RESEARCH ARTICLE

DIGITAL REFERENCE SERVICES: AN ANALYSIS OF LIBRARIANS' PERSPECTIVE.

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Manuscript Info	*Abstract*

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Digital reference service is an emerging trend of traditional reference Service. Easily accessible digital reference service has become one of the hallmarks ofthe library and information services. The paper highlights how new visage oftraditional reference service is developing as a natural solution to keep pace withcomprehensive technological environment. The basic concepts,elements of digital reference service and give in detail modes, the advantages,limitations, and some details regarding various digital reference services leads to several libraries.

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Introduction:
The primary aim of the library is to offer a variety of services to its clientele to meettheir specific information requirements. Several techniques such as classification,cataloguing, shelving lists, opacs, open access to its readers and similar other types ofservices are all indirect form of assistance to users to find their document in thelibrary. The basic objectives of every library and information centre is to savethe time of the user as well as to provide specific information as quickly as possible.The method used for the same involve personal efforts to bring together user and hisdocument.Hence this method of providing personal attention to readers in terms ofmeeting their specific needs is given the term 'Reference Service'.According to Dr. S. R. Ranganathan, In the present electronic and communicationenvironment reference service is not only confined to the library service but also toremote users. Sometimes it is termed as e reference service, Digital reference service, Virtual reference service, its main objective is to provide pin-pointed, exhaustive,expeditious service to its information seekers whenever they have a query. With the help of Internet,e-mail, www, bulletin board services have changed the notion of traditional libraryinto digital library and the traditional services are now called information services. Tomeet the quick demand of the user librarians maintains digital collection and alsoaccess e resources and provides information in digital mode. In this way the concept of traditional reference service has transformed into Digital reference service.

Digital reference uses the internet to allow people to connect with a librarian. In the process of providing Digital reference service the reference librarian receives question via e-mail or web interface, identifies the query and then decides appropriate course of action. He analyses the request and gets the type of information required.

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Definition
Digital reference service may be defined as "the provision of reference servicesinvolving collaboration between library user and librarian, in a computer basedmedium. These services can utilize various media, including e-mail, web forms, chat,video, web customer call centre software. "Digital reference service is a service by which libraryreference service is conducted online and reference transaction is a computermediated communication".

Hence we can conclude that Digital reference service is requires computercommunication with digital network, should have alliance between user and thelibrarian.

Elements of Digital Reference Service
According to Linda Berube, a digital reference service incorporates the following
Three basic elements:
1. The User
2. Electronic resources (including electronic or CD –based resources; webresources; local digitized material etc.) as well as print resources
3. The information professional
4. The interface (web form; e- mail; chat; video etc.)

Modes of Digital reference service
Based on the mode receiving and answering the queries, digital reference service canbe broadly categorized into two typesAsynchronous and Synchronous

E-mail reference service
This is a simple, cheapest and cost effective servicein which transaction involves back and forth exchange of information. User sends thequery in the form of a message and receives an answer at a later time. User can ask a Question even when the library is closed. Library give reply by e-mail, fax or phone Ashe finds it convenient.

Asynchronous
This mode involves a time delay between the receiving questionand providing answer such as e-mail reference service

Advantages
1. Useful for the users who are poor in oral communication
2. Psychological barrier that stops shy users asking questions face to face isremoved.
3. It does not require extra software and no extra training
4. Physical boundaries are removed
5. Reference librarian find more time to think, chalk and plan out a strategy andfinally search and give the answer.
6. No restrictions of working time, user can ask query any time.

Disadvantages
1. Speed of receiving and answering questions depends on the volume of e-mailtraffic and communications link over the internet.
2. As face to face interaction is not possible, reference librarian not able to get clarification about his doubts arising in his mind after receiving the query.
3. It is difficult for reference librarian to judge the urgency of information.Following are the some of the e-mail services provided to the users:Askme (http://www.askme.com)
4. It is a free service where users can ask question and enter their e-mail addresses.All ExpertsInforocket(http://www.inforocket.com)
5. It is a fee based reference service.the price per question varies from$5 to $75.the usercan ask questions which will be answered by the experts.
6. Question Point(http://www.question Point.org)
7. This is a cooperative virtual reference service launched by the Library of Congressand OCLC, Dublin. Question Point combines an infrastructure of software andcommunication tools with a global network of cooperating libraries worldwide.
8. Britannica(http://www.britannica.com)

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

Semantic Web representation
There are variety of metadata schemes which guide in cataloguing of digital resources i.e., metadata creation. The description given to the resources should enable a user to identify and select appropriate resources with respect to content, format, etc. Resources have to be represented by simple description, following formal ontologies, which are machine support and have deductive reasoning, by following functional requirements for bibliographic records and cataloguing criteria. Rules for Description and Access (RDA) will be helpful in the development of semantic web catalog. Coherent, accurate, consistent semantic representation is needed to ensure good quality semantics and for effective semantic web library operations. There should be a well defined semantic web representation policy for the library. The catalog should be rich with Ontologies, authority verification and MARC based scheme should be used for effective Semantic Catalogue.

