Digital Reference Service

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Abstract

Digital reference is an emerging trend of traditional reference service. The paper highlights how the new face of service is evolving as a natural solution to keep pace with the multifaceted technological environment. It discusses about the basic concepts and essential elements of reference service and gives in detail the advantages, limitations and the technology base about the various established and emerging forms of digital reference.

1. INTRODUCTION

Evolving information technologies are dramatically changing every aspect of our personal, social and professional lives. In fact we are living in an amazing time, technologically. Frequency of new terms coined to accommodate the new emerging concepts/subjects is very high. The library and information profession is also facing the challenges of electronic age and been transformed by technology. Advancements in information technologies have brought out incredible changes in almost every aspect of information services. Reference services are also not an exception. Easily accessible digital information has rapidly become one of the hallmarks of internet. Internet has also proved as a cost effective and efficient alternative to traditional communication methods. All these developments gave way to new range of reference services. In this series of developments digital reference is the latest trend of the digital era. Before discussing the digital reference service let us first understand the concept of reference service.

2. CONCEPT OF 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.

3. ELEMENTS OF REFERENCE SERVICE

Essentially a reference service incorporates the following three basic elements:

- Information or knowledge base
- User or client-now likely to be a member of the new cyber-community in which the library operates
- Information professional or librarian, who plays the role of intermediary assisting and advising the user in their information seeking.

Out of these three basic elements of reference service listed above the first is the information or knowledge base. An essential part of the original reference paradigm was the taxonomy of reference sources (encyclopedias, dictionaries, directories, yearbooks, bibliographies, indexes, etc.) that was integral to the early textbooks, and guides to reference sources. Reference material/sources of information which are used for answering enquiries in a library witnessed a complete change in their structure. Over the years the structure of knowledge (information source tools) and the way of accessing it is greatly influenced by the technological advancements in the field of information and communication. A complete new range of tools, techniques and information products is available in electronic and digital form to work.

The most important element of the reference service is user. Essence of the Five Laws of Library Science is that user and his information need is the prime factor in designing a reference service. Reference service is user centred. It means the emphasis is not on the book, the reference tool or the format of the information sought, but on the users, their needs, the service that can be offered to meet these needs, and the education of the user in the structures of knowledge, and ways of accessing and evaluating it.

With the technological advancements, users' information seeking behaviour has also changed. User does not want to visit physically an information centre or library rather he expects the required information right on his complete screen at his seat sitting at some remote location. This means no face to face discussion i.e., no reference interview (the initial discussion between an enquirer and the library or information service staff to determine exactly what level and quality of information would be appropriate as a response to the query made) is required.

Keeping in view all the above factors it is useful for us as information professionals to see where we have come from and to use that knowledge to guide the path for the future. If we keep this vision as we explore the past, present and future of reference service, we may find that tasks of the present are no different from those of the past, and that the role of reference service in libraries is essentially unchanged despite the dramatically changed paradigm within which we must function. The only change is that we have to keep on exploring the present and future possibilities to redesign and implement new range of services as per the time's need and to keep pace with the upcoming technological challenges .

The paradigm of reference service, developed out of this strong user-centered base, set the gold standard that we now seek to re-create in the digital environment. The connections between the three basic elements of reference service are made in a triad of individual relationships between the three, as in the reference interview, the translation of the user's query into the structures of knowledge through the reference sources themselves, and the information professional's knowledge of those information sources. Each of these relationships will need to be re-examined and re-invented in the digital age.

4. DIGITAL REFERENCE SERVICE

Digital Reference Service is only an advancement of the same traditional services which is emerging as 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 into online services and sites, allowing digital libraries to provide efficient and speedy services to its users .

Internet, which is an indispensable valuable source of information and efficient information delivery medium offers a platform for a wide range of existing and future reference services. Another strong feature of

the web based tools is their user friendliness which means not much of expertise is required to use them. In this context the new emerging terms like digital reference service and virtual reference service can really make use of the prevailing technologies and may become the preferred and prevalent services of the digital era.

5. DIGITAL REFERENCE SERVICE: SOME FORMS

Given below are some of the prevalent forms of digital reference services available through internet.

