Effective Internet

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Preface

We wrote the Effective Series because we wanted a computer application textbook to help us teach. At the time, most computer applications texts were written like cookbooks. Do this, do that, follow these steps. There was little or no explanation about why you should carry out specific tasks. Most books simply described a series of elaborate keystrokes. While these types of textbooks work fine as a personal reference, they did not help us to teach or our students to learn. These types of texts certainly did not help our students master computer applications with a high degree of understanding. Unfortunately, the trend continues where too many authors follow this cookbook approach.

One of the primary reasons so many applications books fail as instructional tools is that most current computer applications texts are not written by people like us, people who teach in the classroom. Unlike our Effective Series, most applications texts were, and still are, written by professional writers—people who have not been in the classroom in recent years or who have never taught. Their books are not guided, or revised, on the basis of teaching experience, experience working with students on a day-to-day basis, or on an ongoing educational pedagogy. Our goal was to take our ongoing classroom experience and classroom pedagogy and use it to guide us in the development of a computer text that would serve as a true instructional and learning tool. The outcome of this effort is a pedagogical model we call Success-Based Learning.

SUCCESS-BASED LEARNING

Success breeds success. You may have heard this simple statement before. As simple or as trite as this statement may sound, it is at the basis of our thoughtfully planned instructional pedagogy. We base our Success-Based Learning pedagogy on one primary assumption—the most successful teachers are those who have a strong desire for all students to learn. This desire serves as a threshold in the sense that teachers who want their students to learn, and who hold high expectations for student learning, have students who are successful in the classroom.

Putting high expectations into practice is the foundation for the five principles in our Success-Based Learning model. By combining five separate elements, students learn the material quicker, have a better understanding of how software operates, and retain and recall the material easier. It also makes it easier to teach. Most of our principles are based on social psychological theories that have been around for a long time. They are not new, nor are they exclusively ours. What is different here is that we have taken principles we use to teach in

the classroom and have used these principles to guide us in writing this series of books.

Learning is most likely to occur when students make a decision that they want to learn. If a student makes a conscious decision to learn something, and the teacher also wants that student to learn, the teaching–learning process becomes very easy. Unfortunately, in many instances this is not the case. One of the benefits of Success-Based Learning is that it provides a motivation, and a stimulus, to help students develop a desire to learn.

1. **Structured success.** Generally, when attempting any new behavior, if people experience immediate success they become more willing to try additional behaviors in that activity. On the other hand, if they experience failure, they become reluctant to attempt any further activity. Students need the opportunity to experience their own victories in order to reinforce what they learn and instill confidence in their ability. So, we provide highly structured activities and tightly correlated exercises early in every lesson. These activities and exercises are designed to provide opportunities for immediate success. When students experience this early success they are more likely to make a decision they want to learn more.

2. **Identifiable outcomes.** Students learn with confidence when they can anticipate the results of their work. In other words, students must know when they have learned something correctly. The important component here is not that students must know when they have learned something, but that they have learned it correctly. The example we like to use here involves the activity of making an omelet. Before you start to make an omelet you should know what an omelet looks like. This way, you will know if you have been successful in your attempt. Otherwise, when you try to make an omelet you might end up with some concoction of eggs and other ingredients that looks vaguely like scrambled eggs and not realize that you have made a mistake.

Each of our lessons begin with a set of objectives, followed by an extensive overview of what students can expect as they proceed through the lesson. We include several screen shots to show students exactly what to expect from their actions. Further, each major section within the lesson begins with a conceptual discussion of the reasons why an activity is important, what outcome should be gained from the activity, and how this is related to the overall goal of the lesson. From this, students know what to expect throughout the lesson and what they should understand at the end of the lesson. They know when they have been successful. Knowing when you have been successful is key in learning any behavior.

3. **Guided exploration.** Most of us agree that the best way to learn how to use software is to use it to solve a problem. But, this "hands on" approach should not be left to trial and error learning. It is important to provide a step-by-step road map through each new topic. This is the explanatory aspect of lecturing or working through class activities. It may also be referred to as the "How to" component of instruction. The goal here is to explain how to use this new idea, or new information, in their own experience.

