The Internet: Connecting Networks to Networks across the Globe

By this point, you should be beginning to see the value of connecting a stand-alone computer to the resources available through a network. Now what if you could connect that same stand-alone computer to the resources available on millions of networks across the globe? If those networks allowed you to connect to them and provided you with guest rights to all or some of their resources, you could access immeasurable amounts of information! That is the scope of the international networks of networks known collectively as the Internet or simply the Net.

The Internet is actually made up of millions of individual machines and networks that have agreed to connect, provide resources to each other, and share data. Initially, just a few select military and university networks connected, primarily for the purposes of research and national security. Since its early beginnings just a handful of connected sites, however, the Internet has grown to an estimated 200 million host computers distributing information across the globe, and it is still growing! A common protocol called TCP/IP (Transmission Control Protocol/Internet Protocol) is used so that communications between these diverse computers can be understood. Internet users, whose numbers are, at the time of this writing, estimated to exceed 600 million around the world and still growing at a rate of 10 percent per month, can connect, via their school or business networks or from home via modem to the computers within this vast network of networks. Any single computer can, by connecting to the Internet, access an almost unimaginable wealth of information. For educators, the potential to share our world’s collective knowledge base with our students is staggering.

But does this means an immense array of information become manageable and usable for a busy teacher? Even if you can access the Internet, how can you put it to work to enhance teaching and learning? How can we empower our students to use the Internet for their own academic and personal growth? To answer these questions, educators must first become familiar with the tools that the Internet and Internet applications provide to make its content accessible and responsive to users.

Internet Tools and Services

As the Internet has developed, a variety of tools and services have become available for our use. Some services are provided free to all Internet users. Others are offered as a part of a membership package when an individual subscribes to an Internet service. Still others are available for a subscription fee. To use the Internet effectively, it is important to be aware of the many types of tools and services available and how best to evaluate and select those you might want to use.

Internet Service Providers

The first step in using the Internet is accessing and connecting to it. If you are using your school network, the network itself has been connected to the Internet, and you can use that connection as an authorized network user. However, if you are connecting to the Internet from a home computer, you need first to connect your home computer to a network that is connected to the Internet to access the Net’s resources. Special networks that have been created to provide home and business computers a way to connect to the Internet are called Internet service providers, or ISPs.

ISPs are companies that provide home users with access to the Internet through their own network connections and communications software. Every ISP provides a series of phone numbers that home computers can dial via modem to attach to the ISP’s computer. In this type of scenario, the ISP computer is considered to be the host computer, and your home computer is the remote computer. The remote computer’s modem dials and connects to the host’s modem, thereby establishing a connection for communications. ISPs can be either local or national businesses. Typically, national ISPs offer access phone numbers in most major metropolitan areas, and local ISPs serve relatively small areas with local access phone numbers. For those who travel and need to connect to the Internet while traveling, a national ISP offers access via a local (or long-distance) phone number from most destinations. Accessing through a local phone number is an important factor in using the Internet. Most ISPs charge a service fee (typically around $20 per month) for providing Internet access, but if connecting to an ISP requires a long-distance call, those long-distance charges will cost the user extra, money that is typically paid to the user’s long-distance phone service provider. A few half-hour long “surfs” on the Internet across a long-distance line can end up being an expensive experience.

For the monthly ISP service fee, some large providers include a variety of services beyond simple access (see Table 7.3). Most offer email, and some offer extensive phone support. Some of the largest providers, sometimes called online services, include exclusive member services as a part of the subscription package. Different providers vary as much in the services they provide as they do in monthly charges. You should carefully investigate the services and charges for the local and national Internet service providers before signing up.

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<th>Table 7.3 COMMON SERVICES PROVIDED BY INTERNET SERVICE PROVIDERS</th>
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