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Using the World Wide Web at the Reference Desk

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USING THE WORLD WIDE WEB
AT THE REFERENCE DESK

By Ruth Dickstein, Louise Greenfield, and Jeff Rosen

The proliferation of resources on the Web is relentless. It seems we cannot turn a page, a channel, or a corner without encountering a new Web address. Reference sources, like other forms of information on the Web, are burgeoning and with good reason. The Internet is proving to be an especially suitable medium for accessing and using reference materials. From online catalogs to college catalogs, from dictionaries to directories, the Web provides a timely, quick, convenient, and direct way to get answers. With knowledge and practice, librarians can make full use of this electronic collection.

Often librarians hesitate to answer questions using the Web because they are frustrated by its unexpected nature. The helpful site we so confidently directed a patron to yesterday may not be there today. Frustrating as such an experience can be, it is just this flexibility that makes the Web a unique tool for answering reference questions. Our ability to get information on events minutes after they happen draws us back to the Web again and again. We may lose the comfort of consulting a more predictable print copy, but we gain access to the timeliest sports scores or the latest medical information.

A graduate library school student at the University of Arizona had just completed an assignment to design and mount her own Web page. She reflected on the ease of doing this. "If I can put my page up so easily," she said, "I now realize what this means about the information on everyone else's page." We are in an electronic environment where credibility, authority, and subject expertise are not always readily apparent. Along with the valuable, accurate, and responsible material on the Internet, there are sources to be questioned, scrutinized, or ignored. We can no longer depend upon the peer review or editorial process to filter our information. Such limitations, however, should not deter us or our patrons. After all, interpreting patrons' requests, developing search strategies, locating and finding appropriate material, and determining its quality and relevancy are at the very heart of good reference service. There is far too much valuable, unique, important, and just plain handy information

on the Web for us to do otherwise.

The professional literature has begun to reflect that librarians are recognizing the rise of this new medium as a reference tool. In her article "New Technologies and Reference Service," [1] Janice Simmons-Welburn depicts the effects of new technologies on reference librarians and users. She describes the increasingly complex process of choosing from a multitude of systems, as well as the learning curve involved in developing needed expertise. Don Lanier and Walter Wilkins [2] predict that the Internet will have a significant impact on ready reference service. They encourage librarians to become familiar with Internet resources in order to assist users effectively. They emphasize the need for staff training and for evaluation of resources.

Further, Paul Healy, in "Untangling the Web: the World Wide Web as a Reference Tool," [3] describes the Web's potential to transform how we conceptualize and use the Internet. He contrasts the "shifting and disappearing" of Internet resources with the "fixed" nature of print material, and he describes how the lack of peer review and the ease of publishing on the Web contribute to the need to evaluate Web sites. Scott A. Melendorff [4] focuses on using the Internet to address specific user needs such as locating just-released information and consulting the online counterparts of standard reference tools. In the following discussion, we will explore successful techniques for integrating the World Wide Web into day-to-day reference services.

Determine If Your Question Is Best
Answered on the Web

The overwhelming majority of reference resources on the Web have no print counterparts. The richness and variety of Internet sites have turned thousands and thousands of Web pages into potential reference sources. The pages of newspapers and news services, corporations, government agencies, chambers of commerce, museums, corporations, sports teams, and travel agencies all have distinct reference possibilities. Knowing what categories of questions can best be answered on the Web is a helpful first step toward efficient use of the Web for providing

reference services.

As Sara Ryan noted in "Using the Internet for Reference," [5] not all reference questions are good candidates for the Web. To be sure, many questions can be answered using Web resources, but it may be easier to grab a familiar ready reference book than to search for the same information online. Also, the Web is not a likely source for much academic research. Scholarly journal articles, conference proceedings, statistical information, and reports on serious research initiatives are still best found in an academic or research library.

What types of questions are likely to be answered more easily using the Web? We have identified several categories. This is by no means an exhaustive list and will evolve and change as the Web grows and becomes more organized. Reference librarians should experiment and explore on their own and find other categories of information that have extensive Web resources. (The Appendix lists URLs of several sample sites for each category listed below.)

Current Events, Happenings, or Hot Topics: The Web is about the here and now. Upcoming events or topics that have been in the news (like the Oklahoma City bombing trial) are likely to receive many hits when searched on the Web.

Businesses: Statistics and financial data about business and industry are still better found in the reference room, but most large and many small companies now have Web sites, offering very current company information. The Web is a good resource for job seekers.

Government Information: Many government agencies and offices (like the White House, GPO, FBI) now have Web sites offering information about their activities. Indeed, many of these sites provide access to materials such as the Congressional Record, Congressional hearings, U.S. Census information, documents from state and local agencies, or specialized collections that are traditionally only available in depository libraries.

