environment. It employs automated tools wherever possible, allowing human experts to concentrate on 'hard questions'. Automated tools are less expensive to incorporate in to online services and sites, allowing digital libraries to provide efficient and speedy services to its users.

The following are various definitions of Digital Reference Service. According to Lankes (1998), 'Digital Reference is Internet -based question and answer service that connects users with individuals who possess specialized subject or skill expertise'

'A digital reference occurs when a question is received electronically and Responded to electronically'. (Bertot, Mc Clure and Ryan, 2000)

Janes, Carter and Memmott (1999) developed their own definition of Digital Reference as'a mechanism by which people can submit their questions and have them answered by a library staff member through some electronic means (e-mail,chat, Web etc.) and not in person or over the phone'.

According to Smith, "Emphasis on use of print as well as digital reference services provided over the Internet and can involve the use of both print and digital resources."

According to Wikipedia "Digital reference   service is a service by which library reference service is conducted online and reference transaction is a computer mediated communication".

1.3   Benefits of Digital Reference Service

- Availability for usage at anytime and anyplace

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- Expanding the interactive learning of users
- Comprehensive answers from the staff
- Minimization of ambiguity through the written replies

1.4   Elements of Digital Reference

According to Linda Berube, a digital reference service incorporates the   Following   four basic elements:

- The User
- The interface (web form: e-mail, chat, video etc.)
- Electronic resources (including electronic or CD-based resources, web resources, local digitized material etc.)
- The information professional

1.5   Modes of Digital Reference Service
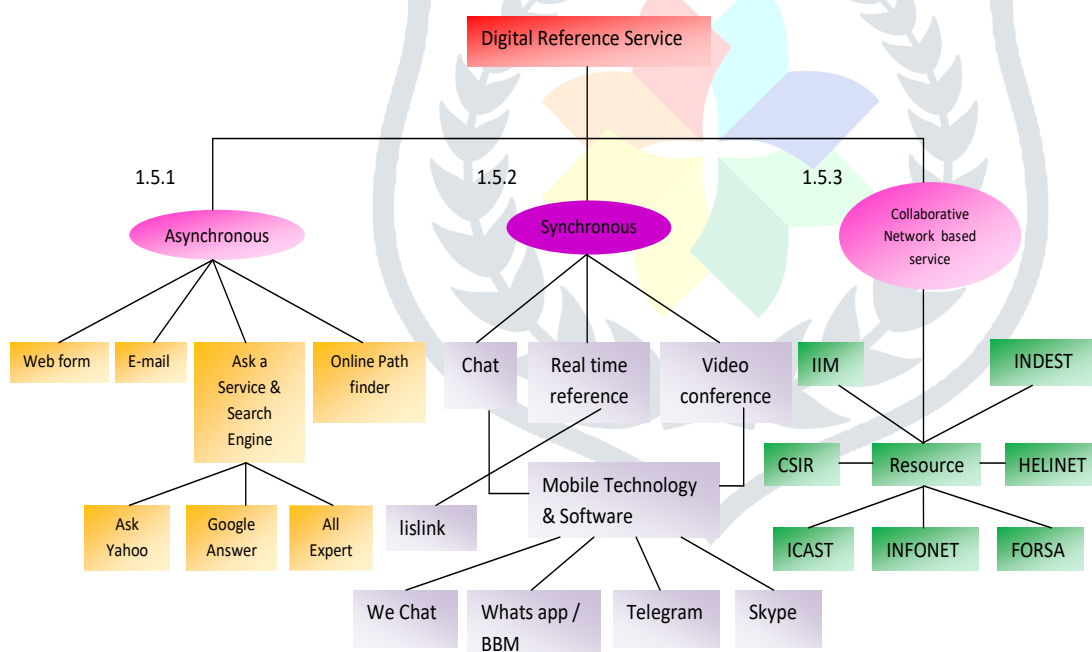
1.5.3   Collaborative Digital Reference Service

This is a project of the library of congress and its partner libraries to fulfill the goal of providing professional reference service to researcher at any time anywhere. The vision behind Collaborative Digital Reference Service is to route efficiently the reference query to the librarian most readily able to answer it. One of the limitations of round the clock live web reference ironically, arises from one of its strength - the possibility of collaboration and resource sharing among libraries from countries in different time zones. An

even thornier issue is copyright. The Situation would certainly get more complicated when copyright laws of different countries are involved.