We include several exercises in each lesson that are directly tied to an activity that is carried out throughout the lesson. Not only are these exercises tied to an activity, we provide several applications at the end of each lesson that are linked directly to lesson objectives. In this manner, students are provided with a map. That is, they are guided very closely toward achieving the objectives of each lesson.

Exercises embedded throughout each lesson and application projects at the end of each lesson provide personally meaningful experiences throughout the learning process. In addition, we also provide a series of data disk applications

which allow students to expand their understanding by modifying files. We also provide a comprehensive problem at the end of the lesson which is designed to link concepts in previous lessons to the current lesson. This helps students understand the connection between concepts and processes throughout the entire learning experience.

4. **Deductive reasoning.** We think it is best to provide students with broad general principles and then reduce these global conceptions to more specific, existential ideas or components. Most scientific reasoning is deductive rather than inductive, so it makes sense to follow this model when teaching scientific subjects. The second lesson of each module introduces students to the broad general, or global, aspect of the software. That is, in Lesson 2 of every module, students create a document, spreadsheet, or database. They learn to edit, change, save, and print the file. In each subsequent lesson the global commands introduced in Lesson 2 are broken down to their basic components and used as the basis for conducting additional activities. By moving from a global procedure in Lesson 2 to more specific activities in subsequent lessons, retention and recall is facilitated. Helpful Hints are also used to suggest alternative strategies for a task or to provide very brief instruction on a limited topic. The combination of Helpful Hints and the organization of each book on the basis of proceeding from general to more specific topics helps facilitate retention and recall.

5. **Critical mass.** This is an aspect of teaching that comes with experience and ongoing contact with students. Those of us who teach must carefully determine how much material we can safely introduce in one lesson. Too much and the student is overwhelmed. Too little and the student is not challenged. Identifying the critical mass for a classroom lecture, chapter topic, or even an entire course becomes a crucial variable for successful instruction. With an introductory course on computer applications, not everyone needs to know every command, every procedure, or every nuance of a particular piece of software. What is important, however, is that a student learn enough to feel comfortable with what they have learned, and feel comfortable enough to experiment. In several of the applications at the end of each lesson, we provide activities designed to encourage students to experiment.

Would you prefer a textbook written by professional writers who have not stepped into a classroom in several years, or who may have never been in the classroom? Or, would you rather use a textbook written by people who teach, who care about their students, and want their students to learn? We know this pedagogy works.

SUMMARY, KEY TERMS/COMMANDS, SELF-QUIZ, AND FILL-IN QUESTIONS

At the end of each chapter we conclude the lesson with a summary and a list of key terms. The summary reviews the important topics covered in each lesson while the list of key terms calls attention to a series of important concepts, commands, and procedures highlighted throughout the text. In addition to the summary and key terms, we have included numerous questions that help the reader review important concepts in the lesson. The review questions tend to be open-ended, discussion-type questions. The self-quiz questions are multiple choice questions. These multiple choice questions are followed by a series of fill-in-the-blank questions. As students review and try to answer these numerous questions, they are reinforcing important topics covered throughout the lesson.

Identifiable outcomes

LESSON 2

The World Wide Web

OBJECTIVES

After completing this lesson, you will be able to successfully

- Describe the World Wide Web.
- Define HTML, HTTP, and URL.
- Use a browser to examine Web pages.
- Use Netscape.
- Identify links.
- Use Web navigational aids.
- Locate Web pages.
- Use a variety of Web search tools.
- Use bookmarks and other tools for remembering URLs.
- Differentiate between graphic and character-based browsers.

WHAT IS THE WORLD WIDE WEB?

The World Wide Web (WWW), or as it is commonly called, *the Web,* has quickly become the most popular way to access and use the Internet. The reason is simple. The Web allows full, high-quality color graphics and sound that make it an attractive multimedia tool. But what exactly is the World Wide Web? Just as it is somewhat difficult to define the Internet, it is also difficult to define the World Wide Web. You know you are on the Web when you are connected. The Web is very distinctive, but if you ask most users what the Web is, they have a difficult time responding.

