DOCUMENT RESUME

ED 328 257 IR 053 414

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TITLE The Authoritative Guide to the Use of Telefacsimile in Libraries. Second Edition. Occasional Paper Series 3, No. 1.
INSTITUTION Ohio State Library, Columbus.
PUB DATE Jul 90
NOTE 31p.; For the first edition, see ED 314 065.
PUB TYPE Guides - Non-Classroom Use (055) -- Viewpoints (120)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Costs; *Electronic Equipment; *Facsimile Transmission; Guidelines; Library Automation; Library Expenditures; *Library Materials; *Library Services; Policy Formation; *Telecommunications

ABSTRACT

Addressing both positive and negative issues associated with adapting telefacsimile technology to meet library service needs, this guide provides basic information about the technology while illustrating how librarians have begun to incorporate it into their work processes. The following topics are covered: (1) the definition of telefacsimile and its history; (2) a history of telefacsimile use in libraries; (3) technological changes; (4) telefacsimile applications in libraries (interlibrary loans, branch communications, and reference services); (5) electronic mail and telefacsimile; (6) what to look for when purchasing equipment (vendors, "bells and whistles," plain paper units, and maintenance agreements); (7) telecommunication costs; (8) current policies for telefacsimile use in libraries; (9) "junk fax" mail; and (10) telefacsimile's future. Three appendixes provide definitions of terms, the names and telephone numbers of telefacsimile equipment manufacturers, and suggested guidelines for library use of telefacsimile. (9 references) (MAB)

Occasional Paper

The Authoritative Guide to The Use of Telefacsimile in Libraries

The State Library of Ohio

Series 3, No. 1, July 1990

The Authoritative Guide to The Use of Telefacsimile in Libraries

July 1990

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Table of Contents

Introduction

Since original publication of this paper in October 1988, libraries' use of and reliance on telefacsimile technology has mushroomed. This is evident by the overwhelming response this paper has received from the library community and by the precipitous increase in the number of telefacsimile units installed in libraries throughout the country and the state of Ohio.

In 1988, The State Library of Ohio published its first edition of The Telefacsimile Directory of Ohio Libraries. The purpose of this directory was to provide Ohio librarians with a single source listing of telefacsimile sites as a means to promote and improve access to, and to enhance the subsequent delivery of, time sensitive library resources. Listings in this directory increased by eighty-seven percent between publication of the first edition in 1988 and the second edition in 1990. This dramatic increase clearly shows the formidable acceptance the technology has experienced by both librarians and library users within the state of Ohio.

At the same time, the technology itself has changed, resulting in a greater choice of quality products at reduced prices.

Because of the changing technology and the rapid increase in its acceptance among librarians, The State Library of Ohio felt it was necessary to revise The Authoritative Guide to the Use of Telefacsimile in Libraries. This paper, like the first edition, attempts to address both positive and negative issues associated with adapting telefacsimile technology to meet library service needs. It provides basic information about the technology while illustrating how librarians have begun to incorporate it into their work processes.

Definition of Telefacsimile

In its 1983 publication, Guide to Electronic Facsimile Systems, The National Institute of Justice (NIJ) defines facsimile machines as machines that "transmit the image of a document, such as a text, drawing, or photograph, to a remote location where it is received and printed by other facsimile machines, usually using special paper." (p. vi)

The prefix 'tele' has Latin and Greek origins meaning far off, at a distance. Thus the word telefacsimile incorporates NIJ's definition with the added connotation, from a distance.

Edwin S. Grosvenor, in his HYATT Magazine (1989) article, provides an interesting, non-technical description of how telefacsimile machines send and receive messages:

> Fax machines do their magic by scanning the original document line by line and changing the graphic image to electronic signals using a process known as digitalizing. These signals are then compressed and sent through regular telephone lines. The receiving fax answers with a highpitched tone. The two machines connect with a "handshake" and determine transmission speed. The receiving fax converts the signal into printer commands and reproduces an exact facsimile of the original document, usually on special thermal paper. (p.49-50)

Some facsimile units use FM radio frequencies to send and receive transmissions, while others - such as the majority of today's digital facsimile units - use standard voice-grade telephone lines. The technology used to create the facsimile image is similar to the technology used in making photocopies. Because of this, today's major vendors of photocopy machines are also the major vendors of fax machines.

