

Curtain Rises on WiMax

Network Is Set to Launch in Baltimore

BY DON CLARK

BALTIMORE usually isn't considered a technology mecca. But many people in Silicon Valley, and other high-tech centers, will be watching closely to see what happens after Sprint Nextel Corp. flips the switch on a new wireless network Monday.

The service is a milestone in the gestation of WiMax, a technology that chip giant Intel Corp. and its allies have spent six years developing. Baltimore residents will be the first in the U.S. to be offered a version of WiMax that both provides wireless Internet access to home users and allows laptop users with special modems to stay connected around town at speeds comparable with wired broadband services.

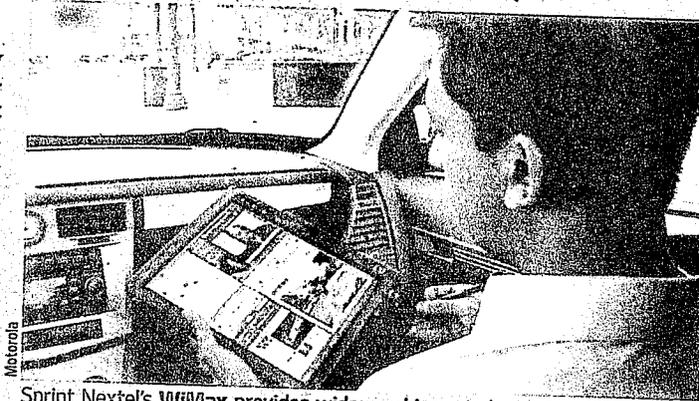
Sprint's Xohm unit and Clearwire Corp.—the two are scheduled to merge by year end—plan to offer similar services across the nation. But WiMax faces stiff competition and other big hurdles, making the rollout in Baltimore a crucial test of how consumers will react.

Sprint is expected to charge mobile users an introductory rate of \$30 a month—about half the rate of comparable cellular data services—and offer a home-usage plan for \$25. WiMax modems, which typically plug into USB slots in a laptop, will start at about \$60.

"It's here and it's real," says Sean Maloney, the Intel executive vice president who has spearheaded its WiMax push.

Over time, Intel and other companies expect to make WiMax circuitry that will be built into laptops, cellphones and other portable devices for little additional cost—just as the short-range Wi-Fi wireless technology is now.

The possibilities were attractive enough to prompt a \$3.2 billion infusion that the Sprint-Clearwire combination is slated to receive from Intel, Google Inc., Time Warner Cable Inc. and Bright House Networks Inc. "This is not just the same old telco participants," says Benjamin Wolff, chief executive of Clearwire, which will manage



Sprint Nextel's WiMax provides wide-reaching wireless Internet access.

the WiMax rollout once the merger closes.

But WiMax faces a series of chicken-and-egg problems. A Baltimore resident who purchases a WiMax modem, for the moment, can't use it outside the city. Conversely, a manufacturer of WiMax hardware faces a small potential market until other U.S. cities are switched on. Because of disparities in radio frequencies in different countries, WiMax users may have a hard time roaming internationally until multifrequency hardware is introduced.

Meanwhile, users have other choices without the same geographic limits. Carriers such as Sprint, AT&T Corp. and Verizon Wireless, which is owned by Verizon Communications Inc. and Vodafone Group PLC, offer data services in many cities based on third-generation cellular networks. Users that move beyond their coverage territory typically stay connected at the slower rates of older networks. A WiMax user in Baltimore who strays too far will simply be disconnected, says Jeffrey Belk, a former executive at cellular-chip supplier Qualcomm Inc. who is managing director of the San Diego investment firm Ict168 Capital LLC.

Some 27 million people worldwide subscribed to 3G data services this month, up from 11 million last September, according to Informa Telecoms & Media, a London-based research firm. There were just 2.4 million WiMax users, the firm estimates.