The World Wide Web is not the Internet, although many people make this mistake. It is not software, although you need specific software (a browser) to access the Web. It is not hardware, although you need a connection to the Internet to access the Web. In its simplest form the **World Wide Web** is a standardized set of requirements that allows users, from any point on the Internet, to access information at any other point. It involves a specific communication standard and a specific set of requirements for developing information for distribution over the Internet.

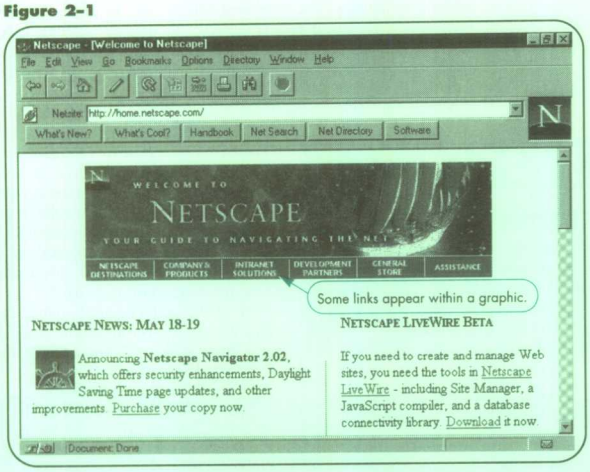
The World Wide Web was initiated by the European Laboratory for Particle Physics as a means of linking objects (text, graphics, sound, etc.). By using HyperText Markup Language (HTML), anyone can create documents consisting of several objects for inclusion on the Web. The documents that most people create with HTML are called **Web pages** or **Web sites.** However, documents can also be sound, pictures, graphics, animation, and video. By following the standard that makes up the World Wide Web, users can gain access to information over the Internet.

Structured success

ACTIVITY

1. How you connect to the Internet depends on if you are directly connecting through a computer lab or using a dial-up facility. Before you start this activity make sure you have an Internet connection.
2. Launch Netscape.
   Again, this will depend on how your computer system is set up. Normally, you can select Netscape through the Start menu in Windows 95 or through the Netscape group icon in Windows 3.1. After you launch Netscape the opening screen appears (Figure 2–1).

Figure 2–1



Guided exploration

3–5 EXERCISE

Mailing lists can be one of the most effective tools in e-mail. Create three separate mailing lists—one for your friends, one for family members, and one of your choice. It is up to you to decide who to include in your various mailing lists. It is also up to you if you want to send a message to all members of your list.

E-MAIL SECURITY

While it is unlikely that your mail will be read by an unintended user, do not ever assume that your mail is private. The delivery systems used to route your mail have human operators who have access to your mail. In most cases no one will ever care what you send, but your mail can be monitored. This is especially true with company e-mail.

E-mail can also be forged. Since the delivery systems are not designed to verify the contents of header lines, it is possible for someone to send mail to you using a different name. It is not all that difficult for a sophisticated user to send mail using another person's address. Keep this in mind, particularly if someone requests personal information. Children are especially vulnerable to forged or inappropriate mail and should be warned never to provide personal information such as a phone number, address, or age.

Deductive reasoning

3–9 HELPFUL HINT

A Little Common Sense

A little common sense when using e-mail can go a long way. People who never respond to unsolicited mail at home may put that common sense aside and respond to e-mail that solicits personal information. Remember the old adage, "if it sounds too good to be true..."

