
Electronic Mail in the Library: A Perspective

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ELECTRONIC MAIL HAS been available for over a decade in various forms. How is it used in libraries? To what extent is it used? Is it still viable for library applications? Are there other competing technologies which have surpassed the promise of electronic mail? These are some of the issues which this article will address.

The concept of electronic mail is fairly straightforward. Electronic mail systems allow creation and transmission of messages which can be addressed to an individual or select groups of individuals. The recipient can then read the message, answer it, store it electronically, forward it to another individual, print a paper copy, or delete it. However, the technology and variety of types and levels of electronic messaging is much more complex. For background information, consider Trudell et al. (1984) who present historical and technical aspects of electronic mail.

Trudell et al. also identify speed of delivery, reliability of delivery, and security and privacy of messages as three beneficial characteristics of electronic mail. Universal delivery and flexibility continue to present problems in the use of electronic mail (Trudell et al. 1984, pp. 21-23). Additional benefits of electronic communication include the extension of the potential work day since electronic mail can virtually be sent and received any hour of the day; the use of more succinct, written communications which take advantage of the fact that people read about six times faster than they can talk; and the decrease in interruptions by incoming telephone calls (Howitt & Weinberger 1984, pp. 89-90). The classic benefit of electronic mail, however, is the elimination of "telephone tag" and the frustration of not being able to reach the person you need to talk to.

A search of the current literature reveals a substantial body of works on electronic mail applications in libraries. Many of these applications deal with the use of an electronic bulletin board system. Bulletin boards allow users to post messages and receive answers from other users. Libraries are beginning to develop and support bulletin boards for communication with their patrons. The partnership of electronic messaging—particularly bulletin boards—with local online systems is also an area of recent growth and development. Local online systems which contain an electronic mail component or which can connect with a campus computer center are also emerging as a means for electronic communication between libraries and patrons especially in academic communities. The focus of this article, however, will be on the use of nationally available, externally hosted electronic mail services which can be accessed and used by a broad spectrum of libraries. Therefore, extensive, well-developed local library electronic mail and bulletin boards such as Maggie III (Dowlin et al. 1986, pp. 7-21) or the Delaware County Library System in Pennsylvania (Belanger 1988, pp. 24-27) will not be discussed.

Electronic mail has always been a major feature of information utilities such as CompuServe and The Source. The Cooperative Library Agency for Systems and Services (CLASS) has been offering OnTyme II services to libraries and other similar organizations since 1980. CLASS's OnTyme II is probably the first electronic mail system designed and marketed to the library community. More recently, other library-oriented electronic mail services have been introduced—e.g., ALANET from the American Library Association, DIALMAIL from DIALOG Information Services, Inc., and the BRS Information Technologies and ALANET partnership/gateway. The short-lived OCLC LINK service was also conceived as an electronic mail and online vendor gateway service for libraries. It seems that most librarians who wish to communicate with other librarians choose one or more of these systems developed specifically for the library and information community rather than one of the information utilities.

The potential uses of electronic mail in libraries can be divided into two categories: general office or business applications, and library specific applications. Since electronic mail allows the sender to relay a message in his/her own words regardless of the length or complexity and also get a receipt from the system when the message has been read by the recipient, "telephone tag" is greatly restricted. If a telephone conversation is needed, an appointment can be set up via electronic mail.

General correspondence, committee work, draft and final documents for electronic and/or print publishing, announcements, consultation and training, teleconferencing, and calendars are all candidates for electronic mail. Most full function electronic mail systems will allow carbon and blind copies, mass mailing lists, and uploading of lengthy documents prepared on a microcomputer or computer worksta-

tion before signing onto the system. In addition, on some systems the sender can request an immediate reply or have a receipt automatically sent by the system when the recipient reads the message. With these features the sender can track the progress of a message.

Interlibrary loan probably represents the greatest use of electronic mail by librarians. The OCLC ILL subsystem is a dedicated electronic mail system with the potential of connecting some 7000 libraries. OnTyme II and ALANET have developed specific forms and routines to facilitate ILL procedures through their systems.

Electronic acquisition and claims systems are other versions of dedicated electronic mail services. Baker & Taylor, Ingram, and Faxon are examples of book and serial jobbers that now offer their own electronic ordering systems. Some jobbers and publishers also maintain mailboxes on electronic mail systems such as ALANET and DIAL-MAIL and accept orders and/or claims inquiries through these mailboxes. This allows any user of ALANET or DIALMAIL to contact these jobbers without having to subscribe to special dedicated services or to purchase software.

