The

Family Planning Manager

A Primer for Accessing and Using Electronic Communications Technology

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A Primer for Accessing and Using Electronic Communications Technology

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This supplement to *The Family Planning Manager*, "A Primer for Accessing and Using Electronic Communications Technology," is intended to help you learn what equipment, training, and financial resources you will need in order to use electronic communications. It provides you with the most basic information about the kind of equipment and software you will need, the questions you should ask in order to choose a reliable and appropriate communications provider, and guidelines on the costs of setting up a connection with a communications provider. It concludes with a glossary of terms and definitions commonly used in electronic communications and the language of the Internet. For further reading, please refer to the reference list on page 28 of this issue of *The Family Planning Manager*.

This supplement was developed in collaboration with Kerry Gallivan of SatelLife. Based in Boston, SatelLife is a nonprofit telecommunications organization dedicated to providing health care workers around the world with affordable access to critical health information through the HealthNet network and other communications services. Using a combination of computers, low-earth orbit (LEO) satellites, simple ground stations, telephone lines, and radio links, SatelLife allows HealthNet users to simply and inexpensively participate in e-mail discussion groups, communicate with one another by e-mail, and receive current international publications electronically. FPMD is currently working with SatelLife to further develop electronic communications for family planning managers in Asia, Africa, and Latin America.

Getting the Right Equipment

The two basic pieces of equipment that you will need to send and receive electronic messages are a **computer** and a **modem**. Because computers can run many different kinds of applications, the same computer you use for word processing or spreadsheet functions can also be used to send electronic messages if it has the appropriate communications software. Although almost any computer can be used to send electronic messages, the fastest and newest computers that are able to run the most recent software will provide the most advanced graphic and data-sharing capabilities for communicating electronically.

In most countries, and for most users, exchanging information between computers occurs over telephone lines—the same lines that you ordinarily use to make telephone calls and to send faxes. Therefore, to communicate electronically, you will need to be able to connect your computer to a telephone line. In areas where telephone services don't exist or are unreliable, satellite and/or radio can be used to provide the connection.

Currently, in most situations, to send messages across telephone lines, the digital signals used by computers to create and store messages must be converted to analog signals. The conversion from digital signals to analog signals is performed by a piece of equipment called a modem, which you connect to your computer and to the telephone line. Because the modem is the link between your computer and the telephone line, you must make sure that you select an appropriate modem. There are several issues to consider when selecting a modem:

- External modems (those which attach by cable to your computer) are usually preferable to internal modems (which are cards with circuitry and chips that are inserted into your computer) because external modems are easier to install and are often simpler to repair than internal modems.
- Fast modems can adjust their speed in order to communicate with slower modems.
- The faster the modem, the higher the purchase price will be.
- The modem speed must be 14,000 bytes per second (bps) or faster if you plan to use a graphical browser to connect to the World Wide Web (also known as "the Web," or WWW). If you are using a text-only browser, such as LYNX, slower speed modems are adequate.

Be sure to check with your local communications provider or with telecommunications authorities to see if your country has rules or regulations concerning the type of modem you can use for electronic communications.

Finally, it is advisable to protect your computer and modem from damage caused by electrical surges over telephone lines by using a surge protector or an un-interruptible power supply (UPS) that includes surge protection.

Understanding Your Software Options

In order to connect to your communications provider and send and receive messages electronically, you will need communications software on your computer. The type of software that you use will depend on the type of connection that you will have with your communications provider. There are several types of connections that different providers offer. These include shell account, PPP/SLIP, and store-and-forward connections.

A **shell account** allows the computer user to connect to the provider's computer and use the communications applications that reside on the provider's computer to communicate with other computers and users. Shell accounts often provide text-only viewing of the Web. They are real-time connections and require the user to be continuously connected to the communications provider's computer while communicating electronically. This can be expensive, since many communications providers charge their users based on the total amount of time spent using their services. To use a shell account, you need a **terminal program** installed on your computer. A terminal program allows your computer to dial your communications

provider and communicate electronically. Terminal program communications software is included with most computers when they are purchased.