One of the problems that almost all regular e-mail users encounter is unwanted mail. This mail can range from junk mail, much like you may receive

Critical mass—activities designed to encourage students to experiment

APPLICATION PROJECTS

1. If you have access to Netscape, Pine, or some other electronic mail system that will allow you to store addresses, enter your personal address book into the software. Remember, however, that any electronic storage can be lost, or it may be open to the public. So it is a good idea to keep a paper copy of your address book in the event of a computer or disk failure, and it is a good idea to carefully consider what you want to put in an address book that is public.
2. The best way to let someone know that you have access to electronic mail is to send an electronic mail message. If you are using this book in a course, send your instructor an electronic mail message. Indicate that you are now available to receive electronic mail messages. This will help your instructor because instead of having to type all of the electronic mail addresses into an address book your instructor can use a capture process directly from your mail.
3. Mailing lists are very useful. The trick to developing a successful mailing list is to determine what makes all members of a mailing list similar. For example, your instructor may have a separate mailing list for each class where class membership is the unifying factor. What mailing lists would be useful to you? On what basis would you create a mailing list? On a piece of paper identify at least five different mailing lists you might find useful. If you have an electronic mail system that allows you to store your own personal mailing lists, create these mailing lists and try using them.
4. Be sure you go through your mailbox periodically. Save any E-mail addresses that are not included in your personal address book or saved on your system. It is also a good idea to delete old or unwanted e-mail messages from your folders. This will make it easier to find those messages you want to keep and will keep your system operator happy.

HANDS-ON PROJECTS

As all of us who teach microcomputer applications know, there is no substitute for hands-on activities. Each lesson concludes with a series of application projects. The first group of application projects reviews the activities introduced throughout the lesson. The latter group of applications combine the activities of the current lesson with activities of previous lessons. Throughout these applications students create their own files and use them throughout the entire text. Following these application projects are a set of applications we call Data Disk Applications. These data disk applications are hands-on projects the students are asked to complete based on a set of files provided to the instructor of the class. Finally, each lesson concludes with a Comprehensive Problem based on a fictitious candy company and an extensive list of employees. With the comprehensive problem students are asked to carry out a number of the activities learned in the lesson, and they are encouraged to experiment on their own.

ANCILLARY MATERIAL

- ***Instructor's Guide.*** We have written our own instructor's guide for each Effective text. Most authors do not write their own instructor's guides. We felt it was important, however, to ensure that our instructional pedagogy was available to instructors who use these types of resource manuals. In our instructor's guide, we have detailed outlines of each lesson, lecture tips, helpful hints, and assignment suggestions that will help ensure that students master the material presented in each lesson. The instructor's guide also includes answers to review questions, self-quizzes, and fill-in questions.
- ***Student Data Disk.*** Accompanying the Instructor's Guide will be a student data disk containing exercises for the students to work through. By using these hands-on exercises the student will gain a more thorough understanding of the material presented.

ACCURACY

Class time is important. You shouldn't have to use your class time trying to deal with an inaccurate activity. All of the books in this series are developed as carefully as possible to ensure their quality and accuracy.

ACKNOWLEDGMENTS

To write a series of books like this takes a great deal of help and support. We have been extremely fortunate to have the very capable assistance of a number of dedicated people at Richard D. Irwin publishing. We are very grateful for the assistance of Garrett Glanz, Jane Lightell, Kristin Hepburn, Michelle Hudson, Tony Noel, Heidi Baughman, Dina Genovese, and Charlene Perez. We are most indebted to Michael Moses for his friendship, support, and drive for excellence. We would also like to thank our families. Thanks Jan, Jenna, John, Edsel, Ruth, Petie, Jennifer, Cody, Julie, Jacqui, Joey, and Helen. All of you made a labor of love less labor and more love.

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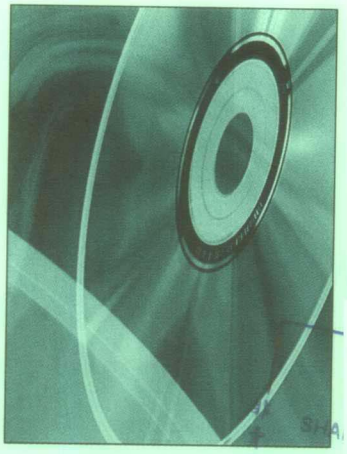

