The Bandwidth Battle: How High Must It Be?

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U.S. wireless operators are pouring millions into upgrading their network infrastructure to make high-bandwidth applications such as video streaming possible. While some of these potential new applications are targeted at the consumer, many operators believe the most lucrative users for these new networks will be the enterprise and business customers.

But do business customers need these costly new networks to meet their needs? Lower-speed networks such as Cingular's Mobitex network, which only transmits data at a rate of 8 kilobits per second, has a very dedicated following of enterprise users, many of which have said they have no immediate intention of upgrading to a higher speed network.

Likewise, Motient, which emerged out of bankruptcy last summer, has managed to attract many Fortune 500 firms to its service, including United Parcel Service, which uses Motient to log package pickup and deliver information via specialized devices. Motient’s network covers the majority of the United States and has data speeds of about 19 kilobits per second.

In addition, Nextel's packet data service, which transmits data at speeds of between 15 kilobits to 20 kilobits, has a loyal enterprise customer base and the company's executives say they won't upgrade their data network to a higher speed until customer demand justifies such an expenditure.

Industry insiders say low-speed data networks are fine for many enterprises, particularly if their requirements are limited to small text-based messages. "If the prime purpose of communications is e-mail and short messages, they don't need faster networks," says Andy Seybold, head of the Andrew Seybold Group. "For text-based communications there is nothing wrong with these networks."

And Seybold isn’t alone in that sentiment. According to WolfeTech Development CEO Surya Jayaweera: “No matter how well-designed the application is, for small snippets under 2 kilobits, the pipe size doesn’t matter.” WolfeTech is a software development company that provides custom applications for enterprises and uses Cingular’s Mobitex network. Jayaweera says customers are happy with the Mobitex network and he sees no need to migrate to higher speed networks until there is customer demand. Though Cingular's Mobitex network is a relatively slow speed data network, it has other advantages that many business customers find appealing.

For example, Mobitex doesn’t have latency issues that plague some of the higher speed networks. In addition, it has the ability to push content to the device. "When e-mail comes down, it gets pushed to the device," says Bob Egan, founder of Mobile Competency. "This is very convenient and not available on other networks."

While Cingular, which last month announced it was going to expand its Mobitex network coverage in 2003 by adding capacity in some metro areas as well as expanding its footprint outside existing metro areas, is the only Mobitex operator in the United States, there are 31 Mobitex networks worldwide and new systems are being built. According to Jack Barse, executive director of the Mobile Operators Association, the trade-offs between a low bandwidth and high bandwidth network are simple: Lower bandwidth networks don't drain battery life and have broader coverage. "As soon as you go up in bandwidth, two things happen," Barse says. "The battery life shrinks, the terminal shrinks, and the coverage footprint shrinks dramatically. Our experience is that users want devices that last days without having to recharge or replace the battery. That's not possible with higher bandwidth speeds."

Plus, Barse asserts, even though Mobitex has data speeds of 8 kilobits, it can outperform other networks that have faster air links because of Mobitex's network infrastructure and architecture. "Mobitex is very strong. None of the new technologies are plug replacements or functional equivalents," Barse says.

Yet experts say while these lower bandwidth networks do provide a great service for many businesses, the need for higher bandwidth networks is real. "There is a very significant demand for bandwidth," Egan says. "As the screen size for a device grows, so does the demand for bandwidth. You need more bandwidth to send information to devices for applications like Web browsing or for downloading e-mail attachments, graphics and pictures."

Whether the demand for high bandwidth applications will come to fruition as carriers expect is still unknown. As Seybold points out, countries such as Korea and Japan certainly experienced huge demand for applications such as sending pictures via the phone or video streaming. "We don’t know what the demand will be," he says. "We need to see the networks in action first to find out what works."

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Until then, slow speed networks such as Mobitex, Motient and others will be around to keep enterprise e-mail and other low bandwidth data applications flowing.