

Virtual Reference Services: Connecting Users with Experts and Supporting the Development of Skills

by TRIX BAKKER

Virtual reference - a service that allows librarians and patrons to communicate with each other in real time through the Internet by e-mail, chat or instant messaging - is currently a hot topic in libraries. In a way the commercial sector has challenged the reference function by offering Question & Answer services. To librarians this represents a threat and an opportunity. They can benefit from technologies and service models developed for the commercial arena by adapting these to virtual reference applications that will more effectively meet the needs of libraries on the Web. The literature provides many examples of pilots and experiments in taking reference into cyberspace. After an introduction to the in-and-outs of virtual reference, follows a short exposition of a virtual tour in the Netherlands where 7 of the 13 university libraries and the Royal Library have a basic 'virtual helpdesk'. One thing is clear: virtual reference services are definitely put high on the agenda of the Dutch libraries. The Royal Library is one of the Dutch libraries, which is going to participate with *QuestionPoint*, formerly called Collaborative Digital Reference Service (CDRS), jointly developed by the Library of Congress and OCLC, which will provide web-based reference service to researchers anytime, anywhere, through an international, online network of member libraries.

WHY VIRTUAL REFERENCE SERVICES?

The number of questions coming in to library reference desks is declining and more and more of our patrons are turning to the Web to look for their answers. But it's not just do-it-yourself searching. Several sites based on advertising support offer experts to answer questions. These commercial reference services like *AskJeeves* and *WebHelp* have sprung up on the Web and are growing at fast rates and are providing library-type interactive remote reference service. They allow users to ask questions and receive answers for free

from public information located mainly on the World Wide Web. These services are very popular and can be compared to convenience stores. This illustrates that there is plenty of demand for online reference assistance. The quality of the items retrieved, however, is dubious and cannot compete with the quality and diversity of resources that can be provided by reference librarians. For a good number of users, especially for basic questions, the Web – whether unmediated or via expert help – will be ‘good enough’. The library niche may be that of a quality alternative since libraries provide also print resources and proprietary databases. The information literacy and research skills taught at the reference desk can be translated into the online environment, allowing students to get library instruction and reference services from their residences, labs, or elsewhere. The problem is that up until now, there has been no easy way for librarians to provide their patrons with live, online reference services on the Web.

Libraries can benefit from the technologies and service models developed for the commercial arena. The evolution of e-commerce stimulated the development of systems that provide live interactive customer service on the Web. Despite their limitations, the best of the commercial Web-based customer service applications – such as *eGain*, *Cisco's Customer Contact Solutions*, *LivePerson*, *WebHelp* and *Humanclick* – offer a whole suite of interactive technologies that have proved to be useful for live, online reference. There are several options available for libraries that are interested in launching a virtual reference service. This service can reach a wide audience on a wide range of topics, because the Internet has broadened the scale and eroded the physical boundaries. So libraries have to decide whether to serve only their own patrons or a broader community. The Web allows offering remote support with sophistication and immediacy, and even doing it with a personal touch. It's becoming increasingly important to expand the services available to those who don't physically visit the library. Many users can, and do, conduct much of their research from outside the building and the university begins to offer more courses and opportunities for distance learners. This has generated the need for distance librarianship. As the content libraries offer becomes more Web-based and more actively used by patrons outside the libraries, libraries also need to provide support to the remote users. This means that libraries – as service oriented organisations – need to offer access to reference service in a way that's as *obvious* and as *convenient* for the remote user as is access to the information itself. Such a service needs to be built into the infrastructure of the internet. To quote Ann Lipow, director of Library Solutions Institute and Press (Berkeley, USA), guru of the virtual reference service: „rather than thinking of our users as remote, we should instead recognise that it is we who are remote from our users” (Lipow, 1999). That there is a need for virtual

reference services proves the 'Quickvote' held at CNN.com (November 2001) with the question: „Will you use a library-sponsored reference Web site or stick with your usual sources?“ The answer was for 90% (!) positive. Libraries should reach out to their patrons in their offices, schools and homes and help them find the information they need wherever they are, and whenever they need it in a convenient way. Convenience seems to be paramount to quality; it is the key ingredient in the success of Aska services. The information seeker wants immediate service and goes to the most likely source that is convenient.