Other communications providers will offer either an **interactive Internet connection** or a **store-and-forward connection**. An interactive Internet connection allows a connection to the Internet over telephone lines using SLIP (Serial Line Internet Protocol) or PPP (Point-to-Point Protocol) protocols which permit use of the more advanced interactive tools available on the Internet. A store-and-forward connection, usually the least expensive type of connection, is limited to e-mail and e-mail discussion groups, and does not offer the features of an interactive Internet connection. Both store-and-forward and interactive Internet connections use e-mail software programs, which allow users to send and receive e-mail messages. An e-mail software program is very similar to a word processing program, but it has special features that allow you to send messages to specific e-mail addresses. Many e-mail programs also permit you to send word processing files or other data files as attachments, which are transmitted with your message. Among the more popular e-mail programs are Eudora and Pegasus Mail.

If you have an interactive Internet connection and wish to have access to the Web, you will need a software program called a **World Wide Web browser** on your computer. The Web browser will allow you to access and view information on the Web. There are two types of browsers; **text-based browsers,** such as Lynx, and **graphical browsers**, such as Netscape and Mosaic. Text-based browsers permit text-only viewing of the Web. Graphical browsers provide access to all of the interactive Web features, allowing you to see pictures, graphics, and even video, but they require more powerful computers.

Regardless of which type of communications service you choose or what software program you use, you will need to set up your computer and modem to work with your communications software. In most cases, a telephone number, a password, and an e-mail address (provided by your communications provider) are all you will need for this initial set up. If you are using the Web, you will need additional information such as your Internet Protocol (IP) address and the IP address of your provider's Domain Name Server (DNS). Your communications provider will give you this information when you establish your account.

Assessing and Comparing Communications Providers

When you are ready to set up electronic communications technology in your organization, you will need to find a communications provider that fits your needs and budget. Because communications technology is expanding rapidly in many areas of the world, it is likely that you will have to choose among several providers that offer a range of services at varying prices. To select an appropriate communications provider you should research your options and compare the features and costs of prospective providers available in your area. Some of the issues to consider include:

- Service costs;
- Telephone charges;
- Equipment costs;
- Modem speed;
- Software;
- Service support;
- Experience and reputation for good service.

Service Costs. Cost is always one of a manager's primary concerns. The start-up and recurrent costs of setting up and maintaining your electronic communications system must be carefully determined. Research your options thoroughly before making a final decision on which communications provider you will use.

What are the connection costs? Consider both the cost of starting up your system and the recurrent cost of maintaining it. Obtain detailed quotes for *all* connection costs and get information about providers' usage fees. In order to accurately estimate the cost of your connection, you will need to estimate how much you and your staff will use the

system, and work with your communications provider to determine which pricing plan will be most advantageous for your needs. (See page 8 for a summary of common fee structures of communications providers.)

What will the training costs be? Consider the costs involved in training information systems staff to install, update, and maintain the system. In addition, you will need to estimate the costs of training other staff in how to use the system.

Common Fee Structures of Communications Providers

Each communications provider has its own fee structure. Many providers combine several types of charges. Some of the most common types of charges are listed below. (For samples of actual fee structures, see "Costs and Services of Selected Communications Providers in Different Countries" on page 8.)

- **Registration or Subscription Fee.** This one-time charge is usually paid at the time you establish your account with your communications provider.
- **Flat Monthly Fee.** This charge is usually a fixed monthly charge. It is generally better to choose the flat fee if you expect that your Internet use will be high. If you choose to pay on a flat fee basis and don't use the service very much, you could end up paying for more service than you actually use.
- **Time-Based Fee.** In this case, you are billed for the number of hours you use the services. The time-based fee generally suits lower-volume users (usually less than 30-40 hours per month). It is a good idea to ask if you can you switch to a flat fee at a later date if you find that you are using the service more than anticipated.
- **Traffic-Based Fee.** With the traffic-based fee, you are billed for the number or the size of the messages you send and receive. (Some providers use the number of messages as a measure of use and others measure amount of data sent or received in kilobytes.) You should be very careful if you choose this option, because it is difficult to control what you receive from others. For instance, if you subscribe to electronic mailing lists, one week there may be no activity and another week you may find yourself receiving a large volume of incoming messages, which, if your bill is based upon the amount of traffic, could generate significant costs to you or your organization.