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LESSON 1

Getting Started on the Internet

OBJECTIVES

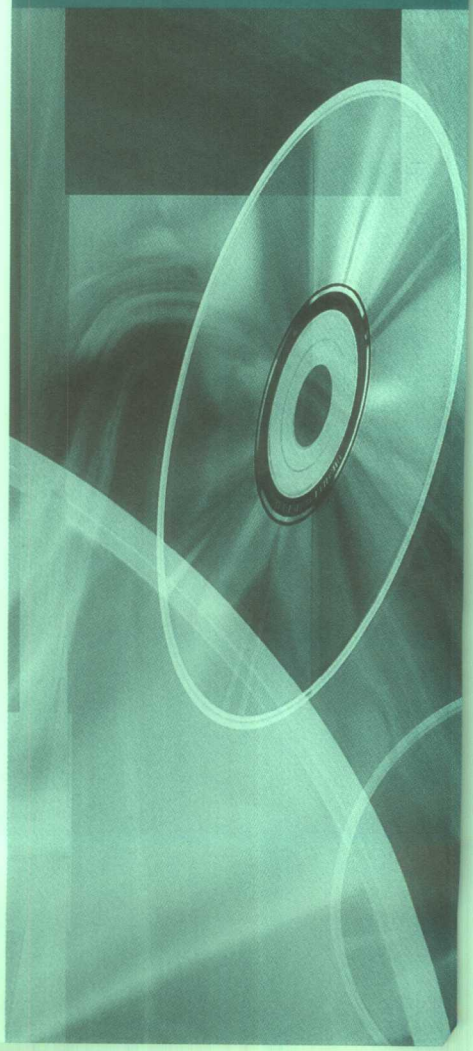
After completing this lesson, you will be able to successfully

- Define the Internet.
- Describe some of the uses of the Internet.
- Identify various information resources.
- Use the Domain Name System (DNS).
- Identify various ways to connect to the Internet.
- List various resources available such as e-mail, the World Wide Web, and others.
- Identify and use a browser.
- Start an Internet session and access the World Wide Web.

WELCOME

If you look in the computer section in almost any bookstore, you will see a large number of expensive books on how to use the Internet. Many of these books are filled with technical jargon and loaded with acronyms such as TCP/IP, SLPP, PPP, http, DNS, VT100, and X.400. The size of the books and the large number of acronyms suggest that learning to use the Internet is a complicated process. Not so. Learning to use the Internet is not very difficult if you have a little guidance. On the other hand, learning to use the Internet can be, at the very least, time-consuming if you limit yourself to a trial and error learning.

Our goal is to teach you the fundamentals of using the Internet effectively. By the time you are finished reading and using *Effective Internet,* you will be a capable and competent user of the Internet. You may not be an expert, but you should be at the point where it will be easy for you to learn additional features on your own in a quick and efficient fashion.



