

Section 4.

Computers, Telecommunication and the Internet

The Computer: A Management Tool

In many ways, today's libraries bear little resemblance to those places that many of us remember from our childhood, where we discovered *The Little House on the Prairie* or the *Hardy Boys* mysteries, or where we found materials for school papers. There are a host of new technologies that have already revolutionized and continue to change the ways libraries and information centers function. Most of these changes are based upon some kind of computer application.

Computerized systems are today commonly used to develop and manage library collections. By way of example:

- * When the mail is delivered with new issues of newsletters and journals, they are checked-in on the computerized database.
- * New books become a part of the database when they are ordered and their status is updated on arrival.
- * The librarian verifies new book information on the in-house database, perhaps with assistance from an on-line library catalog at a distant site. A classification number and subjects are assigned. The book record then becomes a part of the center's computerized catalog.
- * A book is processed with labels and library stamps and is then ready for circulation managed by the library's computerized circulation system.
- * To respond to user requests the librarian again turns to the computer to search the database.
- * Overdue notices are produced by the computer along with a list of those to whom they should go.

It could be said that the very heart of many information centers today is in their computer system.

Selecting a Computer System

Developing a computer system or an in-house database is not a project to be undertaken lightly. There are a number of points to consider. First, find out if there is an existing computer system within the host organization that might be linked to, or at least relate to, the proposed computer for the center.

Next, consider the following steps:

1. Define the range of information that will be entered and how it will be used.

- * Identify a computer capable of handling the data.
- * Select a software program that will handle the needed functions. Will the center use relational databases to allow a title to be typed in when identified and then transferred from an order file, to a processing file, to the center's catalog and possibly its circulation system?
- * Identify users of the database who may include the staff for daily maintenance of technical records and information retrieval, and clients for information retrieval in the center, in the organization, or from their homes.
- * Create or adapt a list of descriptors (controlled vocabulary) to describe the materials.
- * Establish procedures and conventions for entering information into the database.
- * Prepare a written procedural manual to help ensure consistency in entries completed by more than one person.

2. Consult colleagues and consider hiring a consultant.

After defining as precisely as possible what the system ought to be able to do, the director should again talk to colleagues and any computer specialists in the host organization. Unless one's organization includes a person who is experienced in creating databases, the center should consider securing outside expert consultation. The consultant can assist in selecting appropriate hardware and software as well as help build in various "safeguards." and oversee the system startup. Although the director will depend upon a consultant, it is important that s/he understand as much as possible about what the proposed system *will* be able to do and what it will *not* be able to do. Continue the process of talking, reading and refining the requirements for the system until it appears to meet the center's needs.

The consultant should be a person who has had directly relevant experience in planning and developing library systems. S/he should be familiar with library information applications and with running networked microcomputers. The center should plan to work together with the consultant to determine the exact goals of the system and resolve problems. Good communications between the consultant and the center staff are important.

3. Research and select a system.

There are many different computer software programs for library applications. Software can be purchased in “stand-alone” modules ready for immediate use known as “turn-key” systems. The modules can manage circulation, acquisitions or cataloging. A preferable choice is to select software that integrates the entire library system. Integrated software creates what are known as relational databases. This means that once information is typed in about a book on order, the same information will not ever have to be typed in a second time. These integrated systems are able to handle a number of very different tasks. The system accepts information when a book is first ordered, then accepts cataloging and classification information, creates a “shelf list” record and later keeps track of loans and materials overdue. The status of a given item can be identified, whether it is on order, in the collection or out on loan. In addition, searches by author, title, subject, etc. are possible. In effect these systems create a number of inter-related databases which serve multiple purposes. Several examples of computer software for library management are noted at the end of this section.

Before purchase, make arrangements to try the system being considered. Sit down at the keyboard and try entering a few records. Then try searching them. Ask about the availability of start-up and continuing technical support. Don't make any assumptions.

***Setting-Up Procedures
and Conventions***

Having selected a system, the next step is to establish procedures and conventions for entering information into the database(s). Once again, one is well advised to turn to the consultant. In addition, visit a center that has created a database and talk to the director, this time focusing upon the procedures adopted, and the problems encountered.

The importance of developing procedures and conventions is second only to that of choosing an appropriate system and software, and cannot be over-emphasized. For information to be retrievable it must be entered in a *uniform* and *standard* fashion. This is not the place for creativity and free spirits. For example, will full journal names or standardized journal abbreviations be used? Will dates which include a month and day be abbreviated and if so, using what format? For authors, will last name, full first name and middle initial be used or just last name and initials?