Telephone Charges. Since you will use telephone lines to dial your provider, you will always incur some telephone charges based on the length of time you are connected to your provider. No additional *telephone charges* are incurred for sending and receiving each individual e-mail message, but there may be traffic-based fees charged by your communications provider as noted above.

Will you need to make a long-distance or a local call to reach your provider? It will be less expensive if you can find a provider that you can reach with a local telephone call. However, there are still many areas that do not have a local communications provider and you may have to use a provider in another country. You should be cautious of connecting to international communications providers. Connecting to an international communications provider often means that you will have to pay both international telephone charges (each time you connect to the communications provider) and a monthly connection fee. For example, if you are in Zimbabwe and wish to get a CompuServe account, you would have to establish your account in South Africa (where the nearest CompuServe hub is located). This means that you would first have to pay the cost of connecting to South Africa at international telephone rates, and also have to pay the monthly CompuServe usage fee. However, if CompuServe or another provider established a connection in your local calling area, you could use this provider without incurring long-distance telephone charges.

Will you need an additional telephone line? Depending on how often you expect to use electronic communications, you may need a second line so that telephone service will not be interrupted for long periods of time.

Equipment Costs. If you don't already have the necessary equipment, you will need to either purchase or rent equipment in order to use electronic communications technologies.

What equipment will you use, and should you buy or rent it? Determine what you will need and whether you will buy or rent it. Usually equipment costs will be a one-time cost unless you choose to rent or lease equipment, in which case it will be a recurrent cost. In the case of a dedicated line connection (a high-speed connection in which a private telephone line is leased from the communications provider or telephone company), equipment and line rental costs form a large part of the service cost and can be expensive.

How to . . .

Estimate the Cost of Your Internet Connection

It is important for all managers to be able to project the cost of maintaining a connection to the Internet. The following budgeting worksheet will help you plan your electronic communications project. You can use it to calculate your first-year budget. Some costs will be one-time costs only, others will be costs that occur every year. (There may also be additional costs associated with the use of information services, such as POPLINE, MEDLINE, or library databases, that are not included in the table below.) Illustrative costs of purchasing equipment and establishing and maintaining electronic communications are included in the table.

Item	First-Year Costs (in US dollars)
Desktop computer	$ 800 - 2,500
Modem and cable	$ 65 - 265
Telephone line	
Installation	$ 20 - 1,000
Monthly telephone charges ($ 5 - 50 x 12 months)	$ 60 - 600
Printer	$ 250 - 1,000
Communications software	$ 0 - 100
Service provider charges	
Installation fee	$ 0 - 100
Monthly charge ($ 5 - 100 x 12 months)	$ 60 - 1,200
*Transmission charges ($ 5 - 100 x 12 months)	$ 0 - 1,200
Training ($ 0 - 150 per session x 5 sessions)	$ 0 - 750
*Maintenance contract on equipment	$ 250 - 500
TOTAL:	$ 1,505 - 9,215

* Not all communications providers include this charge in their fee structure.

Adapted from *Know Your Needs: Including E-mail and Information Support in Grants and Projects,* published by the American Association for the Advancement of Science (AAAS).

Modem Speed. Your selection of a modem will be greatly influenced by the communications provider and type of Internet connection you choose.