1–1 HELPFUL HINT

Learn Your Operating System

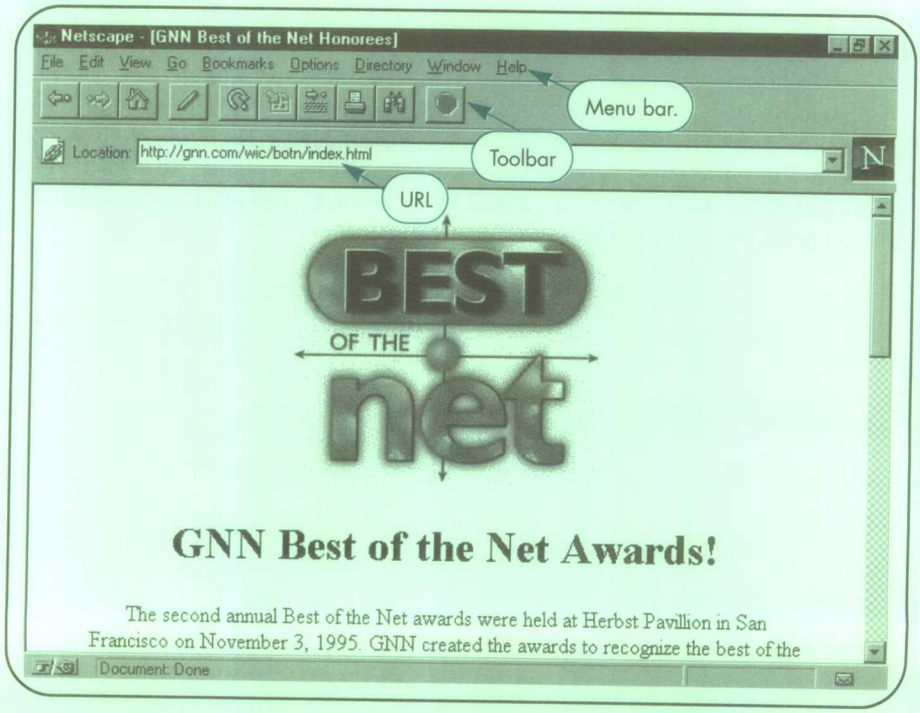
It makes little difference what operating system you use to gain access to the Internet. An operating system is the set of controlling commands for your computer system. If you are using MS-DOS, Windows, System (Mac), or UNIX on your computer, you can access the Internet. How that occurs may vary, but the concepts remain constant. For example, UNIX is a text-based operating system that does provide a graphical interface similar to other operating systems, such as Windows 95. The examples in this book are written around Windows 95. However, if you use another operating system you should be able to easily use the content of this book to guide you through learning about the Internet. Before you proceed you should have at least a rudimentary understanding of your operating system.

WHAT IS THE INTERNET?

For much of the last two decades, teachers, scholars, the media, and many others coined and used the term the *information age*. With the wide acceptance of personal computers, beginning in the early 1980s, many spoke of a societal change from industry to information. Ten years ago some people predicted that information would be the commodity of the future. However, ten years ago few could have predicted the amazing growth and near universal acceptance of an electronic system for sharing and exchanging information. The Internet initiated a communications revolution where millions of users send messages, listen to music, check live video cameras, participate in discussion groups spread around the world, read magazines and newspapers from across the world, and watch video news segments as routinely as most of us turn on a television or talk on the telephone. It is the Internet that bridges time, distance, and culture. It is where you can learn about almost any subject and communicate with almost anyone almost instantly.

The term Internet is one of those terms that you know when you see it, but it is hard to define. For some, the Internet is a system of telephone wires, fiber optics, satellite links, and other links that allow computers to connect to each other. Others define the Internet as a means for sending electronic mail or as a system for accessing information from sources all over the world. Still others view the Internet as an agreed upon software standard for sending and receiving computer data. All of these definitions are partially correct. However, the Internet is much more than a giant computer network. It is a cultural phenomenon that has made our desire for instant information and communication a reality.

Figure 1-1



The Physical Internet

A network is a collection of computers linked together to achieve some common goal. In most cases, networks allow users to share information. In business, networks enable one computer to send messages or get information from another computer. For example, a business may have a network that allows the sales department to access inventory files, new product announcements, and demonstrations of services. In schools, networks allow teachers to access student records, library catalog listings, and class registrations. Conceptually, the Internet is no different from any other network, except it is bigger.

The Internet is a network of networks. It is a series of networks linked using very precise rules that allow any user to connect to and use any available network or computer connected to the Internet. When you use any single computer to connect to the Internet, you have access to many other computers connected to the Internet. In other words, connecting to the Internet means connecting to tens of thousands of other networks, millions of individual computers, and tens of millions of other computer users.