TOOLS THAT CAN HELP TO GO THE DISTANCE

Virtual reference services can currently be broken down into two main types: e-mail and chat:

E-mail

The user sends the library an e-mail with a reference query, supplying whatever information he or she feels is necessary. The library may reply by e-mail, phone, fax, letter, etc. There are two basic varieties in e-mail reference services:

Basic e-mail

The service is assigned a simple e-mail address provided on the library Web site. If a user wants to submit a question, he/she can just click on the link, which in turn launches the user's e-mail software (such as Microsoft Outlook, Eudora, etc.). The user then fills out the e-mail and sends it to the library via the user's e-mail software.

E-mail reference services suffer from a number of drawbacks:

- e-mail does not offer the instantaneous response and immediate gratification that patrons have come to expect from the Web;
- it's difficult to conduct any kind of an effective reference interview using e-mail: if a question needs clarification, it may take three or four exchanges over several days just to figure out what the patron really wants;
- e-mail reference places most of the burden of answering the question on the librarian: at the reference desk the reference librarian works with the patron to help him find the answer instead of doing all the work for him.

Web forms

Most reference librarians know how hard it can sometimes be to discover just what the user at the desk really wants. The literature about the reference interaction is full of examples of miscommunication and misunderstandings (on the part of both librarian and user). In an online reference setting, the librarian can structure the user's request for help somewhat by having the user fill out a form asking the kind of clarifying questions librarians use during reference interviews. With a click of a button the user can send the form to the library.

Chat reference using simple technologies

Since the year 2000 there's been an explosion of interest in the library world of adapting chat technology, which allows the user and librarian to send short written messages back and forth instantly. Such software allows librarians to create a setting where the interaction with the user is live (real-time), but limited to written exchanges of information. The user and librarian may exchange a series of short messages to get to the heart of the user's request. Some chat programmes offer an open virtual reference room where one or more users can enter at a time and exchange messages with the librarian. There are three ways of running this kind of a service: with free, instant messaging software (such as *CompuServe Instant Messenger*), with a virtual reference room solution (such as at *Webmaster*), or with chat software purchased by the library (such as at *Anexa.com*).

Advantages of using chat for online reference:

- it feels somewhat like a live reference interaction; you can talk to the patron directly;
- you can conduct a reference interview on the spot by exchanging a series of short messages to get the a better idea of what's asked for;
- it eliminates problems of mishearing what is said;
- it is helpful for those with hearing or speaking impairments;
- the user can save text of chat session to refer to later.

Disadvantages:

- it's only chat, so you can „talk” back and forth with the patron and tell her to go to a specific address on the Web to find information, but you can't actually take her there, or walk her through a database search;
- much more time-consuming than regular voice communication because you have to type everything out – with spelling and typing errors that can creep in;
- most basic chat software packages do not allow to queue and route questions easily, nor do they offer scripted messages to handle routine functions and requests;
- the user may not have the same level of patience with the librarian's efforts to help - users expect everything to be instant, convenient, and efficient;
- if the user logs off prematurely, it may not be immediately apparent to the librarian, especially if the librarian is busy looking something up in a book or on a computer for the user.

Chat reference using Web-based contact center software

More recently, libraries have begun experimenting with Web-based contact center software. The software was designed expressly for answering questions and providing live, interactive customer service on very high-traffic e-commerce sites. Some of the better-known applications include *LSSI's Virtual Reference Toolkit*, *Cisco's Customer Contact Solutions*, and *LivePerson*. There are 50 or more vendors developing software with varying degrees of sophistication in this area at present. The software is based on the call center model: it queues and routes Web calls to the next available agent (or librarian). The best of these programs feature a wide variety of interactive tools that allow agents to push Web pages to customers, escort customers through catalogues or databases, collaboratively fill out forms or search screens, and share slide shows and other online content. Because the software is designed expressly for answering questions as efficiently as possible, most include built-in knowledge bases that allow you to capture answers and reuse them, customer profiling, system reporting and analysis tools that allow you to track exactly who is using the system and how. As the librarian pushes pages onto the user's browser, the chat window can also appear on both user and li-

brarian's screen, allowing them to have a typed conversation about the web pages being sent to the user.

Although Web contact center software has a good deal of promise as a platform for online reference services, it is far from perfect. There is still a great deal of developmental work that libraries have to do to adapt it to their needs. To begin with, most of these programs currently use chat to communicate with the patron. Chat, however, is a rudimentary and cumbersome way to convey *anything*. The most effective use of the virtual reference desk is to co-browse with patrons while talking on the phone. For those people who do not yet have access to a second phone line, the answer seems to be Voice over Internet Protocol (VoIP). VoIP is a developing Internet protocol that allows the librarian and the patron to hold a conversation over the same Internet connection. In a VoIP session, a librarian and a patron will co-browse the Web and talk with each other, either by using headsets plugged directly into their computers, or by using the built-in microphone and speakers. This technology is available now, but it is still quite scratchy and most people do not have the voice receiver necessary to use it. As VoIP technology improves and becomes standard, chatting may become obsolete.

