Ready or not, here it comes!

By Rick Dearborn

Occasionally a technology comes along that has the power to significantly alter everything we do in society, and that technology is here now. We are at the beginning of a Wireless Revolution.

The Internet is going wireless; yet this development is about much more than being able to carry computers around with us. It is about connecting devices that have never been connected before; it is about getting information to and from places before impossible; and in the process empowering everything and everyone to do more.

Known by various technical names, Wi-Fi, 802.11, 3G, Bluetooth, and others, wireless devices are rapidly finding their way into schools, businesses, homes, and, - yes – automobiles. And, the unlicensed nature of many of these technologies is propelling their rapid implementation. Some are predicting that by 2008 (that is only 4 years from now!) wireless will be ubiquitous, with high speed wireless internet connections available just about anywhere in the United States. In the 4th quarter of last year alone, sales of wireless devices were three quarters of a billion dollars, and that is only the beginning.

Out of concern for channel availability and the potential for interference to other signals, wireless providers such as cellular phone companies and broadcasters must obtain site licenses at great expense. However, new wireless data technologies are being handled much differently. Because they operate at a very low power, and use a technology that dramatically reduces the possibility of interference between signals, the licensing occurs at the manufacturing level, not at the provider level.

What this all means is that once a wireless device has been tested and has received type acceptance for manufacture, virtually anyone with a balance in their checking account can purchase wireless equipment and set up substantial networks. As an example, in Aspen, Colorado, a private individual set up a wireless network that provides 1 Meg service to anyone who wants it in a 120 square mile area. And that service area includes every school, building, hotel and private residence.

In addition, there are several new wireless technologies in the final stages of development that will extend that reach. One, due out in 2005, promises 700 Meg connections to moving vehicles up to 120 miles per hour and un-relayed coverage areas up to 30 miles. Another is a low bandwidth solution for simple tasks such as turning things on and off. It is capable of actually creating it’s own mesh network of thousands of devices that only needs to be connected to the source at a single point.

The bottom line is that decisions to implement internal wireless Internet connections within our schools may become irrelevant as large-scale public, private and commercial networks begin to proliferate. And with students purchasing wireless capable devices off the shelf and potentially bringing them to school, the technology will be in our midst whether we are ready for it or not.

The task at hand is to understand what is coming, what the potential is for it's use in our learning environments, and begin strategic planning now.

Here are a few examples of what this technology will be doing in the world:

Imagine you are on a tour bus in Italy and wonder how your garden is doing back home. Taking out your portable palm sized wireless device, you access the whole house security system at your residence. Next, you connect with the wireless color security camera pointed at your backyard. Positioning the camera to see your garden, you zoom in for a closer look. Clearly the garden needs some water. Next, you access the wireless control for your garden hose, and while you are watching the sprinkler comes on and waters your garden. When you are satisfied that your plants have had a good soaking, you turn the hose off and return to the scenery passing outside your window.

Imagine being able to use a palm sized device to connect with, see and hear anyone we desire to, anywhere and at any time. Think of what it would be like to instantly conference an expert into a classroom situation, no matter where they are in the world, to help answer a student's question.

Imagine portable wireless devices being powered by fuel cells, instead of batteries, with continuous operating times measured in months, not hours.

Imagine a long-haul trucker that has just entered the mountains and pulls into a wireless capable truck stop to take a break. The wireless chip in the engine notifies the factory about the change in operating conditions. A factory technician then adjusts the engine for the new operating environment, all while the driver enjoys a cup of coffee in the truck stop.

With the increased capacity wireless connections afford, the potential for new uses of this technology are almost unimaginable. Off-the-shelf wireless devices are currently available that have 35 times the capacity of high-speed Internet connections found in a good-sized school. And developments are underway to increase that capacity to over 600 times. What is especially significant is that these capacity levels exist into individual devices, not just entire networks of computers.

Even more significantly, the wireless Internet may become a new Mass Medium in its own right. With wireless speeds that are already five times that of a DVD player, the possibility of distributing good quality television and radio is very real. And with that capability in the car, or anywhere else a wireless connection is available, the wireless Internet may soon become a new type of broadcasting, with the ability to target very specific demographic audiences.

In the school environment, the media capabilities afforded by wireless will continue to blur, if not eliminate, the lines between computer and audio-visual technology.

When the automobile was invented, entire new support industries were created. Gas stations, service shops, tire manufacturers, roads, and glass tinting companies, all resulted from this new invention. A similar opportunity exists now. Wireless technology is opening opportunities for new products and services never before dreamed of.

Conversely, as with the auto, existing products and services will be affected, and unfortunately, many will drop away. An example is the impact the automobile had on the support industries for the primary means of travel in those days, the horse.

As an educator involved with technology, you need to ask yourself these questions:

- Do I understand the significance of this new technology?
- How will it change my environment?
- How will I respond to the changes in my environment?
- How can I use this technology to improve the performance of those in my institution?
- How can I stay ahead of the game?

Wireless technology will be a driving force for change in education and the economy for the next 20 years, and beyond. As a professional educator, it is important that you understand this new technology and begin strategic planning now.

As a speaker and consultant, Rick Dearborn works with organizations that want to improve their performance with wireless technology. For information visit http://www.rickdearborn.com/, or contact him at rick@rickdearborn.com.