1–2 HELPFUL HINT

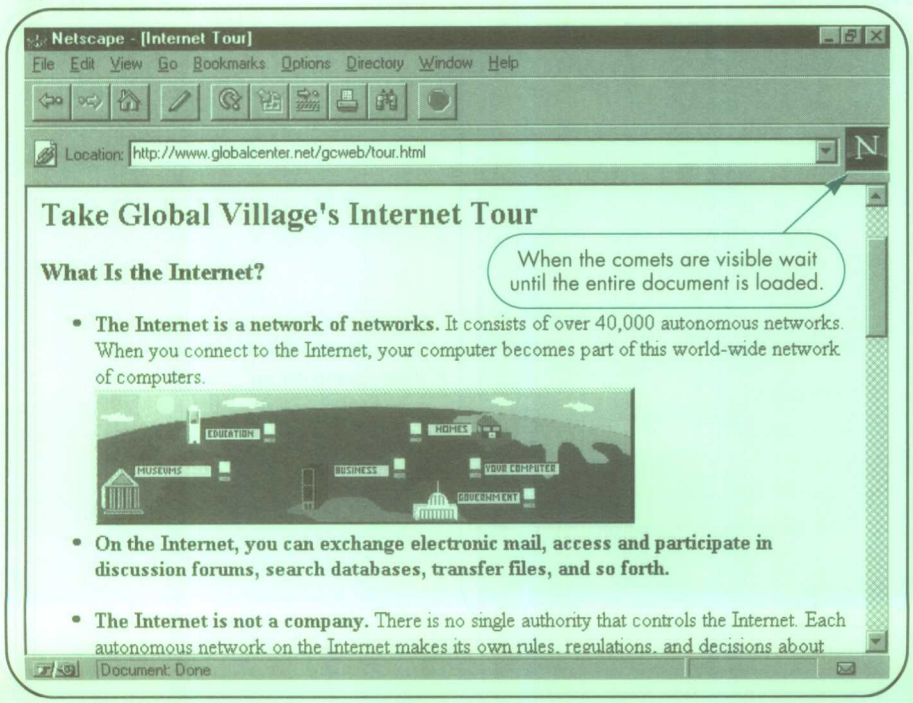
Just the Beginning

If you really want to become an effective Internet user you need to learn more about the communications processes that make the Internet operate. While beyond the scope of this book, it will be well worth your time to learn more about the history and the technical issues associated with Internet communications. On our web site, we have included access to several documents to provide you with more detail on the technical nature of the Internet. Try us at *http://www.irwin.com/cit/effect/net*

The Soft Internet

The Internet is also a communication system that uses physical connections (usually telephone lines, direct wires, fiber optics, satellite transmissions, etc.) to link one computer network to another. The Internet uses a standard of communication, called a **protocol,** that enables one computer network to "speak" to another. During the 1980s a new communication language, or protocol, emerged called **Transmission Control Protocol/Internet Protocol (TCP/IP)** that created a communication standard. In short, any computer network could communicate with any other computer network as long as they both used the TCP/IP standard protocol.

Figure 1-2



After TCP/IP was established, it became relatively easy for one network to communicate with other networks. The National Science Foundation (NSF) established one of the initial networks of networks, primarily for governmental agencies and universities to communicate and share research information. This initial link of university networks to five supercomputers, called **NSFnet,** became the backbone of the Internet.

The real strength of NSFnet and TCP/IP was that the design of the network made it very easy for other networks to join. Originally, NSFnet did not allow other networks to join (especially commercial or for-profit networks). However, new rules were adopted and soon it became very easy for commercial entities to join and participate on the Internet. This move opened up the world to the communication capabilities of the Internet.

The rules that govern the Internet rest with the **Internet Society.** It is a voluntary organization and is not run by the government or by any individual. Rather, it is a board that meets to set standards and determine resources. For example, it is the Internet Society through the **Internet Architecture Board (IAB)** that determines addresses for users, as well as the rules for accessing and using these addresses.

DOMAIN NAME SYSTEM

Another important factor that makes the Internet possible is an agreed-upon standard for addresses. Addresses on the Internet are, in many ways, similar to home addresses. Every network and every computer user must have a unique address. Without this address, information cannot be routed to its destination. The structure of Internet addresses is, therefore, very important.

The addressing system for the Internet is actually quite simple because of a process called the **Domain Name System (DNS).** Internet addresses are numerical and are called **IP Addresses** (for example, 128.16.4.23). However, most users never see or use IP Addresses directly because DNS provides a more meaningful and easier-to-remember name. The host computer converts a DNS to an IP Address in the background, so you don't need to know the numbers.

Figure 1-3