Document delivery is another application for electronic mail in libraries. Orders for reprints from document delivery alternatives such as the University Microfilm International Article Clearinghouse (UMIAC) can be accomplished through electronic means. UMIAC offers at least nine electronic ordering avenues giving the user flexibility and choice of method. Since many requests for reprints and other documents are now generated as a result of online searches, online search services such as Pergamon's ORBIT, BRS, and DIALOG provide that capability as part of their search protocols. Depending on the service, documents can be ordered from database producers or document delivery suppliers like UMIAC or the British Lending Library. Again, these systems can be viewed as dedicated electronic mail services with a specific purpose and user clientele.

Another aspect of electronic document delivery involves the advent of complete text databases, especially complete text journal databases. The growing number of these databases means that the increasing requests for journal articles can be met without going through ILL or other third party document delivery options. An online searcher can identify and download pertinent documents immediately, eliminating any waiting period for delivery. The downloaded document can then be sent electronically to the requester's mailbox on any electronic mail system. The introduction of DIALOG's DIALMAIL has reduced the steps in this procedure since the results of any search can be printed via DIALMAIL and then forwarded to any DIALMAIL mailbox. It is anticipated that the BRS/ALANET venture will also allow forwarding of search results to any ALANET user.

The transmission of reference requests and answers is a fourth electronic mail application for libraries. Much of the activity in this area

is on local library systems and bulletin boards. However, ALANET is one system which maintains a public bulletin board for hard to answer reference questions received by ALA. The nine Area Library Service Areas (ALSAs) in Indiana have referrals of reference questions from their member libraries as part of their mission. An ALSA can receive and transmit reference questions from its member libraries, other ALSAs, the Indiana State Library, and other research libraries in the state and nationally over ALANET. Librarians are also able to send specific requests for reference help to a distant subject specialist or library which could help with a reference question.

As noted earlier, ILL is probably the most recognized and used application of electronic mail in libraries. Other applications seem to be used as needed by groups of users with special needs. For example, committees within ALA's Reference and Adult Services Division, in particular the Machine-Assisted Reference Section (MARS) and the Library and Technology Association of ALA, have made extensive use of ALANET. Project INSITE, a partnership grant from the National Science Foundation involving eight Indiana school districts, the Indiana Cooperative Library Services Authority, the Indianapolis Children's Museum, Purdue University, Ball State University, Eli Lilly and Company, and Merrell Dow Research Facilities and DIALOG's CLASSMATE Program, will use DIALMAIL to share results of scientific experiments, conduct surveys, consult scientists in the field, and communicate with other CLASSMATE users. (The grant proposal was prepared and submitted to the National Science Foundation by Mike Rush and Peggy Buchanan, Project INSITE, Eagle-Union School District, Zionsville, IN. A copy of the proposal is available from the author.)

In addition to these functional uses of electronic mail, Buckland (1987) identifies four groups which could be reached via electronic mail in the library. The groups are librarian to librarian, librarian to patron, patron to librarian, and patron to patron (p. 267). In externally hosted electronic mail systems, the first three groups can still exist and interact within the framework of the library. However, the fourth group, patron to patron, could operate independently of the library. One benefit of local system bulletin boards and electronic mail systems is the inclusion of patron to patron communication within the realm and focus of the library. It becomes another public service of the library.

Other examples of electronic mail use can be identified, in particular, individual librarians who, because of their job responsibilities or apparent personal desire and dedication, use electronic mail as a routine communication method. This group includes bulletin board operators, authors and/or editors, network consultants, information brokers, and other librarians who have become enthusiasts of electronic mail. However, the typical librarian seems not to employ electronic communication in his/her daily work. What barriers exist which seem to prevent the general routine use of electronic mail?

Cisler did an informal survey of five librarians who are known users of electronic mail systems. In fact the survey was conducted via electronic mail systems. His question about the obstacles to electronic mail usage got the following responses:

- lack of equipment and lack of easy access to existing equipment;
- lack of understanding of electronic mail applications as compared to the telephone and regular mail;
- lack of time to overcome the initial learning curve required to use a system;
- lack of time, understanding, or interest to integrate electronic mail as a daily activity;
- cost is perceived as high;
- people are not accustomed to paying to receive regular mail so do not understand costs of electronic mail;
- availability of telefacsimile;
- first-time experience was bad;
- local telephone problems and costs;
- lack of other electronic mail users to communicate with;
- old habits are hard to break;
- and they “don’t communicate with anybody anyway” (“Electronic Mail Survey” 1987, pp. 4-6)!

This extensive list can be rephrased into several basic reasons for the nonuse of electronic mail by libraries and librarians.

Connectivity is a current buzzword in the computer industry. It refers to how various computer systems can interact with each other. Connectivity is important in electronic mail since each service runs on its own host computer system and serves those who have access to that computer. Therefore, to gain access to ALANET, OnTyme II, and DIALMAIL, a user would need to contract with each system separately. Some enterprising users have, therefore, learned to download messages from one system and then upload them on a different system in order to share information among all their correspondents. This is at best a cumbersome and a time-consuming method.

