

# Learning to Use the Tools of the Trade

by Eric Lease Morgan

**T**he purpose of this article is to articulate how librarians can improve the practice of librarianship by better assimilating computer technology into the profession's thinking (and "thinquing"). The article accomplishes this goal first by outlining four informal research projects conducted at the North Carolina State University (NCSU) Libraries. It shows how these projects exemplify the goals of librarianship. Next, the article demonstrates how librarians can use their traditional skills to provide new and progressive library services while maintaining traditional principles. Finally, the article describes why these sorts of activities are important to the profession and its growth.

## The Alcuin Project

The Alcuin Project, begun in 1994, is an effort to explore the possibilities of organizing Internet resources by using traditional cataloging models and providing access to these resources through an online public access catalog (OPAC).<sup>1</sup> The project has its roots in the Alex database. Hunter Monroe, an economist, had been maintaining a list of Internet-based electronic texts. His goal was to create an OPAC-type database of Internet resources. The NCSU Libraries fostered a relationship with Monroe, and consequently hosted his data on its gopher server.<sup>2</sup> Monroe named his database Alex.

The NCSU Libraries experimented with methods of providing access to the Alex database via Web browsers. While

web browsers can interpret the gopher protocol, using them to access gopher servers does not reveal their fullest potential. Consequently, Monroe was asked to create a specialized report from his database of resources that would be easily readable with Web browsers and indexable by the WAIS technology. Monroe obliged and a Web/WAIS interface to Alex was created.<sup>3</sup>

At the same time, the NCSU Libraries had been working with Tim Kambitsch on scripts to search our DRA-based OPAC with Web browsers.<sup>4</sup> These scripts allow the searcher to specify Boolean queries to selected databases on our OPAC. After installing these scripts, we were able to search the OPAC using Web browsers.<sup>5</sup> Furthermore, by including URLs in subfield U of the 856 fields of machine readable catalog (MARC) records, we were able to make hot links from our OPAC to Internet resources.

By combining the data from the Alex database with the web/DRA gateway scripts, the NCSU Libraries created a MARC record-based database of Internet resources. This was done by asking Monroe to create yet another report from his database. This final report was in the form of rudimentary, tagged MARC records.<sup>6</sup> The report was filtered through a locally developed piece of software (Alcuin's Little Helper) that converted Monroe's report into MARC records in communications format.<sup>7</sup> Finally, these

records were imported into a database of our online catalog, Alcuin.<sup>8</sup>

## Mr. Serials Process

The Mr. Serials Process is a systematic method of collecting, organizing, archiving, indexing, and disseminating electronic serials. Using readily available technologies found on the Internet (ftp, WAIS, gopher, http, perl, procmail, and e-mail), the Mr. Serials Process has proven an effective means for the management of electronic serials that are consistently formatted and delivered via e-mail.<sup>9</sup> To date, more than 1,500 individual articles/issues of electronic serials have been collected, comprising just over 50 MB of data.

The Process begins with an account on a computer which subscribes to library- and information science-related electronic serials. As issues and articles arrive, they are filtered into a "to do" directory. The maintainer of the collection uses a locally developed piece of software to extract the bibliographic information from each item in the directory. This information is used to update html files on our Web server. The original issue (or article) is then saved on a local ftp server. Finally, on a regular basis, the collection is indexed using the WAIS technology to provide keyword access, while the Web server provides browsable access.

The system works well as long as two conditions



hold true. First, in order to extract the bibliographic information from each title, this information must be consistently located within each document. If any bibliographic element is not consistently located in every document, then extra effort must be made to adjust the system's parameters. This problem could be overcome if the serials were delivered in a standard format such as the Standard Generalized Markup Language (SGML). Second, more and more electronic serials are being delivered via Web servers instead of e-mail. To overcome this problem, the use of the Harvest technology is being explored.<sup>10, 11</sup> Unfortunately, if Harvest is the only thing being used to gather and index the serials, then the Mr. Serials Process does not accomplish one of its goals, namely preservation of the materials.

### Ask Alcuin

Still, with all the new information resources available today, the need for an expert information intermediary (like a librarian) is apparent. Modeling a traditional reference interview, Ask Alcuin represents the beginnings of an expert system designed to supplement the activities of reference librarians.<sup>12</sup> Ask Alcuin works by presenting a series of questions via Web forms. Based on the answers, the system asks other questions. Throughout the process, Ask Alcuin dynamically constructs search strategies in the form of URLs that can be applied to various Internet databases like AltaVista, Yahoo, locally mounted bibliographic databases through the OPAC, or even Alcuin (above). At the end of the question-and-answer process, a "game plan" is created for finding the information the end-user seeks.

This system is intended to be used in conjunction with a wireless network throughout the library. Consequently, a patron could come into the library and borrow a portable computing device. This device, attached to the wireless network and capable of using the Web, could then be used anywhere in the library in conjunction with our wealth of print resources. Thus, when reading an article, a patron could consult a dictionary or query Alcuin which could find "more articles like this one." The portable device could even provide directions to just about anything in the building.

### See You See A Librarian

See You See A Librarian is an exploration into the use of live, multimedia technologies for the use of librarian-to-

librarian or librarian-to-patron communication.<sup>13</sup> Essentially, this project's purpose is to discover whether or not Cornell University's CU-SeeMe application can be used effectively in a library setting.<sup>14</sup> The experiment has been divided into three stages:

1. Feasibility – Determine how many librarians have the necessary hardware, software, and willingness to explore the use of the CU-SeeMe technology.
2. Librarians on Librarianship – Limit the scope of discussion to library issues. It is intended to be a forum for the real time discussion of such library issues as reference services, cataloging resources, collection management, or acquisitions.
3. Librarians Fostering Knowledge – Open the discussion to information seekers needing assistance. For example, reference questions can be answered, suggestions can be made for the organization of information, and assistance can be given for configuring information retrieval software.