It is important to remember that the quality of the information that one can get *out* of the database is 100% dependent upon the quality of the information that is put in!

Figure 1. Sample Database Entry

<u>Name of Field</u>	<u>Kind of Information Entered</u>
Type of material	Book, Manuscript, Journal Article, Report, Film Audio-tape, etc.
Accession Number	A unique number for each item in the database. Usually includes digits for year accessed, e.g. "00559062599."
<u>For Books</u>	
ISBN #	International Standard Book Number, e.g. 0 8389 3362 9.
Author(s)	Surname followed by full given name of each author, e.g. "Marshall, John E."
Title	Full title, including subtitle
Edition	Edition number, e.g. "2 nd edition."
Publisher	Full name of publisher, e.g. "Neal-Shuman, Publishers, Inc."
Place published	City and state, e.g. "New York, NY."
Pages	Number of pages, e.g. "386."
Date	Year of publication, e.g. "1995."
Descriptors	Selected from a controlled vocabulary of subjects, e.g. alcohol, cocaine, adolescents, prevention, etc.
Classification number	A number assigned by the center to identify the exact location where an item is kept.
Notes	Any additional information

Figure 1 is an example of a very basic database entry for a book. Many databases include much more information such as cost, source, and status — for example: on order, awaiting processing, or completed. This accommodates the technical needs of the center in addition to meeting the searching needs of

the clients and staff.

Similarly, proofreading and verification of information that has been entered into a database is vital. A misspelled author name, an incorrect location, or an inaccurate title may mean that even though the item is physically in the center it cannot be located and is essentially lost.

Beyond adopting rules for entry of data into the records there are a number of other parallel procedures which need attention. How will you know what items have been entered? Something very simple like penciling a check and date on the inside of the front cover might be used to designate this.

The value of a database for retrieving information may be directly related to the skill with which the descriptors were selected. Users depend upon the descriptors to give them complete searches of topics that may be described by a number of synonyms in everyday language. The novice will want guidance in setting up the database so that staff and users can quickly and easily find information in many different ways.

***Public Databases vs.
In-House Databases***

Another issue to think about when developing a computerized database is how much information is enough. Just because something *can* be done, does not mean that it *ought to be* done. For example, the center may think that it “ought” to include in its database each individual article in every journal to which it subscribes. If each journal issue contains 20 articles, the amount of time required for entry increases rapidly. Furthermore, the center may be able to search *public* databases more cost-effectively, rather than create and maintain its own database with that information.

If a center is able to access databases created by others, it can search those databases for articles published in the journals to which the center subscribes. This is a far more economical approach, in terms of time and money, than attempting to duplicate resources that already exist. It is an approach which still allows the center to search for journal articles in its collection so as to respond to specific queries and not be burdened with the expense of entering every article in each issue. The center can choose to run searches at regular intervals on frequently requested subjects. The searches can be downloaded in separate files and/or printed out for convenience.

There are occasions when it is unquestionably wise to create ones' own in-house database. Collecting information beyond books for professionals about alcohol and drug abuse may be one. There are currently a number of databases in the social sciences, medicine, law and elsewhere that contain alcohol and other drug information. Their scopes vary and may not meet the needs of a particular center. If the center finds itself regularly turning to *multiple* public databases for needed information, then it may be useful and cost-effective to create an in-house database. This is most likely to occur when an information

center is asked to obtain information from more than one discipline or to collect information originating from non-standard sources. The center can download or create selected citations for documents in the center and assign selected descriptors to develop an in-house database. A discussion of publicly available databases is presented in *Appendix E*.

Telecommunications

Fax, e-mail, on-line searching, CD-ROMs, discussion groups... All of these are relatively new arrivals on the scene and represent new ways of communicating between sites that are physically separate. In brief, telecommunications and the use of computers allow people both to be in contact *and* to transfer information easily from one site to another. As a result, the library/information center is no longer limited primarily to the materials located within its own walls. It can search catalogs and databases in remote places and download full-text copies of documents from distant machines. Literally, with the arrival of the computer, materials and information world-wide are a potential part of any library.

