
Automated Reference Service: Pressing F1 for Help"

Donna Cornick

The following story, entitled, "Call Button for Librarians," is a classic example of what patrons and librarians face today in the world of automation, and it capsulizes both the joys and frustrations that automation offers.

A faculty member was working at the SilverPlatter workstation around the corner from the Reference Desk. Although she was out of sight, the sounds from the workstation were clearly audible. I knew from previous experience with her that she liked to work undisturbed, but when I continued to hear rustling, and no typing or printing, I approached her and asked how things were going. "Well," she said, "I don't know if I think much of all this. I've been pressing F1 for help for the last ten minutes and you're the first person to show up."

Reference librarians must heed this "pressing call for help."

Studies from Cornell, Texas A&M, the University of Washington and Vanderbilt University present findings which agree that, while new electronic reference service is exciting and offers tremendous opportunities to libraries and their patrons, it does not come problem-free.^{2,3,4,5} This paper focuses on the impact of CD-ROM data bases and computer data files on reference service and presents ten broad areas of potential concern that librarians will need to address in order to provide high-quality automated reference service.

Organization and Management

One major concern is how automated reference service will mesh with the more traditional aspects of reference work. Questions such as, "Should there be a separate electronic information unit or should the service be an integral part of the reference department?" must be resolved. Many libraries opt for including the electronic service as a component of the overall reference service function. Still, pros and cons can be found for both arrangements.

Donna Cornick is the Electronic Reference Services Librarian, Business Administration and Social Sciences Department, Davis Library, The University of North Carolina at Chapel Hill.

Unless a new position is funded, someone on the present staff will need to be assigned the additional responsibility for management of automated reference service. This position will require strong public service skills, the ability to instruct both staff and patrons in the operation of the service, and technical skills relating to the operation of microcomputers.⁶ This librarian will need to plan and assist in developing the collection, work with the acquisitions and catalog departments, train the reference staff, introduce bibliographic instruction sessions for patrons, write documentation to assist both librarians and patrons, collect and report statistics, work with the technical staff to set up the hardware and software, and trouble-shoot as technical problems arise. Often the librarian assigned these new duties has previously had the responsibility for coordinating the online reference service. Since many of the skills are complementary, this is a logical choice.

Finance

New technology is expensive. The cost of data bases on compact disc can range from \$250 for a data base such as *Pravda* to \$2,000 for *CD/Corporate* from Lotus Development Corp. Machine readable data files can also be expensive, ranging from under \$100 for the *World Development Indicators* on floppy disks to \$2,000 for Slater Hall's *Business Indicators* on compact disc.

Workstations are also costly, averaging approximately \$2,500 to \$3,000 per station which includes the micro, monitor, printer, and compact disc player. Funding for additional items such as expanded memory, graphics cards, and math co-processors may be needed. Local area networks will be an added expense. Approximately \$2,000 to \$3,000 is needed to purchase a new dedicated file server, with \$500 to \$1,000 for additional equipment for each node. Furthermore, if the network provides access to CD-ROM data bases through systems like CD-NET, the cost will vary depending on the number of disc drives purchased ranging from \$4,000 for one disc drive to

\$24,000 for twelve drives.

Library materials budgets traditionally have been designed to support collection development, and that has historically meant the book collection. The cost of subscribing to data bases on compact disc, purchasing local area networks, having telecommunication hookups, and setting up the hardware and software to support this service can strain budgets already stretched to the limit. Data bases in electronic format generally are considered to be an add-on cost and are not considered as a replacement for print subscriptions. Thus, important questions arise such as where will the funding come from to support these costly new services? Will it be provided at the expense of the materials budget, or will a separate budget line be established? Can grants be secured, or does the library have trust funds available to finance this service? Could some combination of all of the above be the solution?

Libraries will also need to recognize that subscribing to CD-ROM data bases, leasing of data tapes, or outright purchase of floppy disk data bases will in most cases require an on-going financial commitment. A library frequently leases, rather than purchases, a CD-ROM data base. Thus, it will not be a part of the library's collection unless the subscription is maintained.

Another financial consideration is the availability of sufficient money to provide the service with the necessities of computer paper and ribbons. Such commodities cannot be dismissed as a trivial expense. If the service is heavily used, the supply issue can become a major concern and even an obstacle to service.