At the time of this writing, the project has barely reached stage 2. Based on preliminary observations, the CU-SeeMe technology can be used to enhance communications between librarians and their patrons with a few limitations. First, too few librarians possess the necessary hardware to do complete audio/video input and output. Similarly, few patrons have this sort of equipment. On another note, potential users of such a system, informally surveyed, believe telephone communications are adequate for reference interviews and librarian/patron interactions. Unfortunately, these people do not seem to understand the benefits of non-verbal communication.

### Librarianship and the Creative Spirit

In my opinion, the important things

about these projects are not the projects themselves, but rather what they represent. These projects represent a library's ability to provide new and progressive information services with computers. These projects implement traditional library skills and principles using computer technology. Librarianship is often described as the process of collecting, organizing, archiving, disseminating, and, sometimes, evaluating information. Each of the projects outlined above manifests one or more of these characteristics. The Alcuin Project organizes and disseminates bibliographic information. The Mr. Serials Process manifests all the characteristics listed above except evaluation. Ask Alcuin attempts to disseminate information and, in the future, will do a bit of evaluation as well. See You See A Librarian also demonstrates ways of disseminating information.

This process of amalgamating traditional library skills and ethos with computer technology requires a certain type of thinking as well as something else I have coined as "thinquing." In this setting, "thinking" is an intellectual process characterized by methodical, systematic, left-brain activities. In many ways this sort of activity is characterized by endeavors such as mathematics and computer programming. The other half of the process, "thinquing," is intuitive, creative, and unsystematic. Many people characterize artistic endeavors in this manner.

Both of these intellectual processes — thinking and thinquing — are necessary for libraries to manage technology effectively. Thinking must be used to analyze the needs of our clientele. It must be applied when drawing up a budget. Thinking is a necessary activity when learning how to use the newest piece of software. Similarly, thinquing must be a part of the process of evaluating how to use computer technologies for library services. Thinquing must be taken into account when asked a new reference question and the an-

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swer is not readily apparent. Thinqing is the process you use when you encounter a new problem and must come up with some sort of solution. The problem with the library profession today is its tendency to ignore obvious problems; consequently, it rarely employs the practices of thinqing.

Put another way, it behooves libraries not only to keep abreast of new computer technologies (thinking), but also to discover possibilities for improving services with these technologies (thinqing). Then, and only then, will librarians manage computer technology effectively. The entire process requires a fundamental understanding of library principles and, at the same, it requires individual librarians to thinq "outside the box" in order to enhance methods of applying these principles.

In today's world of networked information, more and more information-seeking activities take place without a librarian. Frequently, our clientele can do real, significant research without ever stepping into a library. Many of our profession, as well as lay people, see this changed environment as a prelude to the demise of libraries. While the future of libraries will not be the same as their past, I do not see libraries fading away. Rather, I see the current environment

fostering a means for evolution and an enhancement of library services. Like a caterpillar, libraries can use the current environment to foster growth and reorganization and to emerge as a beauty unto itself and for others.

In conclusion, as more and more people gain access to more and more information, these same people will have to come to terms with methods for evaluating and using this information. This process, the process of evaluating and using information, is, in my opinion, the future of librarianship. This process moves the library from a mission of dispensing information to one of fostering knowledge and understanding. It has been said that understanding is like a four-rung ladder. The first rung on the ladder represents data and facts. As the data and facts are collected and organized they become information, the second rung on the ladder. The third rung is knowledge, where knowledge is information internalized and put to use. The last rung is wisdom, knowledge of a timeless nature. Technology has enabled more people to climb between the first and second rungs of the ladder with greater ease. Similarly, technology may enable libraries and librarians to climb higher on the ladder as well and provide knowledge services instead of simply

information services.

## References

- <sup>1</sup> See <http://www.lib.ncsu.edu/staff/morgan/cataloging-digital-mediums.html>
- <sup>2</sup> See [gopher://gopher.lib.ncsu.edu/11/library/stacks/Alex](http://gopher://gopher.lib.ncsu.edu/11/library/stacks/Alex)
- <sup>3</sup> See <http://www.lib.ncsu.edu/stacks/alex-index.html>
- <sup>4</sup> See [http://dmcpl.dayton.lib.oh.us/~kambitsch/niso/www2dra\\_forms\\_NL.html](http://dmcpl.dayton.lib.oh.us/~kambitsch/niso/www2dra_forms_NL.html)
- <sup>5</sup> See <http://library.ncsu.edu/>
- <sup>6</sup> See <ftp://ftp.lib.ncsu.edu/pub/stacks/alex/alex-950224-tagged.txt>
- <sup>7</sup> See <http://www.lib.ncsu.edu/staff/morgan/al-helper.html>
- <sup>8</sup> See <http://library.ncsu.edu/drabin/alcuin/>
- <sup>9</sup> See <http://www.lib.ncsu.edu/staff/morgan/report-on-mr-serials.html>
- <sup>10</sup> To learn more about Harvest, see <http://harvest.cs.colorado.edu/>
- <sup>11</sup> You can see the very beginnngs of this process at <http://sunsite.berkeley.edu/~emorgan/morganagus/>
- <sup>12</sup> You can see the very beginnngs of this application at <http://www.lib.ncsu.edu/staff/morgan/alcuin/>
- <sup>13</sup> See <http://sunsite.berkeley.edu/~emorgan/see-a-librarian/>
- <sup>14</sup> For more information about CU-SeeMe, see <http://cu-seeme.cornell.edu/>



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