History

Early experimentation with facsimile technology originated in Europe during the mid 1800s and is the oldest form of office automation technology. Although these early devices proved to be of little practical value, they did forge the foundation for future experimentation and development. (Costigan, 1970)

The first commercial facsimile network was developed by Dr. Arthur Korn in 1910. This network linked Berlin with London and Paris. By 1920, Dr. Korn had expanded his European network and on June 11, 1922 he successfully transmitted a picture of Pope Pius XI from Rome to Bar Harbor, Maine. The photograph was published on that same day in the New York World. (Costigan, 1970)

Interest in facsimile applications in the United States progressed slowly during the 1930s and 40s. The leading manufacturers of that era were the American Telephone and Telegraph Company, RCA, and Western Union. Each company independently developed its own system, but incompatible standards prevented transmissions from one system to another. (Costigan, 1970) Primary applications included transmission of news photographs and the transmission of weather data to ships at sea.

There was little change in the technology, or in the use of the technology, between 1940 and 1960. During that time, the primary use of facsimile equipment continued to be the transmission of news photographs. The equipment was extensive in size and expensive to purchase and operate.

In 1963, the industry developed a facsimile device that would transmit analog waveforms through standard telephone lines.

By the mid-1960s, compact desk-top units were available and the industry began expanding its markets to include small businesses and offices, governmental agencies, financial institutions and libraries.

A Short History of Telefacsimile Use in Libraries

According to a Library Hi Tech (1987) article written by Richard Boss and Hal Espo:

> Librarians began experimenting with the technology in the 1960s, using it mainly for the rapid transfer of interlibrary loan requests and brief journal articles. The early experiments used analog machines that required four to six minutes to transmit a page of text. Most reactions to this process were negative. Telefacsimile was considered to be inadequate not only because of the slow transmission rate, but also because the equipment was expensive and unreliable, produced copies of low quality, and was not serviced by its manufacturers. The apparent absence of a real demand for rapid access to library materials was another reason not to buy facsimile in the early years. (p. 33)

Because of the many pitfalls cited by Boss and Espo, early telefacsimile use in libraries was mostly confined to the sending of interlibrary loan requests. More standard methods of document delivery, such as U.S. Mail and courier services, were used for transporting the hard-copy document.

One of the first experiments to use telefacsimile as a library document delivery tool was the Telefax Library Information Network (TALINET) Project. This 1978-79 project linked together remote sites in five western states (Colorado, Kansas, Montana, Wyoming, and South Dakota). The project ended after only six months of operation, during which time 958 requests were processed. (Boss and Espo, p.34)

TALINET Project evaluators reported that "only 28 percent of the requests were 'time-crucial,'... and that materials frequently remained at the libraries for extended periods after the patrons were notified of their availability." Nonetheless, the report concluded that "the technology was suitable for libraries." (Boss and Espo, p.34)

Even though the TALINET Project approved telefacsimile for use in libraries, librarians still expressed strong negative opinions of the technology. Also, it was still an expensive form of document delivery which made it cost prohibitive for libraries with limited budgetary resources. These perceptions continued to impede the advancement of the technology into the library community until the mid-1980s.

Technological Changes

In 1981, high-speed digital telefacsimile units became available. Digital fax machines provide higher copy resolution and a much faster transmission speed. A letter size page that takes between three to six minutes to transmit using an analog unit, can be transmitted on a digital unit in twenty to forty seconds. Digital units offer the added advantage of programmable system controls, designed to aid the user and assist in automating the process. All of these features are easy to use, requiring minimal staff training. More detailed information about equipment features and options is provided later in this paper.