What modem speeds does your service provider support? Some providers may support only slower modems, so if you purchase a fast modem you may not be able to take advantage of its higher speed. In addition, some local phone lines may be unable to handle high transmission speeds and may adjust to a slower speed. Check with the local phone company about transmission speeds over the telephone. For example, in Nairobi, Kenya, telephone lines allow information to be transmitted at the rate of 20-21,000 bytes per second (bps). So, even if you have a 28,800 bps modem, you cannot send and receive messages faster than 21,000 bps. If you plan to use a graphical browser to connect to the Web, you will need the transmission speed to be at least 14,400 bps.

Software. You will need communications software to connect to your communications provider.

Does the provider offer communications software as a part of its service? Find out if your prospective communications provider includes software in its service package. If software is included, contact other users to find out whether they consider the provider's software to be good and reliable. You will usually need to use software offered by your communications provider, but you may have other options. If the provider doesn't offer software, you will need to buy a commercial product or obtain free software (often called freeware). In this case, you need to be certain that the software you choose is compatible with your provider's system. The disadvantage of using other software, especially if it is freeware, is that there may not be adequate service support available.

How much does the communications provider charge for the software it provides? Some providers offer free software. However, sometimes providers charge additional fees for software or require you to purchase a commercial product to use with their system.

Service Support. The type of service support a communications provider offers is an important component to consider in selecting a provider.

What type of installation support does your provider offer? Are there any additional costs involved? Many providers offer basic installation support and training. This cost is usually included in the initial start-up fee. If installation support and

Getting Started: Locating a Communications Provider

To find a communications provider in your country, talk with your telephone company. Telephone companies are usually a good source of information about accessing electronic communications. Some telephone companies may even provide communications services, however, they may be expensive. Other sources of information include local business newspapers or magazines, computer repair shops, local university computer science departments, or local computer user groups or hobbyists.

training is not provided, you will want to assess whether you or your staff will be able to install and use the system on your own. If not, you may want to investigate other computer services in your area or consider choosing another communications provider.

Does your service provider offer training? What kind of training courses are available? Where and when are they held? What is the quality of the courses? How much do they cost? Providers offer different types of training. Some will provide training to your specialized technical staff, such as MIS staff, who will be responsible for maintaining the system internally. Other providers will also offer courses to staff in how to use the service and the available software applications. You should ask if this training is included in initial start-up service costs or if there is an additional fee (it is most often an additional cost). If your provider does not offer training, or if the training is too expensive or of poor quality, you may want to seek out other options for training in your area, such as through local universities, computer companies, or user groups.

What kind of service support does your provider offer? Providers may offer a number of service support options, such as immediate service or service within 24 hours or within a few days. If the provider is not located in your area, you will want to find out if local support is available, how this support can be reached, and whether it is a reliable and reputable service. Some providers also offer instruction and tips that can be accessed through the Internet. These services often take the form of e-mail discussion groups.

How good and prompt are the technical services and support the provider offers? If other users of your prospective communications provider have had difficulty in getting reliable service or assistance, you should consider selecting another provider.

Experience and reputation. The importance of user experience should not to be overlooked. Try to talk to people who are currently using your prospective service provider to find out if they have experienced any problems.

Have other users experienced any difficulties connecting to the service? Is the connection often busy or out of service? There are several factors that may affect your ability to connect to your service provider, including poor phone lines. However, if other users are often unable to connect, then it may be due to problems with the communications provider and its systems or software.

How many dial-in ports (modem lines) does your service provider have, and how many users are signed up to use these lines? If a communications provider has a large number of users but only a limited number of dial-up lines, you will often get a busy signal when you try to connect. This can be very frustrating.

Costs and Services of Selected Communications Providers in Different Countries

The table below contains some key information about a selected number of communications providers. As the table indicates, international and local messaging charges vary from country to country.