LIBRARY SYSTEMS & SERVICES

Specifically developed for libraries is the *Virtual Reference Toolkit*, a commercial software product of LSSI (*Library Systems & Services*, L.L.C). The *Virtual Reference Toolkit* is a suite of products and services specifically designed to make online library reference services easy, quick and cost-effective. LSSI has taken the same web collaboration software (*eGain*) as used by *WebHelp* and other major e-commerce sites and adapted it for use by libraries.

In addition to a fully supported chat module, this product offers:

- 24/7 technical support
- on-site training for librarians
- private, secure communications between users and librarians
- complete session transcripts, including URLs, emailed to both the user and the librarian at the end of each session. A copy of the transcript is also stored in the system database for future reference and analysis

- queuing features which let users and librarians know how many people are waiting to be helped
- push technologies allowing librarians to send Web pages directly to the users desktops
- co-browsing capabilities allowing users and librarians to follow each other's progress through a database, catalogue or Web site, and enabling the librarians to more easily teach online
- meeting room features allowing one librarian to conduct a group instruction
- customisation of the software
- weekly statistical reports
- ability to transfer questions to and from all of the libraries using the network, live and in real-time, which opens up the potential for all sorts of new shared and collaborative reference arrangements among libraries.

The *Virtual Reference Toolkit* software is a hosted reference network that operates through the library's Web browser. There is no software to install or set up, and the whole process to go live can be accomplished in about 15 minutes. The library leases one or more full seats on the network to use 24 hours per day, seven days per week. LSSI charges \$9,000 for an installation plus \$6,000 per seat. A seat is a workspace on the network where reference staff has the tools to connect with the patron and conduct live online reference sessions. Another potential application for the software is in distance education. Librarians can use it to provide remote reference assistance to students anywhere in the world, but teachers and instructors also can use it as a platform for live, one-on-one instruction and assistance to remote students. The software even has a 'class' or 'meeting' mode where a single librarian or instructor may work with up to twenty students simultaneously. It's also possible to share your seat or seats with other libraries. For example, three libraries might want to work together to offer a 24 hour online reference service. Perhaps the best feature of the Virtual Reference Desk Software is the connection with all the other libraries using it. Any library using the Virtual Reference Desk has the ability to transfer a session or conference from/to a librarian in any other library on the network, regardless of where they are in the world (Coffman, 2001a). To support further collaborative reference initiatives LSSI is developing a reference referral network in conjunction with *QuestionPoint*, a new reference service based on the Collaborative Digital Reference Service (CDRS), a pilot project begun in early 2000 by the Library

of Congress and 16 partner libraries. CDRS can be seen as an effective response to the question „How do we take the reference desk to cyberspace?” (Kresh, 2001).

NETWORKED REFERENCE SERVICES

One of the greatest potentials of the new virtual reference software is that it can serve as an effective platform for the development of shared and networked reference services. Up until now, each library is basically handling its own questions as best it can. As soon as you get a question that can't be answered effectively with your own resources, it would be nice if the question can be simply and easily transferred to somebody with the resources and expertise to answer it. The virtual reference software allows the transfer of calls or conferences with librarians from any library using the system and it can be done live, in real-time while the patron is still online.

There are dozens of questions to resolve if libraries A and B decide to develop a collaborative service, such as:

- Will the service be e-mail only or will it also be chat?
- How does one make sure patrons from library A are given quality service when their questions are answered by staff from library B?
- How does one make sure that library A and library B both feel like they are working equally in providing assistance to the combined user population?
- How does one get staff from library A and B together for training and professional development?
- Who at library A and library B will staff the service? Will there be a special location set up in both libraries where the staff will do their work? Will a select team from both libraries work from a third location? Will one library cover the entire service or the bulk of it?
- How will costs be shared?

Just recently (June 23, 2002) the Library of Congress's Public Service Collections Directorate and the OCLC Online Computer Library Center of Dublin, Ohio, launched *QuestionPoint*. This service will provide libraries with access to a growing collaborative network of reference librarians in the United States and around the world. About 100 academic, public, private, and

national libraries have signed up to participate. Each participating library has signed a Service Level Agreement with *QuestionPoint*, based on the scope of its service and collection profile (RLG Conspectus Collection Code Indicators 3, 4 and 5). Library patrons can submit questions at any time of the day or night through their library's Web site. When a question is submitted, it's classified according to a specific subject area. The question is then entered into the system, where it's routed to the participating library that's been identified as being able to provide expertise in that subject area and able to answer the question in the shortest time frame. Questions can be submitted by Web-based forms, e-mail interaction, and live chat service. A major new feature is an extensive online knowledge base of asked and answered reference questions with maintained sourcing. The service - available to libraries by subscription for a maximum of about \$2,000 for individual institutions, and much less for members of participating consortia - will enable reference librarians to share their resources and expertise with each other and with their patrons free of charge. *QuestionPoint* can also be used in conjunction with alternative service providers and the resources that local libraries use. *QuestionPoint's* developers will consider and add new features such as voice and video, automated checking of URLs and the discarding of dead ones in the knowledge base, and, for the sake of copyright and licensing restrictions linking to „appropriate copies” held by a library for its patrons and referral to commercial sources for users who do not have library digital holdings (Quint, 2002).

OVERALL DESIGN AND STAFFING CONSIDERATIONS

Virtual reference does not necessarily mean 24 hours a day, 7 days a week (24/7 service) availability. It means real-time, synchronous service for users, available remotely and/or within the library. The library sets the hours and service levels it is willing and able to support. By drafting an overall design of the virtual reference service your library wants to develop, there are many issues to keep in mind, such as:

- What is the overall purpose of the system? Is it primarily to provide instruction, and if so, is the instruction primarily one-on-one or in larger groups, or both?
- Do you intend to use it to try to answer all sorts of reference questions as with *WebHelp*, or will you focus on a more specific function such as providing Internet search assistance or providing reference in particular subject areas?

- Who are your users and how sophisticated are they at using the technology they have?
- How many of them are likely to have a second phone line available?
- What kind of questions are they asking now?
- How long does it take to answer the typical requests, and how many could be handled with an effective self-help system?
- What's the role of your print collection, and how will you incorporate that into your reference service?
- What are the primary resources you intend to use: the Web alone, or the Web and subscription databases?
- How will publishers and database aggregators react if the material sold or licensed to one library ends up serving the patrons of many libraries?
- How will you deploy the service? Will it be available to any user with a computer any time of the day or night, or will you limit to select locations and hours?
- How many staff you are going to need to run the service?
- What level of staff will you need?
 - catalog help: staff primarily with para-professionals supervised by librarians
 - general reference: a combination of professional and para-professional staff
 - in highly technical areas or where bibliographic instruction is your primary focus: a full professional staff
- How do you plan to launch and market your online service?

POLICY AND PROCEDURES FOR VIRTUAL REFERENCE

Upon every virtual reference desk should rest documents describing the expectations of both the user and the librarian. A reference policy should include detailed information regarding how questions will be dealt with, who will answer them, what questions cannot be answered (beyond the scope of the resources which the librarian has access to, or not the expertise), and why the information is worth the wait. Librarians should tell users what information they need in order to answer a question and also why they need users to provide identification information, such as level of expertise and final

purpose for the research, as well as what the user can realistically expect in return for sharing this personal information. Users must be made aware of when the information they request can be expected. Librarians should also explain why some information can be made available via electronic delivery, while other information must be accessed through Interlibrary Loan.

VIRTUAL REFERENCE SERVICES IN THE NETHERLANDS

The invitation, last autumn, for this lecture about virtual reference services I accepted in a rather optimistic mood. I recently talked to librarians of academic libraries in the Netherlands and realised that most of it is in a planning phase, or even still in discussion during seminars and conferences. In the daily workflow it is not yet really part of the job. I also inventoried the home pages of the *UKB* libraries. *UKB* is the Dutch Association of the thirteen University Libraries, the Royal Library and the Library of the Royal Dutch Academy of Science. The result until now is: seven of the thirteen university libraries and the Royal Library have a basic virtual helpdesk; the other libraries have some FAQ's and/or simple forms and/or basic e-mail. The Royal Library will collaborate with other university libraries, and the Netherlands Association of Public Libraries, and will be „front office” for the Netherlands in *Question-Point*.

CONCLUDING REMARKS

Digital and traditional reference services are not completely different. In each setting librarians are needed to assist users in the definition of queries and to translate them in searchable terms. Regardless of whether a user is interacting with an unseen human miles away or standing before the reference desk, the sense of presence with another being is an important part of the reference experience. Creating a personalised environment should be a priority. The reference department can be given a ‚face’ on the site by including a group photo, description of skills, or other personalised features. By showing the librarian's knowledge and reference service abilities on the Web, it is possible to engender trust and make connections.

Virtual reference services differ from each other in many aspects including policy and procedure, subject matter expertise, and available resources. For this reason it is important that quality criteria accommodate the wide range of possibilities of various services and their readiness to meet certain expecta-

tions (Facets, 2000). Quality virtual reference services offer more to users than straight, factual answers; they guide them in subject knowledge as well as information literacy. That's why training of information specialists is one of the most important aspects of planning and operating a virtual reference service. Besides offering direct response to user questions, virtual reference services should offer access to supporting resources and information. Services can reuse results from question-answer exchanges in resources such as archives and FAQ's. To quote Steve Coffman, Product Development Manager, Virtual Reference Services, at Library Systems and Services, LLC (LSSI): „Ultimately the objective is to anticipate our patron's questions and to design our library Web sites and electronic collections so that most patrons can easily find the information they need without having to ask.” (Coffman, 2001b). Reference librarians will always receive plenty of awkward questions that require their knowledge to answer no matter how brilliant the Web design, but better homepages can help answer the most common questions that are heard every day at the desk.

To have a really effective virtual reference service requires, besides training, a lot of publicity. The services should inform potential users of the value that can be gained from use of the service. So, you have to make sure that links to your online reference service are on all pages of your Web site. You even could try to get a virtual reference link or icon of your service on the *Google* site and on all pages of these commercial databases your library subscribes to. If the patron doesn't find what he is looking for than he can click on the icon to access a librarian anytime he needs help.

REFERENCES

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- 2 Diane Nestor Kresh: „Libraries Meet the World Wide Web: The Collaborative Digital Reference Service”. *ARL Bimonthly Report* 219, December 2001. <<http://www.arl.org/newsltr/219/cdrs.html>>.
- 3 Barbara Quint: „QuestionPoint Marks New Era in Virtual Reference”. *Information Today*, June 10, 2002. <<http://www.infotoday.com/newsbreaks/nb020610-1.htm>>.

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- 6 Steve Coffman: „We'll Take it from Here: Developments We'd Like to See in Virtual Reference Software“. *Information Technology and Libraries*, 20 (2001b) 3. <http://www.lita.org/ital/2003_coffman.html>.

WEB SITES REFERRED TO IN THE TEXT:

AskJeeves: <<http://www.askjeeves.com/>>.

WebHelp: <<http://www.webhelp.com/home/>>.

EGain: <<http://www.egain.com/>>.

Cisco's Customer Contact Solutions: <http://www.cisco.com/warp/public/180/prod_plat/cust_cont/>.

LivePerson: <<http://www.liveperson.com/>>.

HumanClick: <<http://www.humanclick.com/>>.

CompuServe Instant Messenger: <<http://csim.compuserve.nl/csim/index.html>>.

WebMaster: <<http://www.webmaster.com/main.htm>>.

Anexa.com: <<http://www.anexa.com/>>.

LSSI's Virtual Reference Toolkit: <<http://vrhome.virtualreference.net/>>.

Library Systems & Services (LSSI): <<http://www.pwl.com/lssi/>>.

QuestionPoint: <<http://www.questionpoint.org/>>.

UKB: <<http://www.ukb.nl/>>.

Google: <<http://www.google.com>>

WEB SITES FOCUSING ON VIRTUAL REFERENCE:

Digital Reference Services: A Bibliography

This bibliography created by Bernie Sloan at the Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign, provides more than 400 links to items freely available on the Web. <<http://www.lis.uiuc.edu/~b-sloan/digiref.html>>.

ELITE Project

The library of the University of Leicester (UK) has assembled this overview of digital reference services and offers links to libraries already offering such services. <<http://www.le.ac.uk/li/distance/eliteproject/index.htm>>.

LiveRef: A Registry of Real-Time Digital Reference Services

Created by Gerry McKiernan, a librarian at Iowa State University, this site offers links to libraries providing live online reference service. <<http://www.public.iastate.edu/~CYBERSTACKS/LiveRef.htm>>.

LiveReference

This site offers an active and lively e-mail list to join as well as links to digital reference projects. <<http://groups.yahoo.com/group/livereference/>>.

Virtual Reference Desk

As sponsor of the annual Virtual Reference Desk conference and of the popular Dig_Ref listserv, the Virtual Reference Desk works to advance „AskA” services on the internet and digital reference in general. <<http://www.vrd.org/>>.

Web-Based Reference Services

This site offers a annotated bibliography of articles on the topic of digital reference. <<http://www.multcolib.org/products/digref/resources.html>>.