In addition to effectively separating users into groups by system used, signing multiple contracts leads to the obvious disadvantage of having to check multiple mailboxes on multiple systems. Connecting or linking systems seems to be the obvious answer. Services like ALANET and OCLC’s I-MAIL, which is available for communication between OCLC and the regional networks which support OCLC services, are subsystems of DIALCOM, Inc. Users of these subsystems have built in connectivity since all DIALCOM computers link to each other. Linking local systems to one another or to a national external electronic mail system is desirable for greater convenience. BITNET and ARPANET, which permit the forwarding of electronic mail from one local system to another, are also examples of linking systems (Buckland 1987, p. 268).

Second, use of electronic mail seems to require a critical mass—i.e., a large enough number of existing users to convince new ones to use electronic mail. ILL users, on the other hand, apparently have that necessary critical mass. Both the OCLC ILL subset and other electronic mail systems such as ALANET and OnTyme II are well-established ILL conduits. The use of ALANET and OnTyme II by medical libraries for ILL has only strengthened their position in the ILL arena. For individual librarians wishing to use electronic mail for applications such as correspondence, committee work, or reference referral, the task becomes one of identifying other librarians who use or would like to use electronic mail. Fortunately, most electronic mail systems offer at least an online directory of users if not a printed list. A printed directory of users can be useful in selecting an electronic mail system.

A companion to critical mass is need. Librarians must have a purpose or reason to log on to an electronic mail service. ILL librarians and groups such as the MARS committees noted earlier have a need and purpose built into their missions. Some novice users are disappointed when they log on to an electronic mail service and have no mail waiting, not realizing that the way to receive mail is to send mail and create a user base. Unfortunately, education about what electronic mail is and what needs it can meet and how is usually not provided except as part of marketing efforts.

Critical mass apparently cannot be assumed. BRS's joint venture with MCI in 1984 gave access to MCI mail to all BRS users. The joint venture was not continued past the first year. The OCLC LINK service allowed OCLC users to not only communicate electronically but to gateway to online search services. The OCLC LINK service was discontinued in April 1988 due in part evidently to the lack of use. Both BRS and OCLC seemingly had built in critical masses of users.

The lack of use of BRS/MCI and the OCLC LINK service may also be attributed to complexity of the system and the degree of difficulty to manipulate the system. Just as most electronic mail systems are billed as "user friendly" and easy to learn and use, so were BRS/MCI and the OCLC LINK service. However, perhaps these systems contained too many levels of menus for straightforward use. (The author had the opportunity to use and evaluate both the BRS/MCI and the OCLC LINK service while they were available.)

Even with "user friendly" systems, there is still a learning curve involved as the respondents to Cisler's survey noted. The ease of use of the systems varies. For example, OnTyme II can be particularly disconcerting to novice users since it has no user prompt. The cursor simply rests in the far left position until the user types a command. Once learned, however, OnTyme II's commands can be simple to use. Training on systems is occasional at best. ALANET, DIALMAIL, and CLASS, on behalf of OnTyme II, do offer some training sessions, usually at regional sites or attached to national conferences. There is

usually a cost for these sessions. Online help and tutorials are also available on many systems, but the user usually must pay the regular online connect rate to use this kind of training.

Costs are a major factor in the nonuse of electronic mail and involve not only the ongoing costs incurred each time an electronic mail service is used but also equipment and service overhead costs. The current BRS messages (MSGs) system and DIALOG's DIALMAIL service are available to all BRS and DIALOG password users respectively. Therefore, it seems reasonable that all BRS and DIALOG users would be using electronic mail. However, online searchers who often have the need and desire to use electronic mail may not have the budgetary authority to do so. Libraries which currently offer online searching on a fee basis may not have "permission" to use electronic mail services unless a fee can be assessed. Even libraries which support online search services may not have a budget to cover electronic mail. Since most online searchers in libraries are still in the reference department, this condition will effectively limit the use of electronic mail for reference applications. ILL budgets usually include online access, again supporting that application for electronic mail.

Online searchers will have the needed equipment even if they cannot access electronic mail. Such is not necessarily the case in other library departments including the library administration. Librarians with budget authority—administrators and middle managers—may not have the equipment or password to access electronic mail systems. They may also not be aware of the opportunities of electronic mail.

Some libraries are still equipment poor, with modems operating at 300 baud when 1200 or 2400 baud is now considered standard. Other libraries still lack modems for their microcomputers or have other dial-up access equipment. Therefore the cost of upgrading or obtaining equipment remains a roadblock for some libraries.