Network Provider	Number of Users/ Number of Dial-in Ports	Messages per month	Recommended Modem (speed)	Gateway or Interactive Internet Connections	Cost Considerations (in local currency and US dollar equivalents) (Figures according to international exchange rates 07/01/96)		
RIO Madagascar	100/NA*	NA		Gateway	Subscription: Monthly: Per Page:	FF 1000 FF 100 FF 2	US$ 193 US$ 19 US$ .39
HealthNet Nepal	75/NA	2,000	28,8000 bps	Gateway	Registration: Monthly:	NRs 2,232 NRs 558	US$ 40 US$ 10
MANGO Zimbabwe	270/1 (registered points/dial-in ports)	25 (MB) to/from the Internet	14,4000 bps	Gateway	Registration: Monthly: Usage fees Int'l mail:	Z$ 100 Z$ 20 Z$0.15/KB	US$ 10 US$ 2 US$.02/KB
MUKLA Uganda	1250/4	4500	28,8000 bps	Gateway, (Interactive Internet Connection in the near future)	Installation, Training/ Support: Monthly:	USh 57,200 USh 10,400 - 104,000	US$ 55 US$ 10-100
SPIN Mexico	NA	NA	14,4000 bps	Interactive Internet Connection	Registration: Monthly: each extra hr:	Mex$150-215 Mex$124 /20 hr Mex$5-7	US$ 20-28 US$ 16 US$ 0.66-0.92
HealthNet Kenya	NA	NA	14,4000-28,8000 bps	Gateway	Installation: Monthly: Local Usage:	KSh$3000-4500 KSh$ 600-1400 Free	US$ 51-77 US$ 10-24
ZAMNET Zambia	400/20	54,600	14,4000 bps	Interactive Internet Connection Gateway for rural customers	Registration: (interactive) (gateway) Monthly: (interactive) (gateway) Connect time: (interactive) Int'l mail:	 ZK 125,200 ZK 62,600 ZK31,300-50,080 ZK25,040-37,560 ZK 8,764-12,520 ZK 125-188/KB	 US$ 100 US$ 50 US$ 25-40 US$ 20-30 US$ 7-10/hr. US$0.15-0.10/KB
REUNA Chile	NA	NA	14,4000 bps	Interactive Internet Connecton	Registration: Monthly:	Ch$ 20,250 Ch$ 10,125	US$ 50 US$ 25

* NA = Not Available

Explanation: The **number of users/dial-in ports** is a measure of the communication provider's accessibility. Number of **messages per month** reflects the overall size and level of activity of the communications service. **Recommended modem speed** refers to the modem speed suggested by the provider. **Gateway** or **Interactive Internet connection** describes the type of Internet connection. **Cost considerations** lists the different fees that the communications provider charges. In most instances, these include registration fee, monthly service connection charges, and traffic-based charges for sending and receiving both local and international messages (For more information on provider fee structures, see "Common Fee Structures of Communications Providers" on page 4).

Installing Your System

Most communications providers have technicians who do the initial installation and training in how to use the software. Some providers may instead offer regular training and demonstration workshops that your staff can attend to learn how to install, maintain, and use the system. You may also want to consider other training resources that may be available locally, including computer science departments at local universities, or computer user groups, which are often accessible via e-mail. In general, computer technicians are very helpful people when it comes to assisting new users.

Good written instructions for using software can be the single most useful tool to help new users of electronic communications. In many cases, the manufacturer of the communications software you are using will provide a user's manual. If software instructions are not provided by your communications provider, check to see if the provider will assist you in installing and using the software.

You can also search the Internet for information about installing and using your communications system. Often this information is found in the form of Frequently Asked Questions (also known as "FAQs"). These documents include information on a range of topics from setting up your modem to using different specialized communications software. Your communications provider can help you find these resources.

Finally, other users of the system can provide important and timely support and advice to new users. Many communications providers often conduct e-mail discussion groups which provide a forum for users to ask questions and, usually, the responses come from other users. In this way, once you are connected to the Internet, you can become a training resource to others.

Tips: Getting the Most Out of Your Investment

- Consult with technical experts about hardware and software requirements.
- Get as much hard disk capacity and RAM (memory) on your computer as you can afford.
- Make sure you have planned for equipment maintenance and repair.
- Research the modem specifications carefully.