Telefacsimile Applications in Libraries

Librarians are currently utilizing telefacsimile technology in variety of applications. Most of these applications provide a direct patron service benefit.

Interlibrary Loans

The most widely used library application of telefacsimile is for the processing of interlibrary loans (ILLs). Studies indicate that fax is an advantageous mechanism for document delivery of ILLs to end-users. Some studies used telefacsimile for the sending of selective ILLs only, while other studies, such as HEALTHFAX, made use of the technology for all filled interlibrary loan photocopy requests.

HEALTHFAX was a one year pilot project, sponsored by The State Library of Ohio, to study the feasibility of using telefacsimile technology to access biomedical, health-related information among multi-type libraries. It was funded by a Library Services and Construction Act (LSCA), Title III grant. During the project, all health-related requests from participating libraries were sent via a seventeen station fax network. Participants included academic, hospital, institution, special and public libraries.

LSCA support of the network ended on June 30, 1987. Upon conclusion of the project, an evaluation was conducted by an outside observer. One observation made by this evaluator, based upon survey results of participants, was that telefacsimile should not be used as a full document delivery device for all ILLs. (May, 1987, p. 18) During the project, 3,643 requests and 36,049 pages were transmitted via the network and proved to be a formidable work load for participating libraries. Survey responses indicate that telefacsimile should be used for rush and urgent (patient care) requests only.

Branch Communications

Large metropolitan library systems have discovered that telefacsimile is an effective communication link between branch libraries and the system's main or central library. By using telefacsimile, a branch librarian can request from the main library information which is unavailable at the branch. These information requests are normally in the form of reference questions or are requests for photocopies from specific journals. Today's "high tech" library makes it easy for the branch librarian to quickly determine system holdings and locations, and initiate a request via telefacsimile.

Studies indicate that patron satisfaction with this type of service is high. Patrons are impressed by the speed of the service, the quality of the received copy and the fact that they are not required to go to another location to access resources.

In 1982 the Denver Public Library system used telefacsimile technology as a cost effective measure in dealing with significant budget cuts and staff reductions. During that time, reference services were discontinued at the branch libraries and consolidated at the five main branches and the central library. After determining that the requested information was unavailable at the branch library, the branch librarian transmitted the request to one of the five main branches or to the central library. Responses were faxed back to the requesting branch library, usually within minutes. The first three pages were free of charge. After the initial three pages, patrons were charged fifty cents per page. (McQueen & Boss, p. 31-33)

In Ohio, the Public Library of Dayton and Montgomery County and The Columbus Metropolitan Library established telefacsimile networks in late 1987. These two networks were not created because of budget cuts, but rather, to improve the abilities of branch librarians to provide timely responses for information not available at the branch location.

In addition to the use of telefacsimile to enhance branch services, CML is providing telefacsimile services to Columbus area companies with a CML Corporate Library Card. This service is available for use by any governmental agency, Columbus based

corporation, or state legislator. Responses are faxed directly to the company's office, or to one of CML's branches for pickup. Currently, patrons are charged 25 cents per page, with a limit of 25 telefaxed pages per request. A $3.00 service fee is also added to each request. (These fees may by subject to change.)

Ohio's telefacsimile network rapidly expanded from 1987 through 1989. This expansion was due, in part, to the awarding of numerous Library Services and Construction Act, Title III, grants by The State Library Board of Ohio. Over one hundred new sites have been installed within Ohio with the awarding of these grants, linking public, academic, special and technical school libraries.

Reference Services

Many libraries operating within local networks or consortia refer reference requests to the appropriate resource library by making a telephone call. This process allows the librarian at the resource library to conduct a reference interview to ascertain pertinent information needed to fill the request. While this is a proven technique, it can be further enhanced by fax technology.

Reference requests can be referred to the appropriate resource library by fax, or the resource library can use fax as a document delivery device to speed the answer directly to the requesting library.