Popular Culture Information: The Web is an excellent source of information on motion pictures, television, bestsellers, and popular music. Many corporate parents of these productions have Web pages. The Web is also a good resource for communications and media studies.

Sports Information: Sports information is very prevalent on the Web. Many professional teams and their leagues have Web sites. Even the less popular sports are well represented. Everything from current scores and horse-race betting to sports halls of fame can be found on the Web.

Medical Condition or Syndrome Information: Persons seeking information on special medical or psychological conditions, disorders, or problems seem to use the Web very effectively to keep in touch with each other and to disseminate information.

Internet Information: What better place than the Web to find statistics about the Internet, lists of Internet access providers, how-to information about the Web, e-mail and other Internet uses, and site registry and domain name information.

Directory-Type Information: Names, addresses, phone numbers, and other directory-type information for associations, educational institutions, and businesses can often be found on the Web.

Travel and Tourism Information: Many airlines (see Air Travel Manager), hotel chains, and travel agents are now on the Web. You can take a virtual holiday to many cities and see pictures of facilities and sample prices.

When and How to Use Search Tools

Once you have chosen to use the Web to answer a reference question, the next choices are where and how to search. There are at least two approaches. One can use a mega-Website that has organized links to Web sites by a subject index, or one can use a search engine for keyword searching.

Organized Subject Indexes: Search services such as Yahoo!, Lycos, and Excite6 organize links for the user. Sites are registered by Yahoo! or Excite and are then grouped according to broad subject categories, such as Business, Entertainment, and Sports. It is best to use the subject-organized sites when the search request is not specific and the request is for a general area of information. For example, if you wanted to find out what basketball teams had Web pages, as opposed to finding the Chicago Bulls home page, these mega-subject indexes would be the best way to begin. This might be analogous to scanning the bookshelves in the reference area by LC classification in order to locate an appropriate source, as opposed to going to a particular title.

Search Engines: When subject-organized home pages prove inadequate and there is a need to find specific information on a topic, it is best to use a search engine such as AltaVista, Excite, Infoseek, or WebCrawler. [7] Search engines are automated programs that search the Web and compile a list of

links to relevant sites based on keywords supplied by the user. Depending on the configuration of the search engine, retrieval will always include Web sites and may include Usenet discussion threads, gopher, and ftp sites. Some search engines will only match search queries with Web page titles, and others will match against all the text on a Web page.

Retrieval and the speed of the search will vary from one search engine to another. While most users have their own preference, it is probably best to be flexible when choosing which search engine to use. If you do not locate the needed Web site on one search engine, try another. This is also true if a search is taking more time than normal. Search time will vary because of the traffic on the Internet, the complexity of the search, and the ability of the search engine protocols to search quickly.

Search Statement Format
or Syntax Is Important

Just as in searching a computerized database on Dialog or on a CD-ROM, the more you use the predefined syntax of the search engine and choose search terms carefully, the more successful the end result. For example, many search engines do not assume adjacency, and phrases are searched as independent terms.

In the not too distant past, a librarian needed to be familiar with the search commands for Dialog, BRS, or other online services. Librarians today also need to be able to move from one search engine to another with ease. Because of the variations in search syntax and Boolean operators, we would suggest that the novice user learn one search engine first and then branch out to others. Once a user becomes proficient on one system, it is fairly easy to make the transition to others.

A number of search engines are standardizing some common commands. For example, AltaVista, Infoseek, and Excite use quotation marks (" ") around phrases or multiple words to execute an adjacency command. They also use the plus (+) and minus (-) signs to either assure the occurrence or nonoccurrence of particular terms or concepts. The plus sign becomes the de facto AND operator, and the minus sign, the NOT operator. All the search engines have Search Tips for the advanced user, and we recommended their use.

Even when the search formulation appears correct, don't expect to find the exact match right away. All of the search engines have some weighting system that lists matches in order of the frequency or relevancy of matched terms. However, the logic of the listings may not be apparent. One may find the exact match on the second or even third screen of the retrieved lists. As with all types of interactive search systems, studying the results of the search may frequently provide a clue as to how to reformulate a search for better retrieval.

Internet searching tools are examined further by Peter Morville in "Using the Internet for Research." [8] Evaluations of various search engines can be found on NetSearch, a part of the FirstSearch database, as well as on Magellan (http://www.mckinley.com) and as part of Lycos' top 5 percent choices.

Training and Practicing with
the World Wide Web

As reference librarians, we hone our searching and finding skills of print and other resources by building a semantic map of our library's reference room through the physical experience of browsing the stacks while helping patrons. We come to know where to find literary criticism or accounting reports in our collections from actually doing it. The World Wide Web is a much larger "collection," but the comparison holds true. We must encourage our reference staff to spend time to systematically explore the electronic stacks on the Web. One way to encourage this is to have librarians build and maintain Ready Reference pages and use Subject Specialist pages or bookmarks.