Communicating Effectively

Once you have successfully connected to a communications provider, you will be ready to begin using your computer to communicate with others and to access information from many places around the world. If you are familiar with using a word processor, you already know most of what you need to know in order to use your e-mail software program. You will undoubtedly find after a very short period of time that you can send and receive e-mail messages easily. As you begin to use e-mail, you need to be aware that there are some accepted rules for communicating electronically (often referred to as "net etiquette" or "netiquette"). When these rules are not observed, using e-mail can be both expensive and frustrating. Here are some of the most important rules to keep in mind when communicating electronically.

- Check your e-mail daily. If you don't check it daily, you won't benefit from the amazing speed and value of this communications technology.
- Keep paragraphs and messages short and to the point and edit long messages when you reply to an e-mail. This saves time and often money.
- Delete your unwanted messages so that they don't use up disk space.
- Assume that e-mail will be accessible to anybody and don't send messages that you would mind being read by the general public.
- Be professional and thoughtful. Remember that your message can easily be forwarded to many people.
- Be careful in using humor and sarcasm. E-mail communication lacks the visual clues that help the recipient of the message understand the emotion behind the message.

- Scan your system for computer viruses frequently to insure that you do not transmit viruses to others. Computer viruses can be transmitted via electronic mail.

Proper netiquette is important when communicating person-to-person. But you will find that many of your requests for information are not handled by people. This is because a large amount of information resides on computers, called servers. These computers can automatically process your request, find the information that you want, and e-mail the information to you. The main problem with this kind of automatic transfer of information is that you must tell the computer exactly what you want, in a format that the computer will understand. Therefore, when you send a request for a document you will need to compose your message in a specific format. The specific format required is usually explained in an e-mail that contains information about how to request the available documents (See "How to Request a Document by E-mail" below).

How to . . .

Request a Document by E-mail

You will need to know how to retrieve a document via e-mail. This is a real example of how you can request and receive an electronic copy of this supplement or this entire issue of *The Family Planning Manager* by e-mail. Both the supplement and the issue are archived on the FTP site of *The Family Planning Manager's Electronic Resource Center*. Here is what you do to get these documents sent to you electronically. Try it to see if it works.

Step 1: Enter the address.

Enter the address: ftpmail@msh.healthnet.org on the address line of your e-mail.

Step 2: Request the document.

In the body of the message type the following exactly as it appears below (all text must be lowercase):

Command	Explanation of command
open ftp.msh.org	(The name of the FTP site)
chdir fpmpubs	(The directory where the file lives)
get supec	(The name of the file you want—in this case, the file name is for the supplement)
	(If you want the Issue, type "get issuevsn2")
quit	(You have finished your request)

If you are requesting the supplement your e-mail should look like this:

From: Your e-mail address
To: ftpmail@msh.healthnet.org
Date: June 30, 1996 11:50
Subject:

open ftp.msh.org
chdir fpmpubs
get supec
quit

Step 3: Send your E-mail

If you have any difficulty in receiving this document, please send an e-mail message to the editors describing what you requested and what happened. Send your e-mail to: fpmdpubs@msh.org.

Looking to the Future

Whether you have just begun to use electronic communications or have just started to think about getting connected, communicating electronically will bring you many new opportunities. In the future you will expand your access to expertise around the world, find and develop relationships with people with whom you share a common interest, and improve your knowledge and skills from information you will find electronically.

Setting up, maintaining, and using electronic communications will present a number of new management challenges. You will need to plan your system, develop adequate technical support to keep the system running, provide funding for the recurrent cost of the system, and train your staff to use the system to improve organizational productivity and effectiveness. The editors hope that this supplement has provided you with the necessary information to help you become an active participant on the Internet and that, as these technologies become as commonplace as the telephone and fax, you will use them to build and sustain your health and family planning programs.

Glossary of Terms

Anonymous FTP: Publicly accessible FTP sites in which users do not need to have pre-approved access to the site; they simply login as *anonymous*.

ASCII (The American Standard Code for Information Interchange): A standard way for computers to use bytes to represent characters. ASCII text is simple text without any special formatting codes.