Other costs will involve hardware maintenance and repairs. As the service experiences heavy use, mechanical problems will arise. Monitors can blow, keyboards stick, disc drives fail. A maintenance contract or a repair budget will be needed to keep the service operating at full capacity.

Finally, a major expense of automated reference service involves the cost of staff time for what is a labor intensive operation. Staff will need time to learn the various systems, to practice on the data bases, and to understand microcomputer operations. Additionally, staff will have to spend a large amount of time assisting patrons.

Selection of Data Bases

The number of data bases in the various electronic formats continues to grow. A 1988 estimate cites over two thousand public access data bases in machine-readable format.⁷ The files available

now encompass most academic disciplines, from the *Modern Language Association Bibliography* on CD-ROM to the *County and City Databook* on thirty-three floppy disks. With limited funding, the decision of which files to purchase becomes particularly important. Libraries will need to review carefully and rewrite or revise collection policies to guide future purchases. Data bases will need to be evaluated on the anticipated popularity of use, the quality of the search software and its ability to find citations in the data base, and the quality of documentation offered. Clearly a fundamental selection question is "the extent to which any one of these products makes it easier for our patrons to locate the information they need."⁸

In addition to the problem of selecting the appropriate data files, the issue of compatibility comes into question. Will the selected data base work on the library's hardware? Can products from different vendors having different software be configured to work on the same microcomputer or will dedicated workstations be needed? Will the selected data base work at all? Because of the "experimental" nature of electronic data files, some files may be made available prematurely and put on the market before being debugged completely.

Location

If a reference department has decided to offer access to data files in electronic format, a decision is needed regarding the location of this service. There are certain criteria that must be taken into account. Most libraries have chosen to locate the electronic information service near the reference desk, with assistance for the operation provided by staff scheduled at the desk. One obvious ramification of this location is that the demand for service at the reference desk will increase dramatically as the popularity of data base searching by patrons grows. The demand can create a serious strain and can sometimes threaten to overwhelm desk service.⁹

The chosen location will need to have a sufficient number of electrical outlets and perhaps telephone cabling. Additionally, as it is expected that the service will grow, the need to locate in an area that offers the possibility for expansion is an important consideration. If the service is to be housed in an open area, noise from the printers and librarian/patron conversation can be a nuisance to other library users. However, if the service is to be housed in a closed room, adequate ventilation for the equipment is an issue, as is having sufficient room for expansion.

There is also the matter of aesthetics. A new service is often a highly visible, show-case service, so attractive furnishings and office landscaping is an important but costly issue.

Finally, security of data files is a legitimate issue. Librarians will need to arrange for a use policy that will ensure that data files will not be stolen, over-written, or damaged.

Level of Service

As electronic reference service grows in popularity, the library must meet increasing demand by supplying a sufficient number of workstations and copies of the popular data bases. At present, the one-user, one-disc, one-workstation configuration is the standard for most CD-ROM data bases. This is a serious limitation in terms of access to the data. Local area networks and changes in data base licensing, which will provide multiple access to compact disc data bases, will help alleviate this problem, although usually at a higher subscription fee.

Other service questions concern hours of access to the data base. Should the service be open to the public all hours the reference department provides service or should some time be reserved for staff training, software installation, and maintenance?

A policy of use will need to be established. Would patrons be better served if they could reserve a time for the data base search, or should walk-in access be the rule? Or should some combination which permits both be the preferred method?

The question of free or fee-based searching is another issue to resolve. Although most libraries offer compact disc data base searching without a fee, some are looking at the options of charging for computer paper or using a coin-operated system.

If libraries provide access to statistical data in machine-readable format, then the level of assistance the reference staff should provide must be determined. Do librarians need or possess the skills to help patrons with statistical manipulation of data and to teach basic microcomputer skills including spreadsheet applications, or is providing access to the data sufficient?¹⁰ One model is the University of Florida Library's Data Center, where the reference librarians providing service for MRDF data bases offer "basic access but do not consult in technical or statistical areas."¹¹

Reference Staff

Automated reference service can cause con-

siderable stress and anxiety to a staff already overworked providing traditional services. This added service burden can create serious staffing problems. If assistance for the new service is added as one more service from the reference desk, then everyone who is assigned to work at the desk—professional librarians, support staff, and student assistants—will need to possess basic microcomputer skills. An extensive training program will need to be organized which will allow for both training and practice time on every new data base. Staff will need to learn the search software of the different products provided, each of which has its own unique command language and quirks.