When browsing the electronic ready reference shelves, librarians and patrons will find familiar standard sources. The World Factbook, the Encyclopedia Britannica, and the AT&T Toll-Free Internet Directory can all line your online shelves. So, do you page or click? Again, librarians can build on the successful criteria they have used in the past to make sound reference decisions today. [9] Despite the newness of the medium, such familiar criteria as scope, coverage, currency, accuracy, credibility, authority, and ease of use can all be applied when evaluating Web reference tools. In fact, there are already a number of excellent ready reference meta-sites Web sites that are well organized with links to many different ready reference sources. [10]

Here are some examples of individual ready reference sites that can be found on the Web:

The World Factbook is a staple of most

traditional reference collections. It provides an overview of every country in the world. The basic content on its Web counterpart is identical. The online version is comprehensive and easy to use, but so is the print version. Both are updated annually. While the Net version, with its enhanced graphics and links to additional publications, is convenient, these enhancements are not essential for typical reference use.

Some ready reference sources on the Web may not contain all of the information that a print or CD-ROM counterpart offers. These "teaser sites," such as *Bartlett's Familiar Quotations* or *Peterson's Education Center*, may seem like old familiar standard reference sources but may not have complete information or may be even more difficult to use than simply finding the information in print or CD format. The *Familiar Quotations* is limited to the ninth edition (1901), and Peterson's has summary information that represents only a portion of the print source.

While the Encyclopedia Britannica's Web version, Britannica Online, is comprehensive and provides many more points of access than the print volumes, it is available by subscription only. It does update information continuously and contains links to related Internet sites. In this case, you must weigh its advantages against the costs of subscribing.

The AT&T Toll-Free Internet Directory is far more current than the print copies. Although the published volumes are updated twice a year, they can't compare in accuracy to the directory on the Web, which is updated every two months.

Many libraries have created useful Web pages with links to reference sources. These sites include links to dictionaries, fact books, quotation sources, and directories typical ready reference type material that creates a virtual ready reference shelf. The University of Tennessee Knoxville and Purdue University display two examples of this type of resource, as do the University of Texas at Austin and the University of Arizona. [11]

Virtual Reference and Subject Specialist Pages

In order to facilitate the use of the many Web-based sources while working at the reference desk, librarians may want to use the bookmarks feature of their Web browsing software to create a "Virtual Reference Room" or even a series of Web pages developed by subject specialists or bibliographers. Organizing bookmarks into logical categories with descriptive labels will help the reference staff begin to use and rely upon these online sources as they do the print resources on a ready reference shelf.

You will need to find the right balance between bookmarking a few general sources for each subject area and including every possible source in a given area. Coordination of the Virtual Reference Desk is vital to its success. Whether selection decisions are made by individuals or teams, an organized approach to adding and weeding sites and to maintaining existing links is essential. Communicating with each other about selection decisions and policies will provide staff members with information needed to deliver consistent, quality reference service.

Another way to promote familiarity with Web-based reference sources is to encourage subject specialists or department liaisons to create Web pages that link to the best sites in their fields of expertise. As we begin to use the Internet as a reference resource, librarians will now have to expand their traditional roles as reference book selectors to include selecting sites on the Web.

Electronic Collection Development Strategies

It is important for librarians to begin creating electronic collection development strategies for making thoughtful decisions about which sites to include in their bookmarks or Virtual Reference Desk. Certainly many of the criteria they have applied to other forms of collection development such as accuracy, currency, and authority are appropriate.

Pratt, Flannery, and Perkins, in their article "Guidelines for Internet Resource Selection," [12] speak to additional issues related to Internet resources. They recommend developing criteria that address features such as reliability, stability, and hardware and software concerns. Their guidelines ask us to look at such questions as whether user support is required, what is the availability of "help files or resource description files," and does "Internet use fluctuate[s] during different times of the day"? They suggest we question whether "the resource stays current through regular updates or demonstrates ongoing maintenance."

Conclusion

As we actively transform reference service, our central purpose remains the same-- to teach

patrons to find, evaluate, and use information effectively. To accomplish this, we consult both ready reference collections and virtual reference materials. Our bookmark folders contain the electronic versions of familiar reference sources, as well as recently developed home pages of online bookstores, medical information centers, and sports arenas. We apply traditional evaluation criteria to the unfiltered world of the Internet as we develop new criteria to match the changing forms of information access and delivery. We draw on our knowledge of how information is organized to provide our users with new search tools and new information seeking strategies.

As we integrate the old with the new, the skills, experience, and perspective we gain from our reference work will uniquely position us to see and seize our information future. We can create reference services of unlimited possibilities.

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2. Don Lanier and Walter Wilkins, "Ready Reference Via the Internet." RQ 33, 3 (Spring 1994): 365.

