

Wireless Freedom

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One of the widely used terms of our 21st century is "wireless." Today, people use wireless phones, keyboards, headphones, and speakers. Even microphones, game controllers, and computer mice are now wireless. Computer users want to be able to move freely, without tangled wires and stepping over cables. The demands of our technologically savvy society are moving more and more towards wireless mobility.

How can "going wireless" be useful? One situation that I found extremely helpful was setting up a wireless network system, also known as a Wi-Fi. At work, my laptop almost fell a couple of times when I tripped over the RJ-45 network cable that connects my laptop to our school's computer network. To protect my laptop and prevent this from happening again, longer cables were purchased. At first, these wires lay flat on the floor, and when I was done using them, I could roll them up and put them away. However, over time, the cables no longer lay flat and the tripping hazard returned. This was proven when a student came to my desk, tripped over the connection, and for the third time, I almost lost my laptop to the force of gravity.

At this point, I decided to investigate the wireless option more closely. When I first heard about Wi-Fi, a complete set-up cost approximately \$400. However, the prices have dropped since then, and I was able to purchase a wireless access point and a wireless card a few months ago for about \$130.

Initially, I experimented at home. I shared my Internet access between our two computers, a laptop and a desktop. With my laptop, I can now surf the Internet anywhere in the house and even relax on the patio without running a computer cable. Encouraged by the success and convenience of my wireless network at home, I tried setting up another wireless network at school. With the purchase of a couple of wireless access points and some wireless computer cards, we were set to go. We simply connected the wireless access points to our existing cable network. Now, some of our teachers can log on to the network and go online without using cables. I am also happy to report the number of "tripping over cables" incidents have dropped significantly.

The speed of transmission of a Wi-Fi depends on the standard. The wireless network at school has what we call an 802.11b standard which has a transmission speed of 11 megabits per second (mbps) up to 22 mbps and 802.11g which has a transmission speed of 54 mbps. There are systems that can now go up to 100 mbps which is the equivalent of a cable network.

However, one problem to consider with a wireless network system is security. It is fairly easy for someone to hack into your network because it is wireless. A student could bring in a laptop with a wireless card and try to experiment on the network. Manufacturers of Wi-Fi equipment have been working on a solution and they have come up with encryption, the process of transforming information from an unsecured form ("clear" or "plaintext") into coded information ("ciphertext"), which cannot be easily read by outside parties. An algorithm and a key control the transformation process. Nowadays, all Wi-Fi equipment comes with an encryption feature and the technology is getting more secure.

The following is a list of things needed to set up a wireless network (Wi-Fi):

1. A wireless access point with DSL/Cable router. You need a router to share your high-speed Internet connection at home. Most wireless access points on the market are already equipped with a router.
2. A wireless card if your laptop doesn't have a built-in wireless connection point. This is what you would attach to your laptop through the PCMCIA slot, usually located on the side of your laptop, as the computer's wireless access point.
3. An RJ-45 network cable if you are connecting the access point to your existing network.

Setting up a wireless network is not difficult. For the wireless card, you have to install the software and driver that comes with it and check the manual for all the settings. Repeat this procedure for the access point; they come with a CD for easy set-up. When I was setting up my Wi-Fi, I was able to figure it out myself. However, to enable the encryption, I called the technical support of the product manufacturer and they guided me through the installation step-by-step.

Overall, a wireless network has made my work environment more comfortable and user-friendly. Having the freedom to move my "workstation" around has been convenient and productive. I highly recommend detaching yourself from the limits of cable and exploring the freedom of mobility by going wireless.