Byte: A unit that measures data capacity; one byte usually equals one character of text.

Bytes per second (bps): A measure of the speed of data transmission; the number of bytes of data that can be transmitted each second.

Browser: A software application that allows users to view the World Wide Web. Graphical browsers permit users to view text, graphics, video, and even sound, depending on the type of computer being used. Text-based browsers allow those with computer systems that cannot support graphics to view text-only versions of Web pages.

Click: The term used to describe pressing the mouse button when performing a function on the computer; users "click" on hypertext when choosing to follow a link on a Web page.

Client: A software application or computer that allows users to access information from another computer on the Internet called a server. A Web browser is an example of a client that permits users to connect to Web servers.

Communications Provider: A company that provides electronic communications services, including access to the Internet.

Communications Software: Software required to connect a computer to a communications provider.

Dedicated Line: A private telephone line that is leased from the telephone company or a communications provider and provides a permanent connection to the Internet. Dedicated lines are most commonly used to connect large organizations or networks directly to the Internet.

Database: A database is a collection of related information used for archiving data. Databases can be found in both text and numerical formats.

Dial-In Port: The location on a computer or computer system where a modem cable can be plugged in to allow data to be transferred to and from other computers.

Dial-Up Connection: Any connection between a computer and a communications provider made by calling the provider's computer using a telephone line.

Domain Name System (DNS): A distributed database system on the Internet that allows computers that are connected to the Internet to find one another. The DNS translates computer names into numeric Internet addresses and vice versa so that users don't need to memorize long lists of numbers.

Domain Name: A name given to a host computer on the Internet and registered with the DNS.

Download: The process of transferring information from one computer to another. Users can download a file from another computer to their own computers.

E-mail (electronic mail): The most basic of the electronic communications tools, e-mail allows individuals to send and receive messages electronically. E-mail messages are in plain ASCII text but, depending on the type of e-mail system, files in other formats can be transferred via e-mail, including graphics and audio files.

E-mail Address: The address of the computer and the user to which a message is to be sent.

E-mail Discussion Group: A forum for a group of individuals to exchange information on a particular topic via e-mail. E-mail discussion groups usually use mailing list technology to share information.

Electronic Conference: Another term for e-mail discussion group.

FAQ (Frequently Asked Questions): A document found on the Internet that provides users with quick answers to frequently asked questions on specific topics. (For an example of a FAQ, see "Using the World Wide Web to Improve Program Quality" on page 16 of this issue of *The Family Planning Manager.*)

Fidonet: A store-and-forward network system (that uses earlier electronic communications technology) connected to the Internet. Fidonet networks are most frequently found in Africa.

Freeware: Also referred to as public domain software, Freeware is software that is freely distributed via the Internet. Freeware is often available on FTP sites.

FTP (File Transfer Protocol): A way of moving files across computer networks. Files can be transferred (or downloaded) from one computer to another. FTP sites are servers on the Internet, often publicly accessible (see anonymous FTP), that serve as file repositories where files are easily available for downloading.

Gateway: A system that allows smaller networks using different computer systems to connect to each other and the Internet, permitting the exchange of information across networks.

Gopher: A type of server used to share information on the Internet. Information located on Gopher servers is organized using a system of hierarchical menus and hypertext for ease of navigation. Gophers are accessible via e-mail and the Web. (For an example of a Gopher, see "Obtaining Demographic Information" on page 19 of this issue of *The Family Planning Manager.*)

Home Page: The first page of a Web site. It acts as an introduction to the site and as starting point for navigating the site.

Host: A computer connected directly to the Internet. A communications provider's computer is a host, as are computers with permanent connections to the Internet using dedicated lines.

HTML (HyperText Markup Language): The code used to create Web pages with hypertext.

Hypertext: The highlighted and underlined text on Web pages that, when selected or "clicked" on with a mouse, links users to other resources, related text within the same Web site or other Web sites.

Interactive Internet Connection: A real-time connection permitting full access to the Internet and use of the Internet's more advanced features such as the World Wide Web.

