Like residential cable, the upload speed for business-class cable is usually much slower than the download speed. For example, a typical plan that allows 100 Mbps for downloads can support only 10 Mbps for uploads. Thus, if you need to upload large amounts of data, you'll notice the performance drop.

Another drawback of business-class cable service is that it is, well, cable service. Your Internet connection is service by the same people who service cable TV in your community. Although business-class customers get priority service over residential customers, business-class service usually does not include response-time guarantees the way T1/T3 or fiber service does. So if your connection goes down, you might find yourself down for hours or even a few days instead of minutes or, at worse, a few hours.

- **Fiber optic:** The fastest, most reliable, and most expensive form of Internet connection is fiber optic. Fiber optic cable uses strands of glass to transmit data over light signals at very high speeds. Because the light signals traveling within the fiber cables are not subject to electromagnetic interference, fiber connections are extremely reliable; about the only thing that can interrupt a fiber connection is if someone physically cuts the wire.

  Fiber can also be very expensive. In some locations, a 100 Mbps fiber connection can cost well over $1,000 per month. However, the connection is extremely reliable, and response time to service interruptions is measured in minutes instead of hours. And prices are coming down, especially in metropolitan areas as fiber carriers continue to build out their networks.

- **Wireless providers:** In areas where wired service (such as cable or fiber) is not available, you may be able to find wireless service, which provides Internet access using cellular or other wireless technology.

## Sharing an Internet connection

After you choose a method to connect to the Internet, you can turn your attention to setting up the connection so that more than one user on your network can share it. The best way to do that is by using a separate device called a *router.* You can pick up an inexpensive router for a small network for less than $75. Routers suitable for larger networks will, naturally, cost a bit more.

Because all communications between your network and the Internet must go through the router, the router is a natural place to provide the security measures necessary to keep your network safe from the many perils of the Internet. As a result, a router used for Internet connections often doubles as a firewall, as described in the section "Using a firewall," later in this chapter.