Start-up costs for electronic mail services can include training, documentation, and monthly minimums of usage. More importantly, the perceived costs of future electronic mail use may hinder initiation or extension of the service. Telecommunications costs are often seen as much higher than other forms of communications such as the postage stamp. However, perceptions of electronic mail costs can be countered by the real costs of time and processing added to the postage fees. That cost has been placed at \$12 for a business letter. The Bibliographic Center for Research (BCR) has projected that if 50 percent of the current paper communication was on electronic mail, they could pay for the total electronic mail use of its member libraries (Zuck 1988, p. 10).

Another related cost of electronic mail is telecommunications to the host system. Most of the electronic mail services are available through at least one national telecommunication value added network (VAN) such as TELENET or TYMNET. While VANs can provide a less expensive alternative to access remote computer systems, local access to a VAN is

not universal. Rural and other more isolated libraries will still incur long-distance telephone charges to connect with a VAN. In some cases these long-distance telephone charges might more than double the cost of using electronic mail. As Zuck (1988) observes, "the use of resources drops dramatically when distance and availability become factors" (p. 10).

Finally, there is the factor of the technology used in electronic mail systems. Since some electronic mail systems predate widespread use of the microcomputer, many systems still maintain editing and file storage features. These features can still be useful but will make the cost of using electronic mail more expensive. Recent technological advances have also been reflected by some of the electronic mail systems—i.e., the availability of 2400 baud access; multiple protocols such as XMODEM which can be used to verify character transmission when uploading a file; and ALANET's recent announcement of their DOWNLOAD and UPLOAD commands which are designed to facilitate transmission of files to and from a microcomputer.

There are, however, at least two other technologies which might have an impact on the current and future use of electronic mail in libraries—voice mail and telefacsimile. Voice mail technology translates verbal messages received over the telephone into digital form and stores them in a computer. The recipient can then retrieve messages at a subsequent time, precluding the need for "telephone tag." Voice mail typically provides some features similar to electronic mail in that messages can be annotated or edited and forwarded to other voice mail users, stored for future use, and sent to several users at one time. Since voice mail systems are usually purchased, they need to be integrated into daily work flow to be productive and cost efficient for libraries (Koelker 1988, p. 50). Also, since voice mail is usually considered an in-house system, electronic transmission of information is one way. The caller into the system uses a telephone. To send a response to a message, the voice mail recipient must still use the telephone, conventional mail, or other electronic means.

Telefacsimile (FAX) is a technology that has recently gone through a resurgence. Advancements in the quality, cost reduction, and standardization of equipment and transmission protocols, and relative ease of use account for part of this resurgence. FAX also couples electronic transmission with paper communication, producing an immediate paper end product which does not need further manipulation into a final form. In addition, FAX can faithfully reproduce graphics, signatures, and illustrations. FAX has been used in libraries for document delivery and ILL, as a means of distributing surveys and their answers, to transmit draft documents for comments, and to send signed contracts and agreements. Some librarians feel more comfortable with FAX's seemingly easier technology which can be programmed to automatically send and receive documents. FAX does require that the sender and the receiver have compatible equipment which is ready to send or

receive as appropriate for the situation. This can require some telephone communication between the two parties. In addition, FAX can only send to one receiver at a time. Given that electronic mail, voice mail, and FAX all have advantages and disadvantages, all three technologies can easily coexist and give librarians choices for electronic communication.

Electronic mail is growing, albeit slowly. OnTyme II reports that they have 759 subscriptions (Champany 1988, p. 16). A quick scan of ALANET's printed directory indicates that about 2,000 ID numbers are in current use. This represents about 600 subscriptions since many subscriptions have multiple IDs. Likewise, an investigation of DIALMAIL's online registration procedure showed that more than 31,000 mailboxes were registered on DIALMAIL. A realistic estimate of the number of electronic mail users among INCOLSA's 200 members is probably 20 percent. This estimate ignores users of OCLC's ILL subsystem and in-house electronic mail systems. BCR also estimates that less than 20 percent of their 350 members are electronic mail users. However, it must be remembered that "the availability of use is not a measure of the extent of use" of electronic mail systems (Zuck 1988, p. 10).

However, effective and efficient use of electronic mail and continued growth may be contingent upon the degree to which librarians are willing to invest in education, planning, and training. Planning should be based on education about the capabilities of electronic mail, existing types of systems and their connectivity, and the role of local library systems in electronic mail. Training is needed as with any other automated service. Librarians need to be encouraged to explore the possibilities of electronic mail in order to introduce its capabilities into library routines. The future of electronic mail in libraries may rest in the way it is perceived by librarians. Electronic mail should not be viewed as an added option but should be treated as a routine option for library communications.

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