Cost-Effective Use

With this new access comes the problem of deciding how an information center can use these communications options in a cost-effective manner. In the same way that the pros and cons of an extensive in-house database must be considered, the different ways in which electronic communications can be utilized should be assessed. Will access be limited to staff in order to simplify their work? Or, will the staff offer extensive on-line searches to clients? The center must carefully weigh the full costs of providing on-line search services. The money spent to purchase hardware for on-line database searching and network communications is, in fact, a very small part of the investment that will be required. The training and expenditure of human resources can be costly. Things to think about:

- * Databases of alcohol and drug information available through commercial vendors and large research libraries.
- * Databases of medical, social science and other information available through commercial vendors and large research libraries.
- * Databases on the Internet.
- * Documents that can be downloaded from the Internet.
- * Bulletin boards and mailing lists on the Internet.

The other side of the coin is considering the resources required to use these:

- * Who will conduct the on-line searches?
- * Does that person have previous experience and training?
- * How much time will this person be able to allocate to database searching?
- * Which groups of patrons will be offered this service either without charge or for a fee?
- * To which databases will the information center wish to gain access?

- * To what extent will the information center use publicly available data bases through Internet service providers or large research libraries?

Fast access to comprehensive information sources can make the investment of time and staff in on-line database searching very cost-effective. A trained searcher may find in minutes a set of facts, figures, and bibliographic information that would manually take days or weeks to retrieve — if they could be retrieved at all!

However, the untrained searcher can spend hours or days lost on-line. S/he may eventually identify some relevant information but not in a cost-effective way. Or worse, the untrained searcher may mistakenly conclude that the needed information is not available at all.

The Internet Link

As this *Guide* has been compiled, the Internet has been evolving virtually daily. What was previously viewed as a source of additional information and communications for *some* information centers, is clearly becoming a basic tool of the trade. It will be a necessity for *all* information centers of the 21st century. Not having Internet access will be similar to abandoning the telephone, the photocopy machine, and the postal system.

What is the Internet?

The Internet is a worldwide network of more than 30,000 computer networks that connects more than a million-and-a-half computers of every kind — from super-computers and main frames to the personal computer on your desk. More than 25 million people from over 143 countries now use the Internet. The number of users has reportedly doubled each year for the past few years. The U.S. is still the largest user but international connections are increasing rapidly.

The Internet is truly a network of networks. Two of the many networks that make up the Internet are names which you may see, these are Usenet and Bitnet. Usenet is a network of more than 5000 news groups on which one can partake in fast-moving discussions on as many different topics. Bitnet is a small network comprised of academic and research institutions.

The Internet began in 1969 as a U.S. Defense Department network to link researchers from different sites. In the late 1980s, it was merged with the National Science Foundation network. In late 1994, the NSF Network took the first in a series of steps that would discontinue its support of the Internet within four years. The Internet instead became supported by a joint effort of MCI, Sprintlink, and other telecommunications companies. Government and educational usage continues, but it is already carried out on a system operated by commercial enterprises. The network continues to grow as it becomes increasingly commercialized, but one cannot guess what changes will take

place in the future.

Legislation in 1991 created the National Research and Education Network (NREN) which now oversees the Internet. Additional legislation is in process that will guide the Internet's development. The goal is to create a fiber optic cable network that will link computer users in government, industry, education, publishing, research facilities and libraries. This system has become known as the *National Information Highway* or *Information Superhighway*. Its projected effect on the world has been likened to the economic and sociocultural effects on America of the interstate highway system developed in the 1950's. Those who are already using the Internet regard it's effect on society as not very different from the arrival of the telephone.

A metaphor

For those to whom telecommunications is unfamiliar and a bit daunting, some introductory comments may be helpful. A comparison to telephone communications can be a useful metaphor.

In order to phone someone, both of you need to have telephones, the physical devices. In addition, you both must be connected to a telephone company, over whose lines your voice signal travels. The particular telephone company doesn't matter because the companies have developed systems that connect them all.

With telecommunications, your computer and modem are the counterpart to your telephone which allows you to send and receive messages, or to have access to information on computers at a distant location. The software that is used assures that the computers "speak the same language."

Forms of Telecommunications

There are a variety of different forms of electronic communication – e-mail, electronic discussion groups and bulletin boards, file (document) transfer, and database searching.

E-mail.

This stands for electronic mail. E-mail allows one to send an electronic message or query to a friend or expert. Most of the information centers connected to the Internet have e-mail address to facilitate communications with colleagues. With e-mail, a very small center can keep in touch with the library down the street or with an information center half-way around the world. E-mail combines the accuracy of written mail and the speed of the telephone. Many organizations such as the Special Libraries Association and the staff at the National Clearinghouse for Alcohol and Drug Information use e-mail too.