5.1 E- mail based Reference

E-mail is the earliest and perhaps the most prevalent medium of virtual reference. With the proliferation of the internet in the past decade and the availability of an e-mail account to almost everyone in R&D organisation, e-mail reference service became a popular service in large research and academics organisations. Many libraries and information centers are extensively using e-mail facility to provide online reference service.

5.1.1 Advantages

First of all, it offers users the convenience of asking for information or reference assistance whenever and wherever they want, even in the wee hours of the night at some remote physical location where internet is accessible. Convenience is a big criteria that governs the choice of going for any source or service. People will go first to the most likely source that is convenient. It is therefore not surprising that now adays more and more users are inclined to use e-mail reference than some other traditional reference services.

E-mail reference also has the advantage of providing more complete answers than what could possibly be given at a busy reference desk. When answering a question through e-mail, the reference librarian usually has more time to think about the question, the user's information needs, and if necessary, consults with other colleagues who have more related expertise or knowledge.

Furthermore, since ASCII text is no longer the only format permissible in e-mail, librarians can include non-ASII-text documents, such as image and sound files, in their replies to users.

5.1.2 Limitations

Like all other reference tools, e-mail is not perfect and it does have its limitations. Two major weaknesses of e-mail as a reference medium are:

- Long response time, and
- Difficulty to conduct reference interview. Although e-mail delivery is instantaneous, reply is not. It takes time for a reference librarian to respond to an e-mail reference question. The response time may vary from a couple of hours to as long as a week, depending on the volume of reference questions and the policy of the librarian.

Long response time, coupled with the fact that an effective reference interview often taken several e-mail exchanges, may result in frustrations for both the user and the librarian. Worse still, if a librarian offers a lengthy yet crucial and essential e-mail reference interview, the patron may find that the sought-for information is no longer needed by the time it is received.

One other drawback of e-mail reference is that all response will become written records once they are sent out. So one has to be very very cautious (alert) while providing any legal, medical or any such type of information over e-mail although referrals to proper sources may be given.

5.2 Ask A Services

Ask A Service refers to web sites that provide services such as Ask A librarian, Ask An-expert, Ask A-question and Ask ERIC in which users' question are referred to and individually answered by people. Many Ask A Services provide online request forms for users to ask questions and to provide information that is usually obtained from an initial reference interview. In Ask A-Question forms, users are asked to provide information as how the sought-for information will be

used, type of answer excepted, and sources already consulted. This kind of information may help reduce irrelevancy and the number of subsequent communication, thereby to a certain extent alleviating the problem of a cumbersome reference interview process.

There are many Ask A Services available on the web. Some of the important and well known services are listed below:

(a) Ask ERIC
   http://askeric.org

Perhaps the one most well-known earlist Ask A service on internet in academic circles is Ask ERIC. This is provided by non profit educational organization.

(b) Ask A Question
   http://talonline.ca/askaquestion

This service is hosted by Alberta Library. It is a cooperative venture among post secondary libraries.

(c) Ask Me
   www.askme.com

It is a free service where a user simply asks a question and gets answers from the experts. Users enter their questions and their e-mail addresses. Though they can choose not to reveal the later and thus remain anonymous.

(d) Virtual Reference Desk
   http://www.vrd.org

Virtual Reference Desk allows electronic queuing of patrons, co-browsing, web page sending, pre-defined or 'canned' text message, screen capturing, slide shows, demonstrations, chat transferring or conferencing and complete transcript record of the entire session. As sponsor of the annual Virtual Reference Desk and of the popular Dig Ref listserv, the Virtual Reference Desk works to advance "Ask A Services on the Internet and digital reference in general.

(e) Allexperts.com
   www.allexperts.com

It is a free web based reference service that is provided with the help of subject experts like lawyers, doctors, engineers and scientists for answering the questions.

(f) Inforocket.com
   www.inforocket.com

It is a fee-based web reference service where user can ask a question which will be answered by experts. The price per question varies from $5 to $75 according to the nature of the question.

(g) Ask A Librarian

Primarily designed for UK residents, this web based reference service is provided by EARL Consortium for Public Library Networking.