'Anyone contemplating adding laser disc data bases must disabuse himself of the notion that they save staff time ...'

A minimum level of service skills will be necessary to ensure that everyone on the staff can handle the routine matters. These minimum level skills could include booting up the micros and initiating a search of all of the various CD-ROM data bases; using Boolean logic; printing citations; downloading records; changing paper and ribbons; and knowing how to respond when the system fails for no apparent reason.

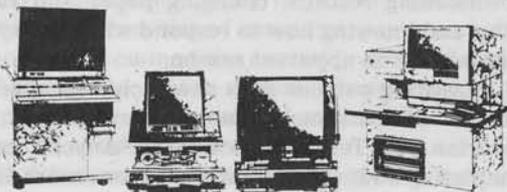
Assisting patrons with new technological services is an extremely time-consuming task. A librarian from Texas A&M cautions, "Anyone contemplating adding laser disc data bases must disabuse himself of the notion that they save staff time..."¹² It takes much longer to explain to a user how to use the *PsycLit* compact disc than it does to direct the patron to the printed Psychological Abstracts volumes. "Reference librarians in departments which have just recently acquired CD-ROM discs frequently mention the way their time is being redistributed away from traditional reference service to the instruction of patrons in the use of CD-ROMs. These demands for new instruction and new services will only increase as librarians make more computerized information technology available to patrons."¹³

If data bases on compact discs create problems for the staff in providing assistance, machine-readable data files can cause nightmares. Usually, the files are complex and may arrive in "compressed" or "squeezed" formats with little or no understandable documentation to help unravel the mysteries. Hours of staff time will be required



**Southeastern
Microfilm, Inc.**

**AND MINOLTA.
TWO
ORGANIZATIONS
THAT CAN
HELP YOU GET
ORGANIZED.**



EQUIPMENT

We're Southeastern Microfilm, Inc. and we can help you reduce your filespace by 90% or more, help make your record keeping more organized and your staff more efficient.

Our micrographics professionals can help you select the right tools from a whole range of advanced Minolta micrographic equipment. They can tailor a system to meet your needs exactly.

Southeastern Microfilm, Inc. is the most complete micrographics dealer in North Carolina, offering advanced production services, a complete line of equipment and supplies and total customer support services.



ONLY FROM THE MIND
OF MINOLTA

SERVICE

**WE HAVE A LOT OF MICROGRAPHIC
SOLUTIONS LOOKING FOR PROBLEMS.**

Asheville • Charlotte • Greensboro • Greenville • Raleigh
1-800-532-0217

to understand each data file, write documentation, and teach staff and patrons about them.

In order to provide service for computer file data, staff must also have a solid understanding of microcomputer operating systems, usually DOS; a good understanding of spreadsheet software, usually *Lotus 1-2-3*; and some statistical expertise. But reference librarians should not be expected to offer this service without help. "The reference librarian alone cannot meet the information and access needs of patrons without the consistent help of the systems group (i.e. programmers and data managers) within the library."¹⁴ These services require "that a team approach be developed and sustained over a long period of time."¹⁵ Additionally, if access to the data files, online catalogs, or commercial data bases are offered through remote locations, staff will need to be able to interpret questions and provide assistance to users over the telephone or through an electronic mail service. Since many librarians and most support staff do not have a background or expertise in computer applications, reference departments will need to commit many hours to staff training in order to offer new technological services while providing quality assistance to patrons.