One objective of the Ohio HEALTHFAX project was to study the need for providing health-related reference services to non-health care providers. Of the 113 questions processed through the network, fifty-four percent were from adult lay persons and three percent were from students.

At the conclusion of the project participants were surveyed to determine their satisfaction with the service. Respondents overwhelmingly indicated that they would like to continue to use telefacsimile to refer reference questions to medical resource libraries.

Electronic Mail and Telefacsimile

The decision to use electronic mail or telefacsimile technology is an individual one. Each medium has its advantages and disadvantages and it is ultimately the user who must resolve which medium is best for a particular need.

At The State Library of Ohio, electronic mail usage significantly decreased after the HEALTHFAX telefacsimile network became operational. Other HEALTHFAX participants noted similar decreases in electronic mail usage and one institution even canceled its subscription to an electronic mail service.

There are several disadvantages to electronic mail, which may in part explain this. The primary disadvantage is that original text must be re-typed or scanned into a microcomputer prior to sending. This process is necessary to convert the characters into a machine readable format so that the computers can communicate (talk) with one another during the transmission process. In addition, the person receiving the electronic mail must remember to check for incoming mail. Otherwise, the message will be placed in an electronic holding pattern -- like a jetliner circling an airport, waiting for permission to land. After the message has been received, it must then be downloaded to a printer when the receiver needs a hard copy of the message.

Sending a document or message by telefacsimile does not require the user to alter or re-key the original form. Pages from bound resources such as books or periodicals must be reproduced prior to faxing, but this is already a standard library practice and so, in effect, no additional work is required. Often the original document can simply be loaded in the telefacsimile unit and sent.

In addition, received telefacsimile copies are visible to anyone in the area; there is no need to remember to check a 'mail box.' While this is an advantage, it also can be viewed as a disadvantage when the received material is of a confidential nature. Electronic mail is advantageous for handling confidential documents since access is restricted by user passwords.

There are many more microcomputers than telefacsimile units in libraries, which creates a larger core of potential electronic mail users; however, according to Eve Davis in the January 1988 issue of American Libraries, "Industry experts predict... (that) over a million (telefacsimile) machines (will be) in operation by 1992." (p. 63)

This prediction illustrates the rapidity with which telefacsimile has influenced telecommunication networks and markets. While there is still a need for such electronic services as ALANET and Compuserve, the use of fax has had a notable effect on smaller electronic networks, such as The State Library of Ohio's network, SLOLine. Use of SLOLine steadily declined as a direct result of telefacsimile's impact on librarians within Ohio. Consequently, The State Library of Ohio discontinued offering SLOLine.

What To Look For When Purchasing Equipment

Prior to making any commitment to purchase or lease a telefacsimile machine, careful attention and consideration should be given to determine how the equipment will be used. For example, if the intended use is for an occasional transmission of one or two pages of correspondence, then a small, inexpensive desk-top model will suffice. If, on the other hand, it will be used for sending and filling ILLs and usage is expected to be heavy, then a larger, more expensive model with options to aid the user should be considered. Expected usage also will be a determining factor in the number of units needed for the intended operation. If extremely heavy usage is expected, some may want to consider purchasing two units: one for send only and one for receive only.

In general, buying a telefacsimile machine is a lot like buying a car: the prospective buyer must shop around and buy the machine that is best suited to his or her needs. Why buy a truck when a subcompact will do?

Vendors

Telefacsimile units range in price from as low as $700 to as high as $8,000 to $10,000 per unit. As was noted earlier in this paper, today's major vendors of photocopy machines are also the major vendors of telefacsimile machines. Included in this paper as Appendix B is a list of some of the major telefacsimile vendors in the United States. This is not a complete list, but it can be used as a guide for prospective buyers wanting to contact some of the major equipment dealers.

Bells and Whistles

To the novice, talking with a telefacsimile representative about such features and options as secure polling, automatic stepdown, group compatibility and autodialing can instill a feeling of catalepsy. While there are a number of different brands and models on the market, all share common features which should be considered in any installation.

