



New Technology

By Rick Dearborn

Will WiMax Be 'The New Radio'?

The arrival of a new technology could have a broad impact on the radio industry. There is every indication that it will influence the way radio delivers programming and the way it tracks audiences. Surprisingly, there has been little if any discussion about it within the industry, as it is a broadcast technology that broadcasters did not develop.

ENTER WIMAX

The new technology is being called WiMax. No doubt many readers are already aware of Wi-Fi, a popular form of wireless technology intended to free computer users from their electronic tethers by creating wire-free local area networks or "hotspots" with a workable range of 300 feet. As long as you stay put, the system works great. But, when you move between hotspots, you must reconnect, often to another service provider. That limits Wi-Fi's ability to be a truly mobile technology.

Great as it is, Wi-Fi is only a taste of what's on the way. Last year, a consortium of more than 200 member corporations — rather like a who's who of the communications industry (AT&T, Cisco Systems, Intel, Lucent, Motorola, Nokia, Time-Warner etc.) — approved the new WiMax wireless standard. Equipment is scheduled for standards certification this summer.

WiMax has been designed to have a range of 30 miles from a single, well-located transmitter; within that range, data transfer rates are anticipated to be 70 Mbps. To put that in perspective, most radio stations use ISDN connections to retrieve high-quality audio from remote broadcasts. A single WiMax connection has the equivalent capacity of more than 500 ISDN lines. As a further comparison, many radio stations have T-1 connections to the Internet for their computer networks. A single WiMax connection would offer the equivalent of 60 T-1 lines, or seven DVD-quality video signals to each individual wireless user.

At least initially, WiMax is likely to have many of the same connecting challenges as Wi-Fi. In other words, you need to stay within the hotspot to be connected. But, clearly, a metropolitan-area hotspot has a lot more going for it than one that covers only a portion of an office building.

Already on the fast-track is an enhanced version of WiMax, scheduled for approval this summer. With field trials projected for 2006, enhanced WiMax will be for use in moving vehicles. Not only is it proposed to work at highway speeds, but it also is being designed to reconnect easily as you move from hotspot to hotspot, in a manner similar to cellular telephones.

With the network of established cell towers already in place, some analysts are predicting that, as early as 2008, you might be able to get a high-speed mobile wireless Internet connection nearly anywhere in the United States. Imagine having a browser in the dashboard of your car, with preset buttons for "favorites" that could include Internet radio stations around the world, weather maps, music, movies, television, your security cameras at home, and even a picture phone.

IMPACT ON RADIO

Clearly, a new medium that can deliver audio and video into moving vehicles coast-to-coast is a broadcast medium. Industry people working with AM, FM, HD or satellite should sit up and take notice — and with this new standard being tested next year, radio should do it quickly. (For information on WiMax, visit the WiMax Forum website at www.wimaxforum.org).

Consider the mass media of today: radio, television, film, recordings, newspapers, magazines, books, etc. Each has developed in sync with advances in the varying delivery technologies. But today, a website can deliver audio, video and text on the same page at the same time — truly multi-media. As bandwidth capabilities have increased, the technical quality of web-based delivery has followed

suit. Add wireless delivery, and you have a broadcast medium that is capable of a seamless integration of print, audio and video material.

WiMax actually is only a small part of what is coming, as several other technologies are being rolled out. UWB (Ultra Wide Band) promises ultra-high-speed connections between devices at short range. Already demonstrated is home-entertainment equipment that will allow the user to distribute high-quality media signals between rooms without wires. A next step may be transformation of how radio routes audio signals around a facility and produces content, potentially without wires. However, unlike WiMax, UWB proponents are currently locked in a standards battle that is restraining implementation.

RFID (Radio Frequency Identification) technology is beginning to replace bar codes for product identification. Already in use at Wal-Mart, it allows wireless tracking and cataloging of physical objects. Soon, wireless RFID may allow you, while shopping in the grocery store, to access your refrigerator at home to see what tagged items you have on hand. At check-out, all you will need to do is push your loaded shopping cart of tagged items through the checkout lane, without removing them from the cart.

RFID technology has the potential of revolutionizing audience ratings. Imagine having RFID tags in audience radios, enabling stations to know not only what audiences are listening to, but exactly when and where, with instant and continuous real-time feedback.

It is hard to think of an area of daily life that wireless technology won't impact. Imagine driving back from a ski vacation and being able to turn up the heat at home. A sales rep

may be able to directly schedule spots with a handheld device during a client meeting in a restaurant.



THREAT OR OPPORTUNITY?

All technical innovations can be considered a threat or an opportunity. With the advent of new wireless technologies and others certain to follow, the radio industry, while appearing mature, may actually be in its infancy. One way or another, all appearances are that radio could be entering the dawn of a new era.

As listeners become increasingly connected to devices that transform their lives, they will no longer have to decide which one to turn on to receive programming. Whatever device they use — PDA, cell phone or something we can't yet envision — already will be media capable. The increasing challenge will be to snag audience attention in an environment that is far more distracting than anything we can comprehend.

It is logical to believe that there will be a continuing thirst for valuable information and entertainment. Following the pattern being set by

the cable industry, successful media probably will become more specialized than ever. For example, imagine a person who likes golf. Would that person listen to radio programming customized for golfers: music, commercials for golfing products, golf tips, and stories from other golfers about their experiences? It seems likely. How about backpacking, antique cars, home projects, or any other activity? It is hard to imagine hobbyists who would not want to tune in to customized radio programming directed at them.

Certainly, WiMax and other related technologies will have growing pains. Delays from unforeseen technical problems and the usual standards issues are anticipated. However, as we observe what has been learned from technologies such as Wi-Fi and cellular, as well as the level of industry-wide support for WiMax as a universal standard, there is every indication that this technology will succeed.

For what may be the first time, a new form of broadcasting is coming, one that broadcasters have not had a stake in developing. It has come from outside the radio industry, and it appears to be right at the doorstep.

Radio is in the audio-content business, and content will remain king. To address this challenge and seize an opportunity before it blindsides the industry, however, radio must remain alert, work together and think outside the box. If broadcasters can succeed at that, this may indeed be the sunrise of a new radio era. ☒

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