Copyright

The issues of copyright and licensing of machine-readable data are also important considerations. Typical CD-ROM product licenses and MRDF copyright agreements do not allow for network use unless the product is in the public domain or a special license agreement for multiple use is offered. The question of the legality of downloading data also has not been completely resolved. As Stephen A. Shaimon and Howard B. Rein remind us, libraries are guided by the vague and obscure interpretation of Section 107 of the Copyright Law, which says, "fair use of a copyrighted work for the purposes of teaching, scholarship or research is not an infringement."¹⁶ As a result librarians are left to guess how new technology applies to this section.¹⁷

Relation of the Library to Other Campus Units

The library is not the only organization on campus to provide access to data in electronic format. The computation center is in the same business. There may be other campus agencies, such as microcomputer support centers or data libraries, conducting similar operations. The library and other campus units must cooperate and coordinate efforts to provide users quality

service and to avoid duplication of costly data files and services.

Remote Access to Data

Connections to the online catalog from a dial-in system, access to CD-ROM data bases on a local area network through a campus broadband connection, and electronic mail reference service all provide access to library data from outside the library itself and will expand the scope of the library's services. Reference staff will need to decide how to provide assistance to users who no longer have to come to the library for information. Georgia Tech's library provides networked access to its online catalog of books and journals, as well as selected bibliographic data bases such as *Magazine Index* and *Management Contents*. It delivers information to faculty and students instead of trying to serve them in the library.¹⁸

While generally viewed as a positive, progressive step in service, the creation of remote access services are seen by others as a threat to the library's function. They argue that the "library should be judged 'successful' to the extent that it does itself out of a job," by no longer requiring users to come physically to the library for information.¹⁹ One writer concludes that "optical discs can be viewed as being in direct competition with the library itself, at least as it is traditionally viewed,"²⁰ since academic departments may also purchase CD-ROM data bases and house them within their own buildings. Again the library's role of providing access to information could be usurped.

Patrons

Library patrons have generally been very enthusiastic and excited about the opportunity to use new library technologies such as compact discs and online public access catalogs. But along with this eagerness often comes a lack of understanding regarding the mechanics of accessing the data. Patrons may attempt to do a CD-ROM search without having the compact disc in the player. They may download data to the hard disk and then wonder why there is no data on their floppy. They may insert the compact disc into the floppy disk drive where it will be stuck. (To remove the CD, just apply a bit of tape to the disc, pull gently.) Such experiences document that "users require extensive professional help."²¹

The type of assistance can vary. Bibliographic instruction classes offer the opportunity to reach a group of users at one time. Documentation that is brief and to the point can also be helpful. It

needs to be recognized, however, that most users prefer one-to-one assistance at the time they are directly accessing the data and that this point-of-use assistance is *very* costly in terms of staff time.

Assisting patrons with new technological services is an extremely time-consuming task.

Demand for staff assistance in using large computer files is even more time-consuming. Due to the complexity of the files, one hour is the average amount of time spent assisting a patron with a data file at the MRDF Center at Davis Library. This does not include, however, the preparation time spent by the librarian examining the file prior to the patron's arrival.

Patrons can also become perplexed by the various microcomputer stations available in the library. Some stations may be devoted to accessing the online catalog, others to compact disc searching, others to online data base searching, and others to word processing. Directional signs are helpful in avoiding this confusion.

Having selected data bases in electronic format can create research problems for patrons. It has been noted that patrons prefer to use *InfoTrac* because it is easy to use, quick, and offers a print bibliography of sources. *InfoTrac*, however, may not always be the most appropriate source of information. The same can be said for other CD-ROM products. Users often prefer using a CD to a more appropriate print source. Patrons will try to force a subject search into one of the data bases on compact disc, even when the topic is not at all well suited for the content of the data base. Thus, the new technologies, while dazzling, can be deceptive in their actual scope.

Conclusion

To say that CD-ROM data bases have become extremely popular is an understatement. At UNC-Chapel Hill, use statistics for FY 1988-89 are expected to top 11,000. From the rather modest beginnings in the last six months of FY 1986-87 when there were a total of 646 uses, followed by 5,358 uses in the next fiscal year, the increase has been dramatic.²²

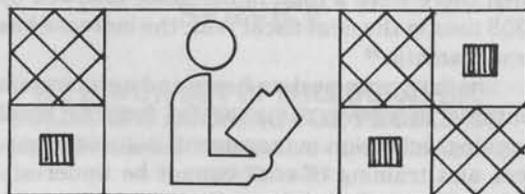
Similarly, as new data bases and new formats continue to evolve, the need for ongoing fiscal planning, collection management, housing of services and training of staff cannot be underestimated. If they are, reference librarians will not be

able to provide the services that patrons expect.