(h) British Library Information Services

The British Library provides special services for business, patent, scientific, technical, medical and environmental information. Apart from some of the services which are free, the users have to pay for other services.

(i) Britannica.com
   www.britannica.com

It is a free information service on the web that allows the user to search and retrieve information from Encyclopedia Britannica as well as a number of other web resources.

(j) Question Point
   http://www.questionpoint.org/

This is a recently developed cooperative virtual reference service launched by the Library of Congress and OCLC, Dublin. It provides libraries with access to a growing collaborative network of reference librarians in the United States and around the world. The answers of the questions are provided by the qualified library staff from the users' own library or may be forwarded to a participating library around the world.

(k) Ask-a-Geologist
   http://www.nrcan.gc.ca/ess/esic/cgi-bin/askgeol_e.cgi

This service is run from the Geological Survey of Canada's Earth Sciences Information Centre, which is a public government library. Although Ask-a-Geologist was initially conceived and operated by a scientist at the Geological Survey Canada, the management of the service was

transferred to the library in 1996 after question volume became unmanageable. Questions are submitted to Earth sciences Information Centre where they are reviewed by the staff geologists. If it cannot be answered it is then forwarded to a member of Geological Survey of Canada.

Although online request forms are popularly used, they are not in themselves a communication medium between users and people who answer their questions. In fact e-mail is the most prevalent communication medium for Ask A Services, particularly those run by libraries, require patrons to provide an e-mail address on their online request forms. In addition to e-mail, some Ask A Services use chat (e.g. exp.com), message tracking ID number (e.g. Library of congress Ask A-Librarian, at www.loc.gov.) as alternative or supplementary communication media. Despite there other means of communication, e-mail remains the predominant and the most prevalent.

Ask A Service share the strengths and weaknesses of e-mail reference mentioned above.

5.3 Online Pathfinders

Pathfinders are guides designed to help users find information on a particular topic. With more and more information available in electronic format and on the web, online pathfinders are becoming increasingly popular. e.g. Library of congress (www.loc.gov) web site and Internet Public Libran (ipl.org).

Some of the well known examples of online pathfinders are:

(a) Library U
   http://www.libraryu.org

It provides free web based training for Illionis librarians, supported cooperatively by two Illionis state library.

(b) Netlibrary
   http://www.netlibary.com/Gateway.aspx

NetLibrary is one of the world's leading provider of e-books. It offers the only comprehensive approach to ebooks that integrates with the time honored missions and methods of libraries and librarians. Vision is one of enhancing role of librarians as stewards of knowledge, supporting their crucial role in serving millions of people everyday who seek information.

(c) Internet Public Library Pathfinders

This extensive collection guides users through projects from author biography to western philosophy.
http://www.ipl.org/div/pt/

(d) Pathfindersonline.org
   http://www.pathfindersonline.org

The official website for pathfinders of the North America Division is:

5.3.1 Advantages

Like e-mail and Ask A Reference services, online pathfinder are available to users whenever and wherever they can access the internet. However, online pathfinder do not have to wait for hours and weeks for a librarian's reply, or to wait in an electronic queue for the available librarian. This convenient, self-help nature of online pathfinders is definitely an important advantage.

The possibility of including web links to electronic resources is another advantage for online pathfinders. Through these web links, users may access not only textual materials, but also multimedia resources such as digitized images of historical documents and sound files.

A third advantage of online pathfinders is guided searching. Popular search engines available on the web often provides so many web pages that a user has to go through a lot of irrelevant Web sites before finding what is needed. Guided searching can help eliminating the problems of false starts and dead ends.

5.3.2 Limitations

Though online pathfinders usually provide fruitful starts and useful information, their static nature is one of their weakness. Most online pathfinders are static annotated lists of resources or web links, and do not possess any interactivity with the users. Further many

pathfinders are more complex in structure than printed ones and structural complexity can sometimes cause confusion to the user.

Another important weakness of online pathfinders is lack of individualization. Though online pathfinders are generally customized, they are only customized to a specific target audience such as a group of students working on a particular classroom assigned. Specific information needs of a particular individual are not part of an online pathfinder.