3. Paul Healy, "Untangling the Web: the World Wide Web as a Reference Tool." RQ 34, 4 (Summer 1995): 443.

4. Scott A. Melendorff, "Pounding the Pavement with Purpose: Utilizing the Information Superhighway for Daily Work Tasks." RQ 35, 2 (Winter 1995): 232.

5. Sara Ryan, "Using the Internet for Reference." p. 12 in The Internet Searcher's Handbook: Locating Information, People and Software. New York: Neal-Schuman, 1996.

6. The URL for Yahoo! is http://www.yahoo.com; Lycos is http://www.lycos.com; and Excite is http://www.excite.com.

7. The URL for AltaVista is http://AltaVista. digital.com; Infoseek is http://infoseek.com; and WebCrawler is http://www.webcrawler.com. AltaVista and Yahoo! have recently joined forces. Yahoo! provides the subject categorization of the Web, and AltaVista provides the keyword searching. Yahoo! pages have links to AltaVista and searches on AltaVista.

8. Peter Morville, "Using the Internet for Research." p. 28 in The Internet Searcher's Handbook: Locating Information, People and Software. New York: Neal-Schuman, 1996.

9. Ryan, The Internet Searcher's Handbook, p. 12.

10. Jeff Rosen and Carl Snow, "Internet Resources for Ready Reference." College & Research Libraries News 57, 12 (Jan. 1997): 14-17; also at http://www.ala.org/acrl/resjan97.html.

11. The URLs for the libraries mentioned are: University of Tennessee Knoxville http://www.lib.utk.edu/refs; Purdue University http://thorplus.lib.purdue.edu/vlirary/index.html; University of Texas at Austin http://www.lib.utexas.edu/Libs/PCL/Reference.html; University of Arizona http://dizzy.library.arizona.edu/libresources/referen.html.

12. Gregory F. Pratt, et al., "Guidelines for Internet Resource Selection." College & Research Libraries News 57, 3 (Mar. 1996): 134.
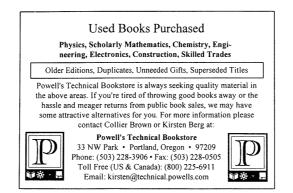
Appendix

1. Air Travel Manager
http://www.airtm.com
2. AT&T Toll-Free Internet Directory
http://www.tollfree.att.net/index.html
3. Brain Disorders Network
http://www.brainnet.org
4. Britannica Online
http://www.eb.com:180
5. The California Dept. Of Education
http://goldmine.cde.ca.gov
6. 1995 CIA World Factbook
http://www.odci.gov/cia/publications/nsolo/wfb-all.htm

5

7. Comet Hale-Bopp
http://www.halebopp.com
  8. Del Ray Books home page
http://www.randomhouse.com/delray
  9. Doctorlink
http://www.doctorlink.com
10. The Ellen Degeneres home page
  http://www.abc.com/primetime1
/ellen/degeneres.html
11. ESPNet Sports Zone
  http://espnet.sportszone.com
12. Evita Links
  http://www.wzrd.com/home/
gwilliams/wpage/evita/evitalinks.htm
13. Familiar Quotations
http://www.columbia.edu/
acis/bartleby/bartlett
14. The 1997 Fargo Flood home page
http://www.ndsu.nodak.edu/
  instruct/schwert/nd_geol/fargo_flf/
  argo_fl.htm
15. FBI
  http://www.fbi.gov
  16. Government Printing Office
http://www.access.gpo.gov/su_docs
  17. Home Depot home page
http://www.homedepot.com
  18. IBM home page
http://www.ibm.com
  19. Internet Cruise Travel Network
http://www.cruisetravel.com
  20. Internet Guide to Bed & Breakfast Inns

http://www.traveldata.com
  21. Library of Congress Internet Statistics
  http://lcweb.loc..gov/stats/wwwstat.cum..html
22. The Los Angeles Dodgers home   page
http://www.dodgers.com
  23. NASA
http://www.nasa.gov
  24. National Baseball's Hall of Fame
http://www.enews.com/bas_hall_fame
  25. The Oklahoma City Bombing Trial
http://www.thnet.com/~jonesbp
  26. Peterson's Education Center
http://www.petersons.com
  27. The Tiger Woods home page
http://www.golfweb.com/ga96/
pga/tiger/news.html
28. Tobacco Under Attack home page
  http://www.cnn.com/US/9705/tobacco
29. Web Yellow Pages
  http://www2.webyellowpages.
com/webyellowpages
30. White House
  http://www.whitehouse.gov/WH/
Welcome.html
31. World Dyslexia Network Foundation
  http://www.surrey.ac.uk/Psychology/WDNF
32 WorldNet Architects & Interior
Designers
http://www.goworldnet.com/intind.htm
33. X-Files home page
  http://www.thex-files.com

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