The Automated Agent

By Gary B. Indianer

Why? ERR: Less!

I HAVE a love-hate relationship with technology. I love it when it works and I dislike it when it doesn't. Technology is supposed to make the producer's life easier, but sometimes it seems that it also can make things difficult. We recently incorporated a new wireless local area network (WLAN) into our network. It promised to free me from those tethered network cables, enabling me to roam about the office to work from almost anywhere, up to 1,000 feet away. After a month of having it installed on my laptop I must say, I love it, and, I hate it!

I was taught long ago not to believe everything that I read, and that relates strongly to the latest hype on wireless networking. Don't get me wrong, I love wireless networking, but…

To understand both my satisfaction and dissatisfaction with it, a good overview of the technology is in order.

The computer industry in general has become good at standardizing things, so it should not come as a surprise that there are several standards for wireless networks. Standards come from The Institute of Electrical and Electronics Engineers, Inc., better known as "IEEE" (www.ieee.org), a non-profit group consisting of more than 377,000 members in 150 countries.

For wireless networking, the producer should be aware of three standards. The oldest and most popular standard is known as 802.11b. The "b" standard is commonly referred to as the home networking version. It uses the popular unlicensed 2.4 ghz frequency range, the same one used by many cordless telephones and the new Bluetooth (www.bluetooth.com) wireless technology. The 802.11b standard is suitable in situations where a producer may browse the Internet or transfer an occasional file or two.

Transfer speeds under the specification allow up to 11 mbps, however, many manufacturers are implementing a new chip set that doubles that speed while maintaining compatibility.

The newest standard, known as 802.11a, was finalized late in 2001. It operates in the 5 ghz frequency range. The standard also

implements something called orthogonal frequency division multiplexing, which, suffice it to say, is much more efficient and allows up to five times more data to be processed than the "b" standard. Data transfer rates in an 802.11a WLAN can be up to 54 mbps. The "a" standard is recommended for producers using data heavy applications such as Act!, Gold Mine, or Access databases or who want to implement video conferencing.

A+B=G

Another wireless networking standard still to be finalized in 2003 is the 802.11g specification. The "g" standard will update the several years old "b" standard to include the orthogonal frequency division multiplexing found in the "a" standard, but it still will operate in the 2.4 ghz radio spectrum. This will enable the "g" standard to operate at the higher 54 mbps speed and maintain backward compatibility to the "b" standard. Look for a big push from vendors when this standard is approved.

Which One?

There are many considerations to take into account when implementing a wireless infrastructure. After a lot of research, my office settled on the 802.11a WLAN solution. The reason? Higher performance and less likelihood of interference.

The 2.4 ghz frequency spectrum is becoming crowded with devices, and my office already has a sophisticated wireless multi-line telephone system that uses it. To avoid any potential of degraded performance, we believed that our solution should avoid the 2.4ghz radio spectrum entirely. I have read articles and commentary of companies either barring 2.4 gigahertz telephones or scrapping their 802.11b wireless networks entirely because of the problems involved.

The 5 ghz frequency specified in the 802.11a standard ensures that our network will occupy its own radio frequency space and not disrupt any existing 2.4 ghz wireless systems already installed.

The Good!

The upside of a wireless network, particularly when installed on a laptop, is obvious. I can roam freely about and meet with clients instead of being tied to my desk. It also is a great solution for installing desktop PCs where wiring is difficult. At close range, performance on our wireless network is great and the system works flawlessly.

The Bad!

As well as the system works at close range, however, some things are not revealed up front. Buried in the owner's manual is a brief

discussion of problems with walls, doors, windows, and other kinds of solid objects found in a typical office. I researched many articles before the purchase, but this problem was not readily revealed.

The problem: Wireless networks do not like obstructions, they like big wide open spaces. That is OK if the producer's office is located in a field, but for many of us, walls are a reality. In an office environment, a wireless network's performance quickly can deteriorate to unacceptable levels. In contrast to the advertised "up to 1,000 foot" range of most systems, a wireless network's effective range traveling through walls in an office environment actually may be less than 100 feet.

The Ugly!

Distance problems may lead to difficulties when roaming around the office. On several occasions, losing the wireless network connection has caused some programs to crash, leaving me little alternative but to reset the computer to straighten everything out. This could lead a producer to an embarrassing moment if he or she is ill prepared for it.

Additionally, as the distance between the wireless access point and the computer increases, the network's actual performance decreases. While still connected to the network at 100 feet, the effective transfer rate could be as low as 1 mbps — a far cry from the original 54 mbps advertised. To help alleviate poor performance due to distance, additional access points may be added to enhance the coverage.

And the Good, Again!

No matter what the flavor, a, b, or g, the 802.11 wireless standard has a firm foothold in the networking ladder. For the traveling producer there even is a Web site devoted to help locate such facilities as hotels, restaurants, and office buildings that have wireless access points installed. That Web site is http://www.80211hotspots.com/.

The industry in general is moving toward combining the three standards into single use products, meaning that a future wireless device will be able to detect which kind of network is being used and connect to it automatically.

Wireless networking is here to stay. Many producers will be considering it as a solution to their networking in the near future. The producer should be forewarned, however: In the world of wireless networking, 1,000 feet really isn't that long. Wireless networking is great, but offers less than advertised. That is the reason I call it Why? Err: Less! And that is why I love it, and hate it.

A great Web site for additional information can be found at http://www.80211-planet.com.