Listserv.

A listserv is a mailing list on the Internet used by a group of people with similar interests. Anyone can subscribe to a listserv by sending a "subscribe"

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command to the its address. Subsequently any communication sent to the list address is copied and sent to every member of the list. Members can choose to reply to the message and lively discussions can ensue.

Library Catalogs.

The search for information has become infinitely faster and easier as research libraries have made their on-line catalogs available on the Internet. It is possible to search the catalogs of the Library of Congress, the University of Oxford, England, and the New York Public Library within minutes and without moving from the comfort of one's own PC. Beyond that, when searching, there's no need to take notes. The search results can be saved and printed in one document upon completion.

Databases.

This feature allows users to search off-site databases for bibliographic, directory, statistical, or just about any kind of information. As all information professionals know, often the most valuable information appears in journal articles or reports which may not be included in library catalogs. On-line databases have become a primary source of identifying the journal literature.

Bulletin Boards.

These are the devices by which users can post questions and comments. Bulletin boards can be used to get answers to seemingly unanswerable questions from experts about whom you had never heard.

File Transfer.

This feature allows users to download documents and other files from any computer that chooses to make materials available. Software can also be downloaded.

Using Telecommunications

There are three ways in which the use of the Internet can be helpful to an information center. These are briefly described below.

1. Communicating with others.

For many of those who are on the Internet, e-mail has become an important part of their work day. They send much of their "mail" over the net and may receive responses within minutes. E-mail is used by many libraries to request interlibrary loan materials, to identify document sources and locate extra copies of missing periodical issues. E-mail makes it easy to keep in touch with professional colleagues and associations, businesses, and personal friends. It also provides free, non-interactive access to electronic discussion groups and electronic journals.

2. Using computers at other locations.

It is now possible to actually use a computer at an off-site location, in the same way as if you were physically sitting there. This is termed "remote access."

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Telnet is special software used on the Internet that allows one to use a computer at a distant location. Telnet can be used by those *directly* connected to the Internet, but not by those connected through Bitnet or Usenet. Telnet provides interactive access to distant resources that range from on-line library catalogs and databases, which often contain the full text of many documents, to indices of the periodical literature as well as campus and freenet bulletin board systems.

3. Obtaining materials.

FTP, File Transfer Protocol, allows those with a direct Internet connection to copy information that a host computer chooses to make available to others. The information may be bibliographic citations, the text of an entire manuscript or book, images, graphs, tables, or software.

Navigating the “On-Ramp”

If you are just embarking upon the information super-highway, there are several suggestions for the “new driver.” Inasmuch as one has to choose an on-ramp, it is strongly recommended that you choose PREVline, a network that provides ready access to the new telecommunications methods to everyone with an interest in alcohol, tobacco and other drug abuse. Compared to many systems it is very straight-forward. Or, in computer jargon, it is “user friendly.”

PREVline is specifically directed to alcohol, tobacco, and other drug information. Also, it is free and available to the public. For many, it may offer the most immediate and easy access to basic on-line technical features.

After mastering *PREVline*, you will have a bolus of experience to use as you venture out in other directions.

Tips.

If this represents new terrain don't forget there are some other things worth considering. Be sensitive to your own learning style and your level of interest and comfort in approaching new technologies. Take this into account as you learn to use these new communications tools. An example of the importance of this involves the use of VCRs. For some, programming them to automatically record a favorite show is a snap. For others, it's an insurmountable challenge, that has to be left to an expert, even if the expert is one's eight year-old child! Or, there is the middle ground – “I can do it if I *have* to.”

Depending on your own predilections and expertise, finding someone to set up a simple system and train you and staff to use it may be a very sensible and cost-saving approach.

Changes are occurring at such a rapid pace that even for those who are relatively sophisticated, keeping current on new developments, products, and sources of information is a full-time job. The editor of the *Personal Computer* column in the *New York Times* shared his own solution to gaining access to

specialized resources and assistance. He enrolls in one course at a community college each term in order to take advantage of the services provided to students. He gains Internet access. He gains access to the community college consultants who respond to students' questions and help them resolve any problems encountered. He is eligible to enroll in mini-course offerings which provide training. Plus, he receives the array of notices and announcements of new software and hardware new on-line databases and discussion groups which are announced daily on the Internet.