RJ11c Phone Jack: Most of today's digital telefacsimile units transmit and receive data through standard voice-grade telephone lines. The phone line runs from the wall directly to the telefacsimile unit. The line plugs into the wall and the unit by use of the RJ11c phone jack. The RJ11c jack is a plastic modular clip which is a standard telecommunications installation device. Sites with older phone systems may have to consider modifying a telephone line to accommodate this setup. Such a modification is an inexpensive process but it should be done by a qualified telephone company service technician.

Some telefacsimile units require that a separate telephone instrument be connected to the unit for dial purposes; others have a push button telephone key pad built into the unit. Both types operate equally well and do not require additional installation.

Activity Reports: This feature maintains a log of the unit's sending and receiving activity. Most of these logs can be printed in a report format directly from the unit. A typical log will indicate the date and time of the transaction; the telephone number or coded ID of the remote unit; the number of pages transmitted and received; and the amount of time required to complete the transaction.

Automatic Stepdown: This feature allows the unit to slow transmission speed to communicate with older generation telefacsimile units. A unit with CCITT Groups III, II, and I compatibility features (see Appendix A for definition of CCITT Groups) can communicate with any other unit operating on one of these levels.

Automatic Receive: This feature allows the unit to receive documents without human intervention. In order to utilize this feature, the unit must be installed with a dedicated telephone line which cannot be used to receive voice telephone calls. This is a required feature if heavy usage is expected.

Manual Receive: This feature requires that someone answer the telephone and then turn on the unit in order to receive a document. Most units provide a selector switch in order to change the unit between automatic and manual receive.

Automatic Redial: This feature will automatically redial a number (station), after an elapsed period of time if the unit could not transmit a document because the receiving unit was busy. This feature is used in the send mode only.

Autodialing: This feature allows the sender to transmit a document or set of documents using a preprogrammed autodial number or group (see also Dial Directory and Group Dialing). Transmissions may be processed immediately or at a later (delayed) time, such as during evening hours when phone rates are typically reduced. Fax machines made in the mid-1980s used autodial cards for the same purpose. Either way, in order to use this feature the receiving unit must be set to automatic receive.

Automatic Document Feeder: This feature allows the user to send multiple pages during a single transmission. Most manufacturers' specifications indicate a 30 page limit per loading. After the documents have been loaded and the connection to the receiving unit has been made, the machine will automatically feed and send each page one at a time. This feature is used in the send mode only.

Group Dialing: This feature allows the sender to transmit copies of a single or multi-page document to a batch of locations listed in the dial directory, with only one loading of the unit's document feeder. Most units with this capability will first copy the document into memory and then separately dial and transmit, from memory, to each location listed in the group. This is a useful feature for library consortia to use when communicating with other members or for main libraries to communicate with all of their branches.

Polling (Secure and Nonsecure): This feature allows the user to preprogram a unit (the polling unit) to turn on and dial another unit (the receiving unit) to transmit documents from one to the other (from the receiving unit to the polling unit). All telecommunication costs are charged to the polling unit. This feature is useful as a chronicle of telecommunication costs in multi-station networks.

Secure polling means that the polling unit must first send a preprogrammed password to the receiving unit before the receiving unit will release the documents. This is a useful feature for dealing with confidential information, but is ordinarily not needed for library applications.

Contrast & Resolution Controls: These features are like the features found on photocopy machines which allow the user to set up the sending unit to accommodate documents that are light or dark, or printed using a fine, compact type face. This is important when using telefacsimile as a document delivery device for ILLs, since publishers use a variety of different contrasts and type fonts.

Dial Directory: This feature allows the user to record frequently called telephone numbers in the unit's memory. Once programmed, the user can send a document without having to dial the telephone number of the receiving unit. Most units will retain between 50 and 100 telephone numbers. In order to use this feature, the receiving unit must be set to automatic receive.

