eLibrarian 2.0: Designing the Smarter Information Partner

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Abstract
As reports proliferate on the marginalization of libraries with the Google generation, it is important to keep in mind that there are reference services that are more than thriving despite the perceived odds against them. Bringing to mind that popular bumper sticker of the 1960s that proclaimed "God Is Dead", while another less-reported bumper sticker offered the response "Sorry About Your God, Our God Is Alive And Well".

The eLibrarian service at the UCLA Rosenfeld Library is just one example of a thriving reference service. After years of over 95 percent satisfaction rate among its users, the eLibrarian service was selected one of the University of California's *Best Practices in Instruction & Reference for Digital Resources*[1], and it received a warm reception and a fair amount of buzz at the *Virtual Reference Desk* Conference in 2001[2].

However, the focus of this paper is on how eLibrarian was in danger of being a victim of its own success, and how our scalability plans resulted in not only possibly saving eLibrarian from an untimely demise, but also provided new tools for the reference librarians to work smarter. Moreover, the resulting eLibrarian 2.0 now includes some level of artificial intelligence that can be used as a model for adding a "smart" dimension to online reference assistance—some say, approaching "robo-librarian" in nature.

eLibrarian 1.0—The Initial Service

Some background on the initial version of eLibrarian is provided here to better understand the transition to eLibrarian 2.0 and the enhancements it put in place.

The UCLA Rosenfeld Library's primary users are the 1,400 MBA and doctoral students, along with the faculty, and support staff of the UCLA Anderson School of Management, which is a top-ranked business school in the United States, as well as internationally. This clientele is a highly computer-literate, technology-savvy, and time-pressured group.

The eLibrarian service was designed to bolster an under-utilized email reference service by providing a more responsive MyLibrary, or rather MyLibrarian,

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partnering assistance. eLibrarian delivers research strategies, going beyond ready-reference but short of a research-on-demand service, all within a 24-hour turnaround.

The Rosenfeld Library is an academic library, and as such has a teaching mission. Therefore the goal of eLibrarian is not to provide the answers, but instruction instead. The eLibrarian response is a recommended research strategy, which includes a brief analysis of the information need, the best sources for that information, and along with recommended databases, pre-tested search commands. Using this service formula, the reference librarian becomes the research partner of the requestor in meeting his or her course needs, and our clientele loves it. As one student put it, "eLibrarian rocks!".

It was reference librarians who were initially more skeptical of the merits of providing all this personalized reference assistance, while coming short of providing the answer. But once the realization dawned that we are teaching "how to fish" rather than "handing out fish", most come to understand our service philosophy[3]. As one attendee at the 2001 *Virtual Reference Desk* conference put it, "Not providing answers … What a concept!" and "I always knew that would work, I am glad you proved it for me."

Planning the Next Versions of eLibrarian

The popularity of the eLibrarian service increased despite the lack of any formal wide-range publicity. There are no prominent links to the eLibrarian service from every library web page, as has come to be the norm for chat reference services. The only publicity efforts for eLibrarian, outside of its mention during new student orientation week, are targeted emails to the primary clientele students. These emails are staggered, once a week to a different student population group, to keep the number of requests received per day manageable. For the most part, these staggered emails have kept the level of requests steady, with just a few memorable exceptions. Exit surveys have pointed to word-of-mouth as the primary source of new business.

A series of eLibrarian planning retreats started two years ago to deal with the increasing popularity of the service while staffing levels remained steady-state. With 1,400 students at UCLA Anderson and just four reference librarians responding to eLibrarian requests, it became evident to all that our highly desirable service could soon overwhelm us. In attendance at these retreats were all the reference librarians, a computer programmer assigned to the group, and the director of Anderson Computing & Information Services (ACIS).

The Rosenfeld Library is part of ACIS as a result of a successful convergence of library and computing services in 1996[4], perhaps the singular true example of such a successful merging. The enthusiastic support of eLibrarian by the ACIS Director, Jason Frand, and this ACIS integrated library and computing workforce, which was brought about by Frand and former Rosenfeld Library Director Bob Bellanti, provides a rare incubator or think-tank atmosphere, inspiring innovation and cutting-edge solutions.

At the initial retreat many options were considered, which even included discontinuance and rationing access. However the focus soon narrowed to investigating options that made use of new technological solutions to help librarians work better with the staff time available. A management process was engaged to identify components of the service delivery flow and the technology solutions that were most cost effective to implement.

Working With Better Tools

The resulting move to eLibrarian 2.0 was made in stages, with testing and assessment after each roll-out. It started with streamlining the email-based environment to deal with non-eLibrarian communication, and eventually moved to an entirely web-based environment that removed that bottleneck altogether.

Under eLibrarian 2.0, the productivity of the reference librarians is enhanced in many ways. Primary among these are a more structured inquiry form, an eLibrarian Workspace on the web, and a new web-based eLibrarian Knowledge Base, which is automatically populated with completed inquiries and replies.

The redesign of the new inquiry form made use of data fields in existing databases on the UCLA Anderson network, identified and enabled by our team's programmer, in order to authenticate the requestor name, email address, and current course load. This eliminated the time it took librarians to check for requestor status and possible typos in name, email address, and especially the course that the research was for, as this helped librarians understand the context of the inquiry. The new inquiry form also required the

requestor to select from the four basic types of business information needs[5] (company, industry, management function, or business environment). This new required input and those mentioned above become the key searchable fields in the Knowledge Base.