PREVline

PREVline was developed by the center for Substance Abuse Prevention (CSAP). The acronym stands for Prevention On-line. PREVline's basic services are available to everyone. In addition, those who are RADAR Associates or CSAP grantees are offered full access to the Internet.

PREVline can be accessed, using a computer and modem, by dialing a phone number for a direct connection to the CSAP host computer. A second way to access this system is to connect your computer to a host computer in a institution (university or government agency) that is a part of the Internet network. CSAP has made PREVline available through the Internet network. This is one example of the thousands of linkages that constitute the Internet.

The Internet, a web of connections between computers world-wide, is what makes this entire enterprise possible. To return to the telephone analogy, the Internet is equivalent to all of the phone companies in the world and their series of interconnections that allow telephone calls to go from one system to another. Beyond your own personal computer, there is a need to connect to a larger computer which is already a part of the Internet. Many who work in academic institutions or commercial organizations will find that their organization already has an Internet connection. Ask to have your computer connected. Private individuals, or groups within organizations that do not have such connections in place, can gain access to the Internet through a commercial company, which offers this access for a membership fee, or through other focused networks such as PREVline.

Traveling the Super-Highway, via PREVline

Returning to the different forms of telecommunications that can be found on the Internet, let's look at how these are actually used, and how access to these different types of communication can be gained through PREVline.

E-mail.

This is simply a means of sending an electronic message to someone. Just as you require a telephone number, unique to a particular home or office, so you will need an e-mail address to send electronic messages.

There is a set format for telephone numbers: area code, followed by the three

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numbers that represent a particular town, followed by the unique four digits for the individual. As such, there is also a set format for e-mail addresses. Although the format varies on different networks, on the Internet, the largest network, the format follows this pattern: the individual's name followed by an @ symbol, then the name of the host computer followed by a period (.) and a three letter abbreviation which identifies the location of that computer as an academic institution (edu), governmental location (gov), or commercial group (com). There are no spaces in the addresses

PREVline provides registered users with a mail box from which they can send and receive messages.

For example, the address for a university librarian might be

Jane.Doe@Dartmouth.edu

name computer type of organization

Unfortunately there is no definitive "directory assistance" available on the Internet. You may need to use the old-fashioned telephone to ask an individual for his/her e-mail address. If you are a member of an established network such as PREVline, you can likely find a directory of the persons who are members and their e-mail addresses. In addition, many Internet search engines now feature "people search" systems that can help you locate the addresses of some people and organizations.

Many businesses, libraries, and information centers now include an e-mail address on letterhead and business cards, right along with their telephone and fax numbers.

Bulletin Board Systems.

Electronic bulletin boards are today's electronic version of the old-fashioned cork-board where announcements could be posted. The electronic bulletin board basically assembles messages from users. It allows anyone who signs on to the bulletin board to read what has been posted and provides options for responding with a notice, announcement, or message of one's own.

Bulletin boards often serve as forums for questions and answers. An important distinction between the various types of bulletin boards is whether access is controlled or not. Those with controlled access are termed as being "moderated," meaning that someone takes responsibility for reviewing, culling, and sometimes actually posting the material. Unmoderated bulletin boards represent more of a "free-for-all" with anyone who signs on being able to place information on the bulletin board directly and no moderator to review or delete postings.

The PREVline bulletin board is unmoderated.

Discussion Groups.

These are the computer counter-part to a telephone "conference call." Multiple parties are on-line simultaneously as a part of the discussion group. One party serves as the "chair." Since everyone is at their own separate computer in their own individual location and the format is interactive, discussion groups tend to develop their own individual short-hand for communicating so that

brief phrases can be used to speed up the communication. For the new member, this can seem very foreign, and it may take a period of acclimatization before one can fully appreciate what is going on.

File Transfer.

File Transfer Protocol (FTP) refers to the process that allows one to make and secure a copy of a document or file which is on another computer. Thus, while similar to a fax, there are significant differences. Because one obtains an actual computer file, it is possible to load it onto one's own computer, just as if it had originated there. Thus, unlike a fax, one can manipulate the document, make changes in content or format, and then print it out on one's own printer.

PREVline does not offer discussion groups.

If a colleague has a bibliography that you would like to use with some modification, either the mail or a fax will get a copy to you. But once the information arrives, in order to change it, you would have to type it all into your computer. With FTP you receive a computer-based copy, which you can handle just as you would something that you created yourself.