All of these are common features in today's digital telefacsimile units. Buyers can expect to pay an average of $2,000 for units with these features, although units with group dial and memory are more expensive. The most important consideration

for prospective buyers is to purchase a unit that has features to automate and enhance the intended use. There is no need to purchase a unit with group capability if that feature is not needed for the intended operation. Prospective buyers should shop around and request demonstrations from local representatives. Many times the buyer will find, however, that the only real difference in machines is the purchase price.

Plain Paper Units

Recently, companies began marketing plain paper telefacsimile units. These machines will print received transmissions on ordinary bond photocopy paper, eliminating the need to buy special and expensive thermal paper.

Typically, plain paper machines are more expensive to purchase or lease. The quality of the received copy, however, is superior to those received on thermal paper since most plain paper machines use laser technology to print the incoming document. And, unlike thermal paper copies, plain paper copies will not fade from heat, sunlight or age.

Maintenance Agreements

Maintenance contracts vary with manufacturers. Some companies offer a one year warranty included with the purchase price; others offer 90 days, with an option of purchasing a separate, extended maintenance agreement.

As a general rule, today's digital equipment is reliable and problems, if any, will likely surface during the first ninety days. Often, a sales representative may be willing to negotiate inclusion of a one year free maintenance agreement with the purchase.

Make certain that the company can provide on-site maintenance within 24 hours, or one working day. Most can, but be certain to raise the issue with the sales representative. Also, ask for a list of current users to contact. Call them and ask about the reliability of the equipment and timely response to service calls. Can the dealer provide the quality of service as promised?

Most maintenance contracts include a clause that voids the contract if the owner uses fax paper produced by a company other than the equipment manufacturer. This requires the user to purchase paper directly from the manufacturer, usually at a slightly higher price.

In summary, prospective buyers must keep several things in mind when deciding which telefacsimile unit to purchase. How will the system be used and what features will be needed to take full advantage of the system? How many units will be needed and at what cost per unit? What kind of after sales support can the company provide and at what cost?

Telecommunication Costs

It is difficult to determine exact costs for sending an item via telefacsimile. Speed of transmission, telephone rates and the time of day the information is being sent determine the cost per page ratio, and these factors can vary greatly. For example, one of the major phone companies in Ohio determines its in-state rates based upon the area code the user is calling from, the time of day the call is being made, and the first three digits of the phone number receiving the call. All of these factors affect the cost per minute of sending a document via telefacsimile. Add to this a variety of different telephone companies, each charging different rates, and it becomes clear how unclear it is to estimate communication costs.

The Ohio Biomedical Telefacsimile Project, HEALTHFAX, attempted to reduce telecommunication costs by using delayed transmission of filled ILLs. During the project, each resource library was assigned a specific hour between 11:00pm and 7:00am in which to transmit filled ILLs. In practice, however, this became problematic. Because of the volume of ILL activity (36,049 pages were transmitted during the project), and because of the machines' limitation of 30 pages per unattended transmission, it was not possible to set up the units to send all ILLs at one time. Analysis of project data, however, indicated an approximate cost of 35 cents per transmitted page.

Suggested Guidelines

Standard interlibrary loan codes, such as the ones produced by the American Library Association (ALA) and the Ohio Library Association (OLA), do not provide guidelines, procedures or protocol for the use of telefacsimile as a document delivery device. Instead, guidelines have been developed by individual institutions or networks utilizing the technology, and these guidelines differ according to network structure and need. For example, some libraries will not accept ILL requests via fax, while others will accept only rush requests. Still others will accept any ILL request via fax. Some libraries charge an additional fee to fill an ILL fax request, while others charge no fees. Consequently, series of telefacsimile networks have developed which do not actively interact with one another. Rather, telefacsimile activity tends to be confined to a known group, area or network with which the librarian feels comfortable. Because of the uncertainties of telefacsimile policies outside of a "known" area, many librarians may be somewhat reluctant to engage in internetwork faxing. This dilemma is inherent in the entire ILL process, but is more exaggerated with telefacsimile because of the lack of standardized guidelines for use.

