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## Science librarianship and the internet

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# Science Librarianship and the Internet

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When I joined the University of Oregon Science Library staff, in September 1992, knowledge of the Internet, though a plus, was not a necessity. Over the past four years, however, the influence of the Internet has become so pervasive in science librarianship that the thought of hiring a reference librarian with no Internet experience borders on the absurd.

In this article I intend to describe some of the changes that the Internet has wrought on my own professional life, as well as to speculate on some of the challenges that may lie ahead. These can be roughly divided into four areas. The Internet as a reference tool, end-user instruction, technical support, and collection development.

## Reference Tool

The biggest area of change, and the one that most librarians probably think of when they discuss the Internet, is the arrival of the Internet as a reference tool. In 1992, with the exception of e-mail, only the most adventurous librarians were surfing the contents of the Internet looking for the answers to reference questions. The most advanced search engine of that time, ARCHIE, just wasn't up to the job of finding much besides known file names. All this quickly changed as Gophers became more widespread, followed by the explosive growth of the World Wide Web.

In my experience the Internet has become what is often a quick way to answer simple reference questions. Following are a few examples of activities more easily accomplished using the Internet than through using the print resources of a science library:

- Searching on-line catalogs around the world
- Answering the question "What is a strawberry moon?"
- Acquiring recent weather data
- Finding conversion factors between deciliters and teaspoons or tablespoons
- Locating pictures of all types (much easier to search for than in print library)
- Finding Material Safety Data Sheets ([research.nwfsc.noaa.gov/msds.html](http://research.nwfsc.noaa.gov/msds.html))
- Finding postal addresses and e-mail addresses of faculty and students at other schools, both nationally and internationally.
- Finding Astronomical data (e.g. very large NASA data sets)
- Locating product reviews (especially software)

The utility of the Internet as a reference tool has been vastly increased with the explosive growth in the World Wide Web and the recent introduction and rapid innovation in Web searching tools. Tools like Lycos and AltaVista, while far from being perfect, allow the creation of both complicated boolean searches as well as simple natural language queries that enable the retrieval of vast amounts of relevant (and irrelevant) data. A well formulated search can often provide an answer immediately. The drawback of these search engines is that they often return huge numbers of hits. Moreover, if one doesn't know a reasonable amount about the particular search engine and how to read the results, one is likely to be overwhelmed, disappointed, or both.

Another reference strength of the Internet is the access it provides to subject-oriented groups and the experiences of their members. I've used this expertise a number of times when posting obscure reference questions to Usenet discussion groups. Such simple questions as "how much does a mosquito weigh?", were quickly answered. Just as quickly answered were more complicated questions such as "I remember in the late 1960s NASA announced that the earth was a day late in its orbit. What was that all about?"

Depending on how one looks at it, the Internet also brings a whole new conundrum to reference work: When do you give up? With the resources, both factual and experiential, of the Internet backing up the library's collection, one can never truly say one has exhausted all possibilities! In fact, the patron's patience is likely to run out long before the librarian's options.

## End-User Instruction

End-user Internet instruction is both one of the most important and most challenging roles for the librarian. The most effective form of end-user training, in my experience, is one-on-one instruction. Unfortunately, it is time consuming and impractical. Group training is more difficult in terms of preparation and resources required (infrastructure and personnel), and it is emotionally stressful because of the cantankerous nature of the technology. But it is more efficient than one-on-one, or point-of-use instruction. In my experience the amount of end user training (i.e., BI) we have done since we introduced the Internet to the science library has vastly increased. And unlike previous end user training, the course content tends to change—as the technology changes—every couple of months. This leads directly into another major challenge of the Internet.

## Technical Support

If librarians find maintaining photocopiers vexing, wait until they have to start dealing with Internet computers in public service areas! I spend a fair amount of my time troubleshooting the many computers in the Science Library. As I'm sure many other librarians feel, I didn't sign on to become a computer mechanic! But in these times of fiscal restraint and

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increasing computerization, learning at least the basics of PC or Macintosh technical support seems inevitable.

Another area of technical support is all the new software one must learn to use and create for the Internet. Though HTML (hypertext markup language) is a fairly easy language to learn, using it well and working with graphics involves a lot of practice.

### Collection Development

I think this is probably the area where we are likely to see the most changes in science librarianship. One of the most important areas I envision is the growth of materials in on-line form. We are starting to see the proliferation of electronic journals in two forms, both original journals that exist only in electronic form, as well as paper journals that are duplicated in electronic form. We are also starting to see the availability through the World Wide Web of many of the major on-line databases (eg *Medline*, *Psychinfo*, etc.). Before, such databases tended only to be available from sources such as Dialog. In the future, I expect most of these databases will be available to any user on the Web—for a price, of course! How the library provides access to these databases and journals is going to be interesting. Especially as the development of ways to pay for information provided over the Internet matures. Will the library or university have to provide each user with a credit card number for Internet browsing, or will we continue to provide our information only through the library by purchasing site licenses to all the sites we deem important enough for students and faculty to need? Will the Library run one account that pays for all student and faculty usage? And how will we monitor which sites are of an academic nature suitable for the library to subsidize? If we think journal infla-

tion makes our budgets unpredictable, wait until we have to deal with a scenario like this! And, of course, many other scenarios could emerge.

The duties of the subject specialist also have a potential to expand with the Internet. Is a subject specialist responsible for collecting or providing access to Internet sites in his or her collection discipline? For instance, should the biology subject specialist attempt to create a page linking all sites of importance to biology? My own experience has shown that doing this well is incredibly time consuming, and quickly becomes unmanageable. The number of sites is increasing too quickly, and the task of evaluating them for quality is too time consuming. At present my strategy is to provide links only to certain categories of sites. Presently this includes subject-oriented guides (let others do the cataloging), e-journals, local sites, and professional associations. I suspect that e-journals will be the next category to become too unwieldy to include on my subject oriented pages. Creating a new home page can be a lot of fun, maintaining it and keeping it current is the hard part!

I have only scratched the surface regarding how the Internet has affected my job as a science reference librarian and how I envision my job changing. We are still in the early years of the information revolution that the personal computer and the Internet have created. Yet the changes of the last few years and their implications for the future are immense, and so will be the challenges! Lets face it, these are the kinds of challenges that make our jobs fun! ☐

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## Technical Services

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spends a lot of time preparing for classes, which is time away from her primary responsibilities. But like other technical services librarians I spoke with, she feels obligated to continue to further her understanding of the Internet.

Finally, a less tangible effect of the Internet is the approach brought to the job. Drost thinks that because of the changing technology and the increased presence of the Internet in our professional lives, technical services librarians need to be "adaptable, flexible people willing to learn new things every year" and "people who enjoy working with computers." ☐

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