The web-based Workspace automatically assigns each newly received eLibrarian inquiry to the reference librarian on that work shift, while displaying the status of all inquiries in queue along with their different stages of completion. This spares the reference librarians the confusion over which inquiries are actually being worked on.

The Workspace also has a convenient link to searching the Knowledge Base, making it easier for the reference librarians to search for similar requests for a possible time-saving cut-and-paste of relevant research steps. Reference librarians can search past inquiries and replies by requestor name, by assigned reference librarian, by course number or instructor, or by keyword within the entire text. Requestors will be offered the search function in a future version of eLibrarian 2.0.

An interesting new link on the Workspace allows the reference librarian to check previous requests from the same requestor to find relevant threads, or catch duplicate submissions before precious time is wasted. The Workspace allows reference librarians to attach documents, to provide links to relevant websites, and other functionalities that the reference librarians had been using in the previous email-based environment.

The new eLibrarian Knowledge Base is web-based, and is automatically populated with both inquiries and replies after each transaction is completed. This is a vast improvement over the previous state of affairs. In eLibrarian 1.0, a database of past inquiries and replies were maintained using Microsoft Access. The updating was done manually at great staff-time costs, and even searching this database required the time-consuming extra step of starting up a separate software program. For confidentiality, personal information is automatically stripped from the text before each record is added to the Knowledge Base.

A "Smart" Step to Artificial Intelligence

Perhaps the most exciting aspect of eLibrarian 2.0, in this reference librarian's opinion, is how it uses a "smart" recommendation system, similar to those at Amazon and Land's End. After the requestor selects the course he is doing research for, eLibrarian 2.0 will automatically push on to the requestor's screen inquiries from that same course that are in the eLibrarian Knowledge Base.

This innovative function takes the course number specified by the requestor, then automatically searches and retrieves same course inquiries from the Knowledge Base, and then offers those to the requestor. The requestor may view any or all the records offered and still return to complete an original inquiry form. However, if after viewing one or more of the offered records, the requestor finds his information need satisfied and clicks on a button confirming this and exits the system, then the transaction is counted as "answered by the Knowledge Base".

A 7% Solution

In planning the Knowledge Base, it was hoped that at some time it could shoulder some of the librarian's workload by answering inquiries "without human intervention". In just the first six weeks of eLibrarian 2.0, a preliminary report on the roll-out showed that 7 percent of the inquiries for that period were "answered by the Knowledge Base." The Knowledge Base was not designed to replace the reference librarians, and the Knowledge Base itself depends on the continuing work by the human reference librarians to grow records in its database. However, we welcome this early confirmation of our precept.

Our reference librarians also point to an unmeasured benefit of this new function, i.e., the learning acquired by the requestor from viewing same course information within the inquiries (with responses) offered by the Knowledge Base. This is viewed as an especially important user aid to those who have difficulty expressing their information need, and one that perhaps invites more investigation.

Smart as a Reference Librarian

Recommendation systems are just the tip of the iceberg in providing "smart" dimensions to reference services and products. Reference librarians could easily provide the taxonomy for more perceptive assistance in locating information. Reference librarians are the experts in locating information, and if a reference librarian doubts his or her relevancy in the age of Google, take it from the Google founder himself, reference librarians could really change the world[6].

"Imagine if you had a reference librarian who had all the knowledge of Google but could also answer instantly with all that knowledge. That would really change the world."—Larry Page, co-founder of Google

It is all in the hands of reference librarians, or rather in the way their brains work. Some powerful people and big money in the information industry are looking to reference librarians for the ultimate answer. Google's own technology guru points directly at reference librarians for the ultimate goal of knowledge[7].

"The ultimate goal is to have a computer that has the kind of semantic knowledge that a reference librarian has."—Craig Silverstein, Director of Technology at Google

A literature search on "smart" reference products or services does not yield much relevant results today, but hopefully very soon this will change. The territory is wide open. Every reference librarian can be a key player.

Notes:

1. Regents of the University of California, *UC Best Practices in Instruction & Reference for Digital Resources,* http://www.cdlib.org/inside/groups/ewg/agenda.html, http://personal.anderson.ucla.edu/virtual.library/EmailRef.htm.

2. Eloisa Gomez Borah, *eLibrarian: It's Not Your Father's E-Mail Reference* (paper presented at the annual conference of the Virtual Reference Desk, Orlando, Florida, November 12–13, 2001), http://www.vrd.org/conferences/VRD2001/proceedings/borah.shtml.

3. UCLA Rosenfeld Library, *Rosenfeld Library eLibrarian Service Philosophy,* http://www.anderson.ucla.edu/resources/library/eLibrarian_guidelines_Oct2004.pdf.

4. Bob Bellanti and Jason Frand, "Connectivity and Convergence", *UCLA Librarian*, 48 (1995-96) 24-31. http://www.anderson.ucla.edu/faculty/jason.frand/researcher/articles/librarian96/page1.htm

5. Eloisa Gomez Yeargain, "Conceptual Analysis of Business Information Needs", (paper presented to the Business Reference Services Discussion Group (now BRASS) at the annual conference of the American Library Association, San Francisco, June 30, 1987).

6. "Online Extra: Google's Goal: 'Understand Everything'", *Business Week Online*, May 3, 2004 http://www.businessweek.com/print/magazine/content/04_18/b3881010_mz001.htm?mz.

7. Steven Levy, "All Eyes on Google", *Newsweek*, March 29, 2004, 48. http://www.msnbc.msn.com/id/4660669/.