

Cellular components in new devices open new markets

January 21 2009, By Andrew D. Smith

The addition of nearly 100 million cellular connections over the past five years has actually created a big problem for U.S. carriers such as AT&T Inc.

Near-total market saturation threatens their long-spectacular revenue growth rates. Over the next couple of years, the company can probably keep sales soaring by selling data plans to existing voice customers. After that, it's all up to Glenn Lurie.

Lurie heads AT&T's Emerging Devices division, and if he has his way, the typical American will soon own half a dozen cellular radios. Under Lurie's plan, even machines themselves will soon become AT&T customers.

No, Lurie does not think anyone wants half a dozen phones. Instead, he -- along with pretty much everyone else in the cellular industry -- thinks many devices will soon come with phone-like technology built in.

Such devices already exist.

The Kindle, an electronic book reader from Amazon, is probably the most famous example. A cellular radio inside the device lets Kindle users download any book that Amazon sells from any location with cellular reception.

"Embedded devices" such as the Kindle are still rare, but they're rapidly

proliferating.

Already this year, AT&T has teamed with computer makers Dell and Asus to introduce laptops that feature embedded cellular modems and a pricing scheme copied straight from the world of handsets. AT&T subsidizes both devices so that customers pay \$99 up front but commit to paying for two years of data service.

On another front, AT&T has teamed with Sony to support a Wi-Fi-enabled camera. The device automatically senses when it enters one of AT&T's more than 20,000 public hot spots, connects to the Internet and allows users to post their pictures straight to Flickr and other sites.

Such devices are probably just the tiny tip of a massive iceberg.

"Once you start thinking about how connectivity would make different products more useful, you realize that the potential is unlimited," Lurie said. "The wireless revolution isn't ending. It's just starting."

It's easy to imagine how laptop users benefit from cellular modems.

Other uses require a bit more imagination, but possible applications are numerous.

Cameras will be able to post pictures online from anywhere. Portable videogame machines will allow players from around the globe to compete. Music players will download new songs instantly. Pet collars will let owners locate missing cats and dogs. GPS systems will talk to each other to provide live traffic data on every road.

"The carriers aren't kidding themselves about the potential here. Wireless connectivity adds compelling functionality to a lot of devices," said Carl Howe, director of Anywhere Consumer research at the Yankee

Group, a technology research firm in Boston.

"Bringing the subsidies-and-contracts model from handsets to portable computers strikes me as a particularly disruptive idea. It has moved hundreds of millions of handsets. It could move an awful lot of computers."

And consumer devices form just half the equation for ambitious carriers.

Machines that talk only to other machines provide another big source of potential revenue.

Automobiles already demonstrate why carriers and investors have high hopes for the machine-to-machine, or M2M, market.

GM's OnStar system connects in-car computer chips with central monitoring systems. A crash triggers a call from the car to the central monitoring system, which then alerts a human operator who can dispatch help.

What's next? Sensors that sound the alert when a bridge ices over. Vending machines that accept credit cards. Meters that read themselves and report back to utilities.

Sam Lucero, senior analyst for M2M Connectivity at ABI Research, estimates there are about 60 million M2M connections worldwide. By 2013, Lucero estimates, that number will reach 230 million.

"The numbers are astronomical, but there is one big caveat for the carriers and investors," Lucero said.

"Machines generally transmit much less data than people. Average

Revenue Per User is more than \$50 for people, but it tends to range between \$5 and \$15 a month for machines. Carriers can only make money in this market if they are very efficient, and their revenue averages will suffer no matter what they do."

Given the importance traditionally placed on ARPU (pronounced R-poo and repeated incessantly in wireless circles), carriers have been loath to do anything that might bring their averages down. But analysts say the time is right for experimentation.

"No one is going to pay \$60 a month to buy a data plan for a