E-mail can also be used to deliver computer-based copies of documents. However, one of the major advantages of FTP over e-mail is that when using FTP it may be possible to retain the formatting, lay-out, and features of the actual document. E-mail never captures these features – all you receive is the unformatted text.

In transferring files, keep in mind that the computer file is traveling from one computer over the Internet to another. Since different institutions have different types of computers some translation is sometimes required. Ideally, the computer software used to FTP materials takes care of that translation. Occasionally, however, incompatibility between systems may make it difficult or even impossible for a transferred file to be opened. When this occurs, you should contact the originator and see if they can reformat the document so your computer can read it. If not, it may be time to revert to some of the other methods for document delivery, such as e-mail or fax.

Keep in mind as well that most modern-day computer viruses are transmitted via files on the Internet. Never open a file you were not expecting, even if it appears to be from someone you know. Contact the sender first to make sure it is a legitimate file.

Database Searching.

Beyond file transfer between your computer and one at a distance, there is also the possibility to interactively search database files at distant sites. Thus, for example, anyone can search the on-line catalog of the Library Congress, the on-line catalogs of major libraries, or even search government databases in the same way one would if physically there. There is an ever-growing number of databases available for searching. Databases of alcohol and other drug information that are publicly available for direct on-line searching are included in

Appendix F.

Through the Internet, PREVline offers free access to several on-line databases to RADAR and Associate members as one of its menu of telecommunications services. Essentially what the managers of PREVline have done is to program into PREVline's computer the commands needed to access these other databases. Thus the PREVline user need only select a database and the PREVline system takes care of making the connection.

There are a few things to keep in mind when searching on-line databases. One of the most basic is that even though you are off-site and sitting at your own computer, in fact you are hooked up to another system. So, whatever rules and procedures govern the system that you are searching are the rules and procedures you must follow. However, because these databases are intended for broad use, most all of them have a series of "Help" commands that can be used to guide you through the database and its accepted procedures.

Equipment

The basic equipment required is a PC with a system and memory large enough to handle the software that will be required. The modem speed should be at least 14.4 bps, or bits per second, which refers to the speed with which information is transferred. This equipment need not be expensive. It may simply need to be newer than the older generation machine on your desk. The cost will be repaid in improved productivity and efficiency for the center very quickly. In a small center, the same machine can handle the center's technical processing activities.

More about the "On-Ramp"

Although it is possible to access PREVline without subscribing to a commercial network service, there are significant drawbacks to this arrangement. Although PREVline is a good place to start on the Internet, it does not offer full access to all the Internet resources. In addition, one must pay for a long-distance call, since you are contacting the distant computer directly via your telephone line and modem and PREVline does not offer a toll-free number. In the long-run, the center will want direct access to the Internet.

A center that is a part of an organization that already has a computer network in place is fortunate. Typically the network provides access not only to electronic communication, but to computer expertise. Experts within the organization worry about software packages and how they work, respond to questions, and often offer training to the new user.

Most academic and research institutions, as well as government offices and businesses, already have connections to the Internet. If your organization has a connection that is already established, only minimal costs will be incurred in extending the Internet connection to the information center.

**Internet Service
Providers**

If your organization does not already have access to the Internet, then you must “find” a host computer. Remember “host computers” are the gateways to the Internet. There are a number of commercial companies and organizations offering accounts to individuals to accomplish just this. They are called “*internet service providers*” or “ISPs.” Basically these are private companies that buy time on a very, very large computer from a regional networking organization and then agree to sell the service to you and me. These companies provide subscribers with software and a password that allows users to sign on to the system. Some of the better known groups are America On-line, CompuServe, and Delphi. Beyond the cost of making a connection to a host computer, access to the Internet is without charge.

It is important to think about telephone charges, however, because they can represent a large part of the cost of Internet use. Try to find a provider with a phone exchange that is a local call for you, free of per-minute phone charges. If that is not available, then compare the costs of providers with 800 number access to those with direct dial long distance charges. Consider that it is often cheaper to call long distance *interstate* than *intrastate* only a few miles away. Providers that use 800 numbers usually add a surcharge to cover the cost to them. This may, in fact, be more expensive than a long distance option.