WiMax backers expect the picture to change quickly. Among other things, WiMax is designed to exploit broad chunks of radio

spectrum—which Sprint and Clearwire hold in most U.S. cities—that are well-suited for applications such as running video.

People familiar with Sprint's plans say Baltimore residents will see average download speeds of two megabits to four megabits a second—on the order of residential digital-subscriber-line, or DSL, service offered by phone companies—and upload speeds of one to two megabits a second. Those figures, especially for uploading data, exceed what most 3G services now offer. Sprint plans to later offer a service that combines WiMax and 3G technologies, so users will be able to roam more broadly, these people say.

Companies with 3G services expect to add faster variants soon, but WiMax backers believe they have a sustainable edge in cost. Clearwire's Mr. Wolff estimates that his company will be able to transmit a bit of data for about a tenth the cost of 3G networks.

Others aren't so sure, since 3G services have a head start and can use larger volumes to drive costs down. The WiMax launch "is a good thing for the marketplace, but I think it's going to be a very challenging business model and AT&T and Verizon will be able to respond," Mr. Belk says.

Over the long term, many 3G backers plan to respond by moving to a technology called LTE, for long-term evolution, which relies on many of the advances that WiMax uses. "Sprint might have some sizzle but I think we really have the beef," says Mark Siegel, a spokesman for AT&T's wireless unit, which plans to adopt LTE in three years.

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Sprint takes wireless service to the max in Baltimore

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Enlarge By David Hobby for USA TODAY

Sprint workers Roger Ho, left, and Paul Grunwald examine installations at a WiMax transmission tower in Ellicott City, Md., in suburban Baltimore.

By Leslie Cauley, USA TODAY

Monday, Sprint will launch wireless WiMax services in Baltimore, marking the beginning of what could become a new era in mobile broadband.

The mobile data network — which will be marketed under the Xohm brand name — is designed to cater to the needs of laptop and home broadband users, not cellphone users.

Prices will start at \$10 for a day pass, good for 24 hours of unlimited usage. Monthly service starts at \$35. There are no contracts.

To use the service, Baltimore customers will have to buy a special WiMax "aircard" or modem, which cost about \$45 apiece. There are also special launch discounts, including a \$50-a-month plan that offers subscribers unlimited data usage

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for life.

Voice services will eventually be added, Xohm President Barry West says. For now, Xohm customers can easily use any Internet telephony service, such as Skype.

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The network, which provides a lot of bandwidth, can also handle high-definition video streaming, peer-to-peer file sharing and other capacity-guzzling applications, says Lee Mellon, a Sprint field technician who has been testing the WiMax network in Baltimore for weeks.

In Baltimore, Sprint is promising 2 to 4 megabits per second, though it says surfing speeds can rocket to 10 megabits or more, depending on the number and type of applications running. Conventional 3G wireless networks, such as the one AT&T uses to support the Apple iPhone, average about 1.4 megabits.

Such is the potential of WiMax, a powerful but so far largely unproven mobile technology, that it can, Sprint says, turn whole cities — or countries — into one, giant hot spot.

Eager to move things along, Sprint is merging WiMax assets with Clearwire, a small carrier backed by cellular entrepreneur Craig McCaw. Over time, they plan to turn the USA into a single, seamless surfing zone. The merger is expected to close by year's end. The combined company, which will be publicly traded, will be called Clearwire. Backers include Google, Intel and Comcast.

WiMax networks are under construction in Washington, D.C.; Portland, Ore.; Philadelphia; Dallas/Fort Worth; and Chicago. All are scheduled to be ready by early next year. By the end of 2009, 60 million to 80 million consumers are expected to have access to WiMax. By 2011, 200 million will, the companies predict.

One big obstacle for Xohm is that it will initially be limited to downtown Baltimore, says Roger Entner, senior vice president at Nielsen IAG.

If Sprint can prove its WiMax case, consumers could win big, says Shahid Khan, a senior partner at IBB Consulting. "They'll have better services and better devices at better prices."

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