5.4 Chat based Reference

Chat, sometimes referred to as instant messaging, is real-time communication between two or more computer users over the internet. Every keystroke a chat user maker is instantly transmitted and appears on the monitors of all other users in the same chat session. Chat is a very popular means of communication over the internet. However, as it now stands, chat communication is only text-based. Since it is text-based, chat does not seem to be much more advantageous than POTS (Plain Old Telephone Service). Perhaps the main advantage of using chat reference is that it allows the user to continue staying online while getting reference assistance.

As a reference medium, chat is far from perfect because it was originally designed for one-on-one personal 'conversations' and it is simply not geared towards answering a high volume of reference questions. Another limitation is the difficulty to multitask during a chat reference session. For example, a librarian cannot look for information while chatting online with the patron because she\he has to type in every word and letter. This makes chat reference not only much slower than other means of traditional reference but also requires additional reference librarian staff during busy hours. The slowness problem can be further compounded by other factors such as a low speed modem.

5.5 Real-Time Live Web Reference

Real-time reference live on the web is the latest trend in virtual reference. Already some libraries are providing live web reference services to their users. Some of the well known examples are:

(a) 24/7 Reference
   http://www.247ref.org

It is a set of software tools that enables librarians to provide real time reference assistance to their patrons over the internet. Each library can customize these tools to best serve its community.

It can be used to:

- Communicate with patrons using real time chat;

- Guide the patron's browser to the best resources on the internet with collaborative browsing;

- Send files, images, powerpoint presentations, etc. to the patron's computer;

- Use customized, pre-scripted chat messages and web pages to improve efficiency;

- Organise scripts by subject, lanaguage category or by whatever method meets users needs; and

- Customize the software to integrate with participant library's web site.

(b) LiveRef
   http://www.public.iastate.edu/~CYBER STACKS/LiveRef.htm

Live Ref is a registry of real time reference services, which is created by Gerry McKiernan. It is a categorised listing of libraries that offer real time library reference or information services using chat software, live interactive communications utilities, call center management software, customer interaction management, web contact center software, bulletin board services, interactive customer assistance system or related internet technologies.

(c) Know–It-Now Services
   www.cpl.org

CLEVNET library consortiums's Know–It-Now Services is an association of 31 public libraries in the Los Angles area. Know-It-Now Services are available to users on the web

round the clock, except on certain holidays. Basically the service is extension of text-based chat reference. However, it has more features and capabilities than pure chart reference.

(d) Collaborative Digital Reference Service (CDRS)
http://www.libraryspot.com/spotlight/cdrs.htm

This is a project of the Library of Congress and its partner libraries to fulfil the goal of providing professional reference service to researcher at any time any where. The vision behind Collaborative Digital Reference Service (CDRS) is to route efficiently the reference query to the librarian most readily able to answer it.

One of the limitation of round-the-clock live web reference ironically, arise from one of its strengths-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.

6. CONCLUSION

All of the digital reference forms discussed above have different technological natures, and hence they differ in their capabilities and in how they are actually used. Since e-mail is the most prevalent and primary communication medium for Ask-A Services. E-mail and Ask-A Reference Services may be grouped together technology wise.

Similarly, chat and real time live web services can be categorized together because of their underlying internet chat technology, even though they have different capabilities and characteristics. Online pathfinders, however stand on their own as they rely neither on e-mail nor on chat technology. The important difference between online path finders and the other four forms of digital reference is that an online pathfinder is not human mediated while all the others are.

Despite their differences, the five digital reference forms have two commonalties.

First, they all share the same goal of reaching out to users all the time beyond the four boundary walls of the library through cyberspace. The second commonality is the use of the computer as a powerful tool to provide reference service over the internet, which indisputably is an important and efficient information delivery medium.

There is no doubt that present and future developments of digital reference in different forms is crucial in order to cater the different types of information seeking behavior requirements of the users, but at the same time it is equally important and productive to develop our own innovative products based on sound theoretical principles which can handle the user needs more efficiently and effectively.

Though the information professionals are required to cope up with the new technological changes, but at the same time one should not fear that the new emerging technology based services will replace the traditional services completely rather these are emerging as supplementary services to improve the information dissemination amongst the user community.

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