Included with this paper as Appendix C are suggested guidelines to use telefacsimile as a viable interlibrary loan document delivery device. These guidelines were adapted from the HEALTHFAX guidelines, which were developed by various librarians involved in the project. Although the HEALTHFAX project dealt only with biomedical, health-related requests, the guidelines are easily modified to include other types of information requests.

'Junk Fax' Mail

'Junk Fax' is an electronic form of junk mail and a lucrative market for direct-mail entrepreneurs. According to Representative Ken Jacobsen of Seattle, Washington, in a Lexington Herald-Leader (1989) article, 'Junk Fax' is the "ultimate in abusive use of a private communication system...You get a message you didn't want from people you don't know on paper they didn't buy." (cited in Marshall)

Primarily, 'Junk Fax' has been confined to the large metropolitan areas of the country where the concentration of telefacsimile installations is the greatest.

But what can be done to limit exposure to unsolicited, unwanted fax transmissions? In The Book of Fax (1990), Fishman and King suggest two ways to lessen vulnerability to 'Junk Fax' mail.

First, "safeguard your fax number." (p 105) This means that one must carefully consider which fax directories, if any, a telefacsimile number should be listed in. In general, the likelihood of receiving 'Junk Fax' solicitations increases each time a number is listed in a fax directory.

Marketers of 'Junk Fax' mail services often offer free gifts or incentives for providing lists of other fax numbers. When this happens, remember the Golden Rule of Faxing: Safeguard thy neighbors' fax number as thou would safeguard thy own.

Fishman and King also suggest calling the company sending the fax solicitation to request removal from their mailing list. "Reasonable companies will comply" with such a request. "After all, they want your business, not your wrath." (p 105)

A number of state legislatures have either recently enacted or are currently considering laws regulating unsolicited 'Junk Fax' mail. In addition, the Federal Communication Commission (FCC) is studying the issue. But until these laws are enacted across the board, 'Junk Fax' will continue to be the profane progeny of telefacsimile.

Telefacsimile's Future

Telefacsimile technology continues to improve. Recently, Group IV equipment became available. Group IV units transmit at a faster speed (less than five seconds per page) and produce a better quality copy. However, Group IV units do not use standard voice grade telephone lines. Rather, transmissions are sent through an Integrated Services Digital Network (ISDN), which is available in limited areas only. Ruby May (1987) expects that Group IV units will not be a viable option for libraries simply because of the high costs associated with connecting to a digital network.

Specially designed microcomputer software and modems now make it possible to link microcomputers with telefacsimile machines to send or receive documents. This equipment scans, reads, converts and transmits or receives data to or from any digital telefacsimile unit. The cost of this equipment ranges from $500 to $2,000. Currently, this technology is not widely used in libraries.

Communications technology is changing so rapidly that it is difficult to predict with any certainty the role telefacsimile will play in libraries of the future. Will fax technology continue to expand and merge with other technologies, or will it be replaced by a better communications medium? Whatever the outcome may be librarians will surely find ways to use the technology to strengthen and improve library services.

APPENDIX A Definition of Terms

Analog Transmissions:

The process by which the image of a document is transmitted using a continuous, electrical scanning impulse. This process typically takes between three and six minutes to transmit a single page of text.

Digital Transmissions:

The process by which the image of a document is transmitted using a noncontinuous electrical pulse, which compacts a line of text into a series of ones and zeroes. Because it uses a noncontinuous signal, it can transmit an image more quickly than an analog unit, which must use a continuous electrical waveform. Digital transmissions typically take one minute or less to transmit a single page of text.

Facsimile:

The process of transmitting an image of a document from one location to another, where a copy (facsimile) is then received and printed by machine.

Group Compatibility:

Protocols devised to establish compatibility standards of communications equipment developed by different manufacturers. These standards were created by the Consultative Committee for International Telephone and Telegraph (CCITT). The committee is comprised of representatives from member countries of the United Nations.

