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Trends and Issues in Digital Reference Services

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Introduction

As more people rely on the Internet for information and less people approach the reference desks at their local libraries for assistance (Tenopir, 2001; Coffman and McGlamery, 2000), there is an increased need for formal methods of remote communication between information seekers and information professionals. Many libraries and organizations have responded to this need by providing reference service via the Internet, or digital reference service, to their users. Results of one study conducted in 1999 found that 45% of academic libraries (Janes, Carter, and Memmott, 1999) and 13% of public libraries (Janes, 2001) offered digital reference services through e-mail and the Web. A later study found that 99% of 70 academic libraries offer e-mail reference and 29% offer real-time reference service (Tenopir, 2001).

Aside from reference services based in traditional library environments, hundreds of ask-an-expert (AskA) services on the Internet (some in existence for six years or more) offer information in a variety of subject areas as well as general reference, primarily through Web-based query forms and e-mail. In addition to the many non-profit educational AskA services, a large number of commercial Web sites offer reference service to Internet users (e.g., Abuzz), proving extremely popular and causing concern among those who view use of these services as competition for libraries (Coffman and McGlamery, 2000).

The concept of digital reference is emerging as its own domain within the field of librarianship. Several issues have surfaced recently in practice and research, including provision of real-time reference service, collaborative efforts among networks of libraries and organizations, and development of quality and technical standards. [For general information on digital reference services, including a history and steps for building a service, see Wasik (1999).]

Real-Time Reference

Early digital reference services primarily used e-mail to receive questions and provide responses. While it is still used in most services, e-mail is often criticized for presenting barriers to two important aspects of traditional face-to-face reference service: patrons often do not receive the same immediate response, and librarians cannot as easily conduct the reference interview that is so often necessary to accurately determine and meet users' needs (McGlamery and Coffman, 2000; O'Neill, 1999). Many libraries have tried to recreate the immediacy found in face-to-face reference interactions in a digital environment through the use of synchronous, real-time technologies. Real-time reference tools can range in format from chat technologies and instant messaging software to more comprehensive Web contact center software (some products incorporate more than one format).

Chat technologies, which enable users to communicate on the Internet with others in real time, have been used to provide digital reference service as far back as 1995, when the Internet Public Library experimented with a type of text-based chat environment called a MOO (Multi-user Object Oriented) (Shaw, 1996). More recent efforts include the use of commercially available Web-based products such as ConferenceRoom from WebMaster (Antonelli and Tarlton, 2000) as well as custom-built solutions, as in the case of Temple University Libraries' Interactive Reference Project (Stormont, 2001).

Instant messaging software products such as AOL Instant Messenger and ICQ allow librarians to communicate in real-time with patrons through a series of messages sent back and forth. Instant messaging products enable librarians to indicate their availability on a contact list, share URLs and files with patrons, and record sessions (Yue, 2001). These products are free but must be downloaded on both librarians' and patrons' computers. Instant messaging products include chat features, offering the option to communicate synchronously in a shared environment.

Web contact center software allows live interaction between librarians and patrons, routing mechanisms to transfer queries between institutions, and collaborative browsing (enabling librarians to display specific Web pages on the patron's computer screen) (McGlamery and Coffman, 2000). Some products are designed for use in library settings, including Virtual Reference Software from LSSI (Coffman, 2001) and 24/7 Reference from the Metropolitan Cooperative Library System (Metropolitan Cooperative Library System, 2001), while some commercial products, such as LivePerson, may be adapted for use in library settings (Eichler and Halperin, 2000).

While real-time reference introduces many benefits to librarians and patrons, it also presents several challenges. For instance, librarians must often juggle real-time patron requests with those of walk-in or phone patrons; staff must be trained to use selected real-time tools; and ongoing technical support must be available to maintain the system (Eichler & Halperin, 2000; Stormont, 2001).

Collaborative Services

Many libraries and organizations have recognized the benefits of providing digital reference service through collaborative services. Existing library consortia are adding digital reference to current shared services, and networks of libraries and AskA services in different locations are banding together to share question loads and expertise.

Some regional library consortia are offering member libraries the opportunity to share reference questions with each other using the Internet and other technologies. The Metropolitan Cooperative Library System, based in the Los Angeles area, has established a real-time service for its public and academic libraries using Web contact center software that can be customized for each individual library (McGlamery, 2001). Eight academic libraries in the Alliance Library System in Illinois are currently piloting Ready for Reference, a collaborative 24x7 live reference service (Sloan, 2001).

Other collaborative efforts invite participation from institutions in various locations around and outside the United States that can offer expertise in specific areas. The Virtual Reference Desk (VRD) Network consists of almost twenty AskA services (specializing in science, math, education, art, general reference, and other areas) that submit out-of-scope and overflow questions via e-mail to VRD to be redistributed to other member services or answered by librarian volunteers (Bennett, 2001). The Collaborative Digital Reference Service, operated by the Library of

Congress, is an international network of libraries, consortia, museums, and AskA services, that uses a help desk system to route questions to appropriate institutions based on member profiles (Kresh, 2001; Kresh and Arret, 2000).

Collaborative digital reference services provide many benefits, such as allowing individual institutions to share expertise and resources, expanding hours of service, and providing access to a larger collection of knowledge resulting from digital reference service (e.g., question-answer archives). However, sharing workload and resources with other institutions can also present challenges, such as ensuring the quality and consistency of responses, reaching consensus in developing procedures and policies, and configuring technology that can be best accessed and used by each participating group.

Developing Standards

With the growth of digital reference services and collaborative networks, there is a clear need for defined standards in order to ensure service quality and interoperable technology. A number of efforts have been developed to identify standards in these areas.

The Virtual Reference Desk Project identified a set of quality characteristics for AskA services in 1997, which were later revised as a working set of standards for organizations participating in the VRD Network. The standards, offered at varying levels of membership to accommodate different types of services, are based on eleven quality characteristics (Kasowitz, Bennett, and Lankes, 2000). Development and assessment of measures and quality standards for digital reference services is the focus of a current research study sponsored in part by OCLC (Online Computer Library Center, Inc.) and the Digital Library Federation (McClure and Lankes, 2001).

Standards development for digital reference technology includes specifications for expressing, sharing and storing data captured in digital reference transactions (i.e., question-answer exchanges). Two standards-setting efforts have begun to address these issues. Question Interchange Profile (QuIP) is a threaded data format using metadata to maintain, track, and store digital reference services' questions and answers in a consistent manner. QuIP also allows for the development of a shared knowledge base of services' question and answer sets, and aids in balancing question loads among services (Lankes, 1999; Lankes, 2001). KnowledgeBit (KBIT) is a common, standard data format for the management of reference transactions (Butler, 2001).

More work needs to be done before those providing and supporting digital reference services will formally adopt such standards. However, as more libraries and organizations provide digital reference service and face issues regarding technology, procedure, and partnerships, these and other standards efforts will lead digital reference services into the future.

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