Many of the books about the Internet included in the list of *Suggested Reading* at the end of this section include lists of network service resellers or public access providers. Keep in mind, however, that the list changes rapidly. The best way to obtain *current* list is via e-mail. To receive a copy ask a colleague to address a message to:

info.deli.server@netcom.com.

In the text of the message write the command:

send PDIAL

One example of a “network service reseller” used by libraries is Delphi. Delphi purchases *full* Internet network service and resells it to individual users at affordable prices. However, it’s interface is not especially “user friendly” in comparison to some other services.

Delphi

1030 Massachusetts Avenue, Cambridge MA 02138

Phone: 800/695-4005

Fees start at \$10/month for 4 hours connect time + \$4/hour for additional time.

Various arrangements are available.

It is possible to access Internet sources through popular and relatively inexpensive commercial network services such as CompuServe and America On-line. Call them for current information.

CompuServe
5000 Arlington center Blvd., Columbus OH 43220
Phone: 800/554-4079

America On-line, Inc.
8619 Westwood center Drive, Vienna, VA 22182-2285
Phone: 800/827-6364

Resources

Computer Software for Library Management

Plus for Libraries

Inmagic Inc., 2067 Massachusetts Ave., Cambridge, MA 02140
Phone: 800/229-8398; 617/661-8124. Fax: 617/661-6901.

Text management software package used by corporations, government offices and universities and by their Information centers and libraries. Handles non-traditional applications as well as the traditional ones - archives, technical reports, correspondence, annual reports, memos. SearchMAGIC offers a search-only version for on-line public access catalogs. The basic software and *Users' Manual* is about \$1250.

TLC: Total Library Computerization. Version 2

On Point, Inc. 2606 36th Street, N.W. Washington, D.C. 20007. Phone: 202/338-8914. Fax: 202/337-7107

Software to automate basic library functions in small to medium-sized libraries. Conceived and programmed by a librarian. Menu-driven system application of *AskSam*. Modules include acquisitions, cataloging, borrowing, interlibrary loan, serials control, and "memos". Version 2 creates intermodular programs to connect related records in separate integrated files. Intermodular searching with full text capability. Inexpensive - \$600/module; little training required. For IBM compatible PCs.

Library Works

CASPR, Inc. 635 Vaqueros Ave., Sunnyvale, CA 94086. Phone: 800/852-2777

A single, integrated program for cataloging, circulation, acquisitions, and serials management. All records are relationally joined to ensure that data is entered only once. Available for Macintosh and Windows. Handles images, sound video and documents for multimedia collections.

Suggested Reading

Automated Systems

Dewey P. *202 Software Packages to Use in Your Library: Descriptions, Evaluations and Practical Advice*. Chicago : American Library Association, 1992.

Duval BK; Main L. *Automated Library Systems: A Librarian's Guide and*

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Teaching Manual. Westport CT : Meckler, 1992. \$35 soft cover. 273 pp. Appendices, glossary.

Useful to those new to the field of automated library systems as well as to those interested in upgrades.

Dykhuis R. *Template Directory for Libraries 1989-1990*. Westport, CT : Meckler, 1990.

Templates for Macintosh and MS-DOS computers.

The Internet

In 1994 *Books in Print* listed more than 215 books with *Internet* in the title. Because the Internet itself is changing so fast these books quickly become outdated. The list below is provided only as a starting point.

Beyond this list, request a copy of the annotated Internet bibliography that is continuously updated by a member of the Boston Chapter of the Special Libraries Association. It is in three parts, *Internet Bibliography*, *Internet Business Bibliography*, and *Titles Not Yet Published (or not yet reviewed)* .

To request: e-mail a request to: tillman@babson.edu. Ask for the *Internet Bibliography*. It will be sent to you by the author, Hope Tillman.

If you have a colleague with full access to the Internet you can get a copy by sending a gopher request:

`gopher://gopher.babson.edu:70/.intbib/`

Upon receipt of this message a document will automatically be forwarded.

Angell D; Heslop B. *The Elements of E-mail Style: Communicate Effectively via Electronic Mail*. Reading, MA : Addison-Wesley, 1994. 157pp. ISBN: 0 201 62709 4.

Benson AC. *The Complete Internet Companion for Librarians*. New York : Neal-Schuman Publishers, 1994. 500 pp. \$49.95. ISBN# 1 55570 178 7.

Written by a librarian for librarians, the volume describes the Internet, hardware and software needed and the tools used to navigate it. A section focuses on the librarian's role in a global network environment and the effect of the Internet on the kinds of services libraries can offer. A selected list of Internet resources and services useful to librarians is included.