Internet: A worldwide network of computer networks that allows people to exchange information electronically.

Internet Protocol (IP): The standard protocol used by the Internet. Other protocols are used, but the Internet protocol is the most important one.

Kilobyte (KB): A measure of data capacity equal to 1,000 bytes.

Leased Line: See dedicated line.

LISTSERV: The name of a popular commercial mailing list software. People sometimes (falsely) use "LISTSERV" interchangeably with "mailing list."

Login: The account name used to access a computer system (often used as a verb—the act of typing in a username and password).

Lynx: A text-based Web browser.

Mailing List: An automated electronic mailing system that transmits e-mail messages sent from one user to a specified group of users. Mailing lists are usually organized around specific topics and used for e-mail discussion groups.

Megabyte (MB): A measure of data capacity equal to 1 million bytes.

Micro-Networks: Private communications networks that link together computers in different locations within an organization. Micro-networks use e-mail and/or other Web-based technologies to exchange information.

Modem: A device that connects a computer to a telephone line and permits the computer to exchange data with other computers over the telephone line.

Mouse: A hand-held device with buttons that helps users operate computer programs. A mouse lets the user easily move a cursor around a computer screen and perform various functions by "pointing and clicking."

Net: Abbreviated term for the Internet.

Netiquette: A set of accepted rules, Internet etiquette, for communicating electronically.

Newsgroup: A type of electronic mail discussion group, usually covering a specific topic, that works like a traditional bulletin board. Individuals can post messages to the "bulletin board" (a news server on the Internet). Others can use a newsreader to access and read all of the messages posted and respond to specific posts if they wish.

Newsreader: A software application used to read and post newsgroup messages.

On-line: Usually refers to a "real-time" connection to the Internet.

Point-to-Point Protocol (PPP): A communications protocol that permits an interactive Internet connection. PPP is a newer technology than SLIP (see Serial Line Internet Protocol) and is quickly increasing in popularity.

Protocol: A set of rules that defines how computers exchange information, allowing different types of network computer systems to communicate with one other.

Serial Line Internet Protocol (SLIP): A communications protocol that permits an interactive Internet connection. SLIP is the predecessor to PPP, but is still in common use.

Server: A computer or program that provides "services" or information to another computer. For example, a Web server makes information available to other computers, these other computers use Web browsers (clients) to access the information.

Service Provider: See Communications Provider.

Shell Account: A type of connection to a communications provider that allows the computer user to connect to the provider's computer and use the communications applications that reside on the provider's computer to communicate with other computers and users.

Site: A "location" on the Internet, usually referring to a server where information is available, for example, Web site, FTP site, Gopher site, etc.

SLIP: See Serial Line Internet Protocol.

Store-and-Forward: An e-mail system in which electronic messages are temporarily stored at intermediate points on the Internet on the way to their final destinations. Store-and-forward technology does not permit access to the Web and the other features that an interactive connection provides.

Surge Protector: A device that protects your computer and modem from damage caused by electrical surges over telephone lines.

TCP/IP (Transmission Control Protocol/Internet Protocol): A set of protocols that permits computers connected to the Internet to communicate with each other.

Terminal Program: A software application that allows a computer to dial a communications provider and communicate electronically. A terminal program is required to use a shell account.

Uniform Resource Locator (URL): A Web site address; for example, the URL for MSH's web site is http://www.msh.org.

Un-Interruptible Power Supply (UPS): A device that provides a continuous supply of regulated voltage to a computer, printer, and modem. Many UPSs also provide a built in surge protector.

Virus: A computer program that uses various techniques for duplicating itself and traveling between computers. Viruses can be transmitted through computer diskettes or through on-line connections and can cause serious damage to computer hardware and software.

Web Browser: See Browser.

World Wide Web (WWW): The most advanced tool currently available to share information over the Internet. Using hypertext, the Web allows users to easily navigate the Internet and access information in a variety of formats including graphics, video, and sound.

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