While automation offers alluring and exciting opportunities for libraries to provide increased access to information for users, it also challenges reference librarians to provide quality assistance to accompany the achievements of technology.

References

1. "Call Button for Libraries?" *The Silver Platter Exchange* 2 (January 1989): 13.
2. Bill Coons and Linda Stewart, "Mainstreaming CD-ROM into Library Operations," *The Laserdisk Professional* 3 (September 1988): 29-40.
3. Sandra L. Tucker, Vicki Anders, and Katharine E. Clark, "How To Manage An Extensive Laserdisk Installation: The Texas A&M Experience," *Online* 12 (May 1988): 34-46.
4. Timothy Jewell, "CD-ROM and End-Users: The University of Washington Experience," *CD-ROM Librarian* 4 (January 1989): 15-21.
5. Jean Reese, "CD-ROM SERVICES at Vanderbilt University: The Education Library Experience," *The SilverPlatter Exchange* 2 (January 1989): 10-13.
6. Diane Strauss, "A Checklist of Issues to Be Considered Regarding the Addition of Microcomputer Data Disks to Academic Libraries," *Information Technology and Libraries* 5 (June 1986): 131.
7. Stephen P. Harter and Susan M. Jackson, "Optical Disc Systems in Libraries: Problems and Issues," *RQ* 27 (Summer 1988): 518.
8. Jewell, 15.
9. Coons and Stewart, 35.
10. Strauss, 131.
11. Ray Jones and Colleen Seale, "Expanding Networks: Reference Services for MRDF," *Reference Services Review* 16 (Number 1-2 1988): 10.
12. Tucker, Anders, and Clark, 46.
13. Barbara B. Moran, "The Unintended Revolution in Academic Libraries," *College and Research Libraries* 50 (January 1989): 36.
14. Jones, 8.
15. *Ibid.*
16. Stephen A. Shaiman, Esq. and Howard B. Rein, "CD-ROM and Fair Use: A Lawyer Looks at the Copyright Law," *The Laserdisk Professional* 2 (January 1989): 28.
17. *Ibid.*, 29.
18. Miriam A. Drake, "Library 2000—Georgia Tech: A Glimpse of Information Delivery Now and In the Year 2000," *Online* 11 (November 1987): 48.
19. Timothy C. Weiskel, "The Electronic Library," *Change* 20 (November/December 1988): 25.
20. Harter and Jackson, 522.
21. *Ibid.*, 521.
22. David C. Taylor, "Reference ROMs: Six Implications for Libraries Building CD-ROM Database Service," *American Libraries* 20 (May 1989): 452.



Lighten Up:

A Call for Papers (Great and Small) Illustrating the Humorous Side of the Library Profession

It's said that librarians take themselves and their work too seriously. It's said, in fact, that we have no sense of humor at all.* *North Carolina Libraries* is planning an issue devoted to the fun and whimsical side of our work. If you would like to tackle one of the items listed below (or come up with one of your own), please contact by April 1:

Rose Simon
Gramley Library
Salem College
Winston-Salem, NC 27108
(919) 721-2649

Spoofs on our research methodology and results (cf the *Journal of Irreproducible Results*)

Letters to the Editor (of *NCL*) with replies and counter-replies

Horrendous manuscripts (puns, misspellings, mis-statements of fact &c.)

Rethinking our professional philosophies, theories of cataloging and classification, public service, etc.

From the Public—mangled reference questions, citations; excuses for lost and damaged materials

Biographies of (Fictitious) Librarians

Histories of (Fictitious) Libraries

Floor Plans for New (Fantastic) Library Buildings—submitted by: a cataloger, a reference librarian, a director, & a patron

A Day in the Life . . . (a librarian for whom everything possible goes wrong)

Epistolary Sequences concerning:

an overdue book; a vendor who continually misbills you for something; a patron protest of a harmless book (e.g., *Cinderella*)

(Fictitious) North Carolina Books and Their Reviews

Proposed New Bylaws for NCLA

*If true, *North Carolina Libraries* will present you with its complimentary official blank book in lieu of an issue.