Branscum D. "Swap tips around the world". *MacWorld* April 1993: 63-65. Explains to novices the "invisible web of computer connections that wraps the earth". Concise description and access instructions for Internet, Usenet, FidoNet

Carroll J; Broadhead R. *Canadian Internet Handbook. 1994 edition*. Scarborough, Ontario : Prentice Hall Canada, 1994. 415pp. ISBN 0133043959.

Especially for Canadian users.

Dern DP. *The Internet Guide for New Users*. New York : McGraw-Hill,

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1994. 570pp. \$27.95 ISBN 0070165114.

Engle ME. *Internet Connections: A Librarian's Guide to Dial-Up Access and Use*. Chicago : American Library Association, 1993. ISBN 0 8389 7677 8.

Engst AC. *Internet Starter Kit: for Macintosh Everything you need to get on the Internet*. Second edition. Indianapolis, IN : Hayden Books, 1994. 990 pp. \$29.95. ISBN# 1 56830 111 1.

An excellent introduction and step-by-step instructions to the Internet. Includes extensive list of public access providers along with a disc of software with an automatic installer and two weeks trial connect time for full Internet access from one commercial access provider.

Engst AC. *Internet Starter Kit: for Windows Everything you need to get on the Internet*. Second edition. Indianapolis, IN : Hayden Books, 1994. 600 pp. \$29.95. ISBN# 1 56830 094 8.

An excellent introduction and step-by-step instructions to the Internet. Includes extensive list of public access providers along with a disc of software with an automatic installer and two weeks trial connect time for full Internet access from one commercial access provider.

Ladner S; Saryn J; Tillman HN. *The Internet and Special Librarians: Use, Training, and the Future*. Washington, D.C. : Special Libraries Association, 1993. 215 pp. \$33 (members \$26.50) ISBN 0-87111-413-5.

Based on a study of the Internet & special librarians. Analyses the impact of the Internet, how it is being used by special librarians and how it is changing the profession. Includes an Internet tutorial and a glossary of terms.

LaQuey T; Ryer JC. *Internet Companion: A Beginner's Guide to Global Networking*. 2nd edition. Reading, MA : Addison-Wesley, 1994. 196pp. \$12.95; ISBN# 0 201 40766 3.

Also available as *Internet Companion: Plus* with a disk. \$19.95

Levine J. *Internet for Dummies Starter Kit*. San Mateo, CA : IDG Books, 1994. \$34.99 includes disks. ISBN# 1 56884 237 6.

Good for "dummies" but excellent for more advanced users too.

Kehoe BP. *Zen and the Art of the Internet: A Beginner's Guide*. 3rd edition. Englewood Cliffs : Prentice-Hall, 1994. 193pp ISBN 0131214926.

The first edition of this book is still available on the Internet. This 3rd edition, available in published format, is still one of the most popular introductions to the mysteries that the Internet holds.

Krol E. *The Whole Internet: User's Guide & Catalog, 2nd edition* Sebastopol CA: O'Reilly & Assoc., 1994. 574pp. ISBN 1565920635.

This book has become a "bible" for many new Internet users. It contains a wealth of very practical information. Includes a lengthy list of public access providers.

Rosenfeld L; Janes J; Kolk MV (eds.). *The Internet Compendium-Subject Guides to Health and Science Resources*. New York : Neal-Schumann, 1994. 474 pp. \$75. ISBN# 1 55570 219 8.

Section 4. Computers, Telecommunications, and the Internet

Subject Guides to Social Sciences, Business and Law Resources. New York : Neal-Schumann, 1994. 472 pp. \$75. ISBN# 1 55570 220 1.

Created and collected by a team of subject specialists, librarians, graduate students and faculty from the University of Michigan Internet Clearinghouse, the volumes provide addresses to thousands of LISTSERVS, news groups, forums, electronic journals, databases and library catalogs. Fully indexed and annotated.

Tennant R; Ober J; Lipow AG. *Crossing the Internet Threshold: An Instructional Handbook, 2nd edition* Berkeley, CA : Library Solutions Press, 1994. 169pp. ISBN 1882208072.

Tillman HN; Ladner SJ. "Special librarians and the Internet." *Special Libraries* 1992; 83(2): 127-131.

Excellent, concise explanation of the many ways that the Internet is of major importance to anyone running an information service.