Group I standards include facsimile units that transmit and receive at four or six minutes per page.

Group II standards include facsimile units that transmit and receive at two or three minutes per page.

Group III standards include facsimile units that transmit and receive at one minute or less per page.

Group IV standards include facsimile units that transmit and receive at less than five seconds per page using digital transmission networks.

APPENDIX B Facsimile Equipment Manufacturers

AT&T Facsimile Equipment	1-800-247-7000
Burroughs Corporation	1-800-621-2020
Canon Facsimiles	1-800-652-2666
Konica Facsimile Equipment	614-766-7800
Lanier World Wide	1-800-538-6789
NEC America INC	1-800-782-7329
Omnifax-Telautograph Facsimile	216-267-4557
Panasonic Telecommunication Systems	1-800-645-7486
Pitney Bowes Facsimile Systems	1-800-672-6937
Ricoh	216-831-4790
Sharp	1-800-522-2679
Teleautograph	1-800-225-6664
Xerox Telecopier Facsimile Equipment	1-800-832-6979

Note: Inclusion in this list should not be considered a recommendation by the State Library of Ohio. This list is not meant to be all inclusive. All 1-800 numbers may be called from Ohio. 1-800 numbers may vary in other states.

APPENDIX C Suggested Guidelines for Use

Access

Libraries should first exhaust all local or regional resources through established interlibrary loan channels before referring the request beyond these established channels.

What May Be Requested

Requests for monographs and journal articles may be submitted via FAX, as well as requests for information or reference.

Format For Requesting Materials Via FAX

Requests for monographs and journal articles should be sent on a standard ALA Interlibrary Loan Form. The form should be neatly typed or printed using a dark ink. The word "FAX" should appear at the top of the form.

Requests for information or reference should also be sent on a standard ALA Interlibrary Loan Form. The word "Reference" or "Subject" should appear at the top of the form under the word "FAX." The section "Verified In" should contain a list of sources already checked. Also indicate the name and phone number of a contact person within the borrowing library. This is necessary information should the lending library need to conduct a reference interview.

Internal forms may be used to send requests providing that these forms are similar in size and format to the ALA forms, and with the prior consent of the lending library.

Also include on all FAX requests the date and time the request is being sent, the telefacsimile phone number of the requesting library, and the time frame in which a response is expected (4 hours, one day, etc.).

Charges

It is the responsibility of the borrowing library to clearly indicate on the form the maximum amount they are willing to pay for the requested item.

Bibliographic Data Elements

Requests for journal articles should contain:

Periodical title, volume and date
Author and title of article, and pagination
A copyright compliance statement must also be included

Requests for books should contain:

Author, title and publication date

Reference requests should contain as much specific information as possible, including a listing of sources already checked.

Length of Articles

Information supplied via FAX should be limited to 30 pages. Articles exceeding this limit should be sent via UPS or U.S. Mail. This limit should not apply to priority requests.

The lending library should notify the borrowing library, via FAX, that the requested information is not available or that the information is being sent via some other channel.

Priority Requests

RUSH requests are at the discretion of the borrowing library.

The word "RUSH" should appear at the top of the form under the word "FAX." Also, include the name and telephone number of a contact person at the borrowing library in case the lending library has questions about the request.

It is not unreasonable to expect the lending library to respond with either the requested information or a status report within four hours.

URGENT requests are of an emergency nature. Usually these are health-related, patient care requests from health professionals.

The word "URGENT" should appear at the top of the form under the word "FAX." Also, include the name and telephone number of the patron requestor in case the lending library has any questions about the request.

The borrowing library should first call the lending library to alert the potential lender that an URGENT request has been or is being sent.

The lending library should respond with either the requested information or a status report within one hour.

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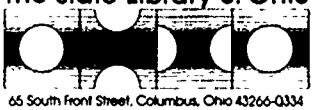

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Total copies printed 2,100
Unit cost $ 4216
Publication date 8/90