2. Aims and Objectives of the Study

i. To uncover the present status of digital reference services being provided in the libraries under study.

ii. To systematically identify the strength of existing reference service available in the NIT libraries in India.

iii. To find out the various components and modes of digital reference service used in the NIT libraries in India.

iv. To compare digital reference service provided by NIT libraries and ranking these libraries based on study parameters.

v. To conduct users study of digital reference service provided by NIT libraries in India.

3. Research Methodology

The present study is based on investigation and survey method.

i. NIT college libraries in India are selected for the study.

ii. The website of all NIT libraries are explored to identify and assess the present status of digital reference services provided in NIT libraries in India.

iii. A check list/questionnaire and website searching were used for collecting pertinent data from the respective libraries under the study and for user survey also.

iv. The data thus obtained has been analyzed, tabulated and interpreted for a systematic evaluation of the strengths and weaknesses of digital reference service in the libraries included in the study.

v. The hypotheses of the present study were tested.

vi. Finally findings and conclusions were drawn.

4. Data Analysis

The analysis of data is basically based on the research activities carried out through structured questionnaires covering different areas and most of the respondents belong to various levels. The data is analysed in view to the objectives mentioned in the study as follows: The user's study has been conducted in NIT libraries in India. Total 31 NIT libraries in India were identified for the users study.

Table No. 4.1 Provision of Library E-Resources

Sr. No.	E-Resources	No. of Libraries	
		Yes	No
1	E-Journals	31 (100%)	0

2	E-Books	31 (100%)	0
3	Electronic Theses and Dissertations (ETD)	20 (64.52%)	11 (35.48%)
4	Course Material	25 (80.64%)	6 (19.35%)
5	Subject Gateways	15 (48.38%)	16 (51.61%)
6	Reports	5 (16.12%)	26 (83.87%)
7	Archives	6 (19.35%)	25 (80.64%)
8	CD/DVD	27 (87.09%)	4 (12.90%)

Table no. 4.1 Shown that the provision of library e-recourses. E-Journals and E-Books are provided by all libraries. 64.52% libraries provide Electronic theses and dissertations, whereas 35.48% libraries do not provide such facility. 80.46% libraries provide course material while 19.35% libraries do not. 48.38% libraries give Subject Gateways and 51.61% libraries cannot. 16.12% libraries make available the reports, while 83.87% do not. As far as Archives are concerned, only 19.35% libraries show them but 80.64% do not show them. 87.09% libraries supply CDs/DVDs out of 31 libraries. Thus it is quite clear that E-Journals and E-Books are abundantly provided compared to other Library E-Recourses.

Table No. 4.2 Access to E-Database

Sr. No.	E-Database	No. of Libraries	
		Yes	No
1	IEL-Online	31 (100%)	0
2	ACM Digital Library	31 (100%)	0
3	ABI/Inform complete	16(51.61%)	15
4	Springer Link	31 (100%)	0
5	JCCC	12 (38.70%)	19 (61.29%)
6	EBSCO	11 (35.48%)	20 (64.51%)
7	Emerald Full Text	5 (16.12%)	26 (83.87%)

8	Emerald E-books	6 (19.35%)	25 (80.64%)
9	Capitoline plus	4 (12.90%)	27 (87.09%)
10	Nature	26 (83.87%)	5 (16.12%)
11	Indian Standard	13 (41.93%)	18 (58.06%)
12	ASME Journals	25 (80.64%)	6 (19.35%)
13	American Scientist	4 (12.90%)	27 (87.09%)
14	ASCE	10 (32.25%)	21 (67.74%)
15	Science Direct	8 (25.80%)	23 (74.19%)

Table No. 4.2 is about 'Access to E-Databases' all libraries offer IEL- Online, ACM Digital Library and Springer Link facilities. It is seen that ABI / Inform Complete Facility is provided by 51.61% of libraries while remaining libraries do not provide it. In terms of JCCC, EBSCO, Emerald Full Text, Capitoline, Indian Standard, American Scientist, ASCE and Science Direct are least used services by all libraries. On the other hand, Nature and ASME Journals Services are available in 83.87% and 80.64% libraries respectively. This indicates that IEL-Online, ACM Digital Library, Springer Link Services are widely used than other services.

Conclusion

There is no doubt that digital reference is a new powerful method of delivering a reference service. However, many libraries are still experimenting with digital reference service. Libraries that have been providing digital reference services for a few years should move on from experimenting to defining new services. Using digital reference services could be a time saver for users, and using the Internet is generally cheaper than using telephone. Digital reference services provide an extra choice for users, and may take some of the load of a busy reference desk, although it does not lessen the overall workload of the library.

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