Text based Chat/Instant messaging
This service is a supplement to the emailreference service as the exchange of information between the the user and Reference librarian is live (takes place in real time).To answer the questions online, the same criteria is followed as it is followed at the reference desk. Librarian's whowork with digital reference tend to prefer web based or electronic sources becausethese sources are easier to access and share with the user. Most of the user now days
Want to access online, full text sources. An example is the Live Help service offeredby Gates head public libraries, which uses Swiss software, Click and care. The 1st stepin asking questions in chat reference service is for the user to complete the log-inscreen. After the question has been sent, software modifies all of the librarian's whoare available online and after monitoring the queue, the first available librariananswers the question. Several libraries ask for the identification no. as they offer theservice to their institutional members only.

Reference librarian can use variety of tools such software with the ability to cobrowse,prewritten messages, typical greetings, sign off texts to save time and typinginvolved in reference interview.Reference librarian should develop skill to keep the interview short to prevent thesystem from logging off and users from getting bored while giving basic information.

This could be taken as challenge by the reference librarian since average time of aninterview in digital setting is ten minutes.

This service is gaining more importance due to several **features** such asSpeed of this service is faster than e-mail service, so user does not have towait for the responseUser query is solved in real-time i. e. interaction between the user and thereference librarian is live.

Reference librarian can attend multiple users simultaneouslyVoice over Internet Protocol (VoIP) can be used by reference librarian to talkto users and hear them while connected and while locating the resources.Clarification can be sought onlineThis service can be offered any time(24/7 basis).

These products allow librarians to communicate with the patrons in real time.

Drawbacks
1. User needs to type the complete question and reference librarian need toanswer in typed format (depends on the speed and efficiency of both in typing
2. Typing speed and errors occurring during typing text may cause difficulty incommunicating proper massage between user and the reference librarian.
3. May be stressful for the user to wait for the answer every time.
4. In developing countries technology is at premature stage, therefore need ofthis service is yet to be recognized.
5. Reference librarian while busy answering several questions at a time, may notattend urgently needed questions.

Digital Reference Robots
1. An artificial intelligence is used to response thequestions when the reference librarian is not available, is known as Digital Robots.

2. The most well-known of this type of service is Ask Jeeves. The operation of thisservice involves use of software to search the database of questions and answers.

Some of the well known examples of real time references are
Video Conferencing or web cam services
Video Conferencing is introducedas a remedy to the communication problems inherent in text based services. Thisdigital form includes visual elements where user and librarian both can use text andspeech transactions and they can and hear each other jus similar to face to faceinterview. This service is useful in distance learning, research and referenceapplications, can be found in off-campus library services of University libraries.

Joint Collaborative Digital Reference Service
This is a free reference service project of Library of Congress and more than 100partner libraries form various countries.
The mission of this collaborative venture is to provide professional reference serviceto the users at any time and anywhere through an international digital network oflibraries and information centers. It is a world wide network of libraries in whichOCLC builds and maintains a database which include three main components - first,Member Profiles(contain information on strength and features of members); second,Request Manager (software for entering, routing and answering reference questions;third, Knowledge Base(a searchable database for questions and answers for futureuse.

It supports reference efforts by combining the power of resources and manpower withdiversity and availability of libraries and librarians anywhere.

Virtual Reference Desk
(http://www.vrd.org)This project is sponsored by US Department of Education. The VRD does not actuallyanswer questions, but provides resources and links to experts that offer these services.It allows co-browsing, webpage sending, text message, slide shows, chat transferring.It organizes conferences on on digital reference issues for information professionals inlibraries and other contexts.

Beside the above there are other projects like AskERIC, the Internet Public Library,the MAD Scientist Network are also in operation.

24/7 Reference
A pilot network established in California, Los Angeles and Orange County areas toprovide real time reference services directly to the library patrons over the internet.
It can be used to:
1. Network with others by transferring complex to a local or remote expert
2. Communicate with users real time chat.
3. Send files, images, power point presentations to patron's computer
4. Customize the software to integrate with participant library's website

Evaluation of Digital reference services
To evaluate means to assess the quality means to judge the standard of the service thatshould be provided to the users. Library and Information Centers being non-profitorganizations evaluate their services to know its significance for the user as well as tomeasure the user satisfaction. Lankes has laid down thefollowing measures/components for assessing the quality of digital reference servicesrendered by the library or information centers or organization.
1. Outcome Measures – to judge the quality of answers.
2. Process Measures – to measure the effectiveness and efficiency of the process.
3. Economic Measures – to ensure the costing and cost-effectiveness.
4. User Satisfaction – to identify the degree of satisfaction of the users.

Future of Digital Reference Services
With the advent of internet, a number of non-library and commercial library andinformation centers are have started providing digital reference services, while someare free and others need payment. A good number of reference sources i.e.encyclopedias, dictionaries, thesauri, handbooks, directories and major abstractingservices like Chemical Abstracts, Biological Abstracts etc. are available on theinternet. Thus, in the future users will be more dependent on

the online sources andservices. They will tap the required information at home by means of computer. Atthe same time the cost involved will be affordable for the users and will continue toget the information at the less cost from the library. There will be a great demand foraccurate and specific information. So, expert reference librarians will be needed in thefuture.

Conclusion:-

Digital reference services form a backbone of the information services in the libraries. They have transformed the entire skeleton of the reference services. The digital reference service has proved to be an efficient information service in the present digital era serving the users to their expectations.

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