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## Digital Reference

### **Keywords:**

Digital Reference, Virtual Reference, Chat Reference, e-mail reference, AskA Services, Digital Libraries, reference, reference service, public service, Internet

### **Introduction:**

Digital reference refers to a network of expertise, intermediation and resources put at the disposal of a person seeking answers in an online environment. Also known as virtual reference (and sometimes chat reference, or real-time reference), it takes many forms including e-mail, web forms, chat and instant messaging. Advanced digital reference software can incorporate video conferencing, shared web browsing and even allowing a remote librarian to take control of a patron's computer. Yet all of these technologies serve the same fundamental purpose: to provide human intermediation to a patron online.

### **Body of Text:**

There are many terms used to describe the study and practice of digital reference (e.g., virtual reference, real-time reference, chat reference, real-time chat reference, live reference) all share a central concept: the use of software and the Internet to facilitate human intermediation at a distance. While the practice of digital reference varies from

librarians online chatting instantly with patrons, to a pooled networks of experts using e-mail to route question across the country, to web applications linking libraries of all types internationally, all of these services are seen as having a common set of issues and needs. These issues range from policy (protecting personal information in a digital environment), to technology (interoperating with partners and consortia in answering reference questions online), to staffing (how does one train reference staff to work online).

The past five years has seen the emergence of a digital reference community. While digital reference in some form has existed for decades in the past few years the practice of providing human-intermediation online has exploded to libraries of all types, and these libraries have banded together as a common community to identify and solve problems. They have created mailing lists (1), conferences (2), and large-scale consortia efforts (3). There have also been efforts to create quality standards (4), technical standards (5), and a research agenda (6)

## DIGITAL REFERENCE BACKGROUND

The digital reference field has two progenitors. The first is in traditional library and information science (LIS), particularly LIS practice. The second major contributor to digital reference is the category of Internet services known as AskA services, or expert question/answer sites.

## **Library Reference**

Digital reference as an examination of the librarian's role in a digital environment began with e-mail reference efforts. These efforts extended the traditional core reference function of the library past the reference desk to the desktop. Users were able to ask reference questions and consult with trained librarians through e-mail. Still & Campbell (7) provides an excellent example of early e-mail reference studies. This thread of digital reference concerns issues such as the role of the librarian in cyberspace, the impact of distance service on the traditional reference interview, evaluation (8), and new skills needed by the information professional (9).

## **AskA Services**

The second progenitor to the current digital reference arena is that of AskA services (10). AskA services (so-called because services tend to take on names such as Ask-A-Scientist, Ask-A-Teacher and so on) are expert based question and answer services. They use networked communities of experts to answer questions via the Internet. AskA services have been extremely popular on the Internet, and have given rise to a separate set of issues concerning system development and scalability.

## CURRENT ISSUES IN DIGITAL REFERENCE

As with any rapidly evolving field, the issues, problems and opportunities in digital reference constantly change. However, several issues have emerged as particularly cogent:

- **Selecting the best mode of interacting with the patron:** There are a variety of means of interacting with the patron in digital reference. Many have divided these modes into two classes: real-time in which the patron and librarian interact simultaneously, and asynchronous where patrons ask questions through e-mail or the web and wait for a reply. While there is some debate on how different these two forms are, it is nonetheless reality that in today's digital reference market libraries must choose software often built to support only one of these paradigms. There is a growing amount of research and development into merging these forms of interactions, and identify when a patron needs an immediate consultation with a librarian or when the question can be given more time to chose the appropriate answer.
- **Developing policy for digital reference:** There is little debate that digital reference is simply a particular case of reference service. However, there are challenges present in the digital environment that are not present at the traditional reference desk. The most notable difference is the creation of reference artifacts (e.g., transcripts, e-mails, knowledge bases). In face-to-face and phone reference, little in the way of patron questions or information is captured. In the digital environment, a great deal of personal and identity information is captured with

reference questions. E-mail addresses, backgrounds and the default capturing of identifying information require new policies and methods for ensuring patron privacy, adherence to copyright, and compliance to the use of licensed resources. Further, with the wide spread adoption of transcripts for evaluation new reference policies are needed to outline staff rights of privacy, intellectual property and the use of transcripts in personnel evaluation.

- Staffing the virtual reference desk: Is staffing a virtual reference desk (a digital reference services) equivalent to staffing the traditional reference desk? In some respects the same core librarian skills of the reference interview, knowledge of sources, and an ability to find information are identical. However, managing the software of digital reference, communicating in a primarily text environment, pushing pages and designing interfaces are new skills. Library administrators must wrestle with how to impart these new skills to a staff. Further, they must determine how to deal with staff that are reticent to move to a digital environment. They must determine where to put digital reference librarians (on desk, or answer from their offices). Increasingly, librarians must also coordinate their staffing activities with other libraries in consortia.
- Integrating digital reference into the larger library enterprise: As with most innovations, digital reference began with a small group of pioneering individuals doing the task on their own time. As digital reference moves into the mainstream of library operations, there must be a conscious attempt to link digital reference policies and objectives to those of the library as a whole. Digital reference cost

must be evaluated in terms of the whole library's service population and priorities.

- Software and standards to facilitate digital reference: Digital reference by its very nature is dependant on software. Two perennial issues in digital reference relate to the features of software (what are they, how do you evaluate them in purchasing decisions, or how do you create them in in-house development efforts) and their ability to interoperate. Whether a library chooses to buy or build software, it is an important, and often resource intensive decision. Libraries are increasingly becoming concerned with the long-range impact of these decisions as they seek to work with other libraries. One means of ensuring long-range interoperability is to seek software that conforms to open standards. One issue is what standards apply to digital reference, what standards need to be developed in this arena, and how can these standards be incorporated into software.
- Evaluating the costs and benefits of digital reference: Evaluation is one area where digital reference has actually been in front of the development curve. However, digital reference suffers from the same ambiguities of traditional reference service. So, where there has been little agreement in determining costs of reference, so there is an issue in costing digital reference. The primary advantage in the digital setting is the production of clearer records (transcripts, list of recommended links, e-mails) that can be used for more thorough evaluation and data mining.

While this is not a comprehensive list of issues, they represent ongoing work in the field.

## **DIGITAL REFERENCE PROJECTS**

Digital reference issues, as in the digital library community, are not being considered in the absence of development. There are many digital reference projects underway. Studies by Janes (8) have estimated nearly 44.7% of academic libraries had a digital reference service in 1999. While the numbers were smaller in the public library sector, the numbers were still significant. There are also large-scale projects underway as well.

### **Large-Scale Digital Reference Projects**

Each of the following projects represents different aspects of the digital reference community (though the populations involved tend to overlap).

- The Virtual Reference Desk – A project of the National Library of Education, this service has created a network of over 20 organizations, mostly from the AskA community. This project utilizes human intermediation in both answer formulation and triage of questions. <http://www.vrd.org>
- QuestionPoint -Spearheaded by the Library of Congress, this service is still in testing stages. However, it already involves over 60 libraries of different scales and missions. This service is asynchronous, and relies on the use of site profiles and service level agreements to automate routing of questions through the network. <http://www.questionpoint.org>



- 24/7 – A network based in California, but linking libraries and subject experts across the world to answer questions. <http://www.247ref.org>

These are just the major examples of digital reference systems. Others include AskERIC, the Internet Public Library, and the MAD Scientist Network.

### **Conclusion:**

Digital reference is a growing and evolving field. It constitutes a set of issues and practices that are driving a re-evaluation of reference as a whole. Reference librarians are quickly taking to a new medium of providing services online. A growing market of software options is leading to new issues in policy, training, and standards. Ultimately, digital reference is a growing community of professionals dedicated to not only putting reference librarians online, but re-evaluating and improving reference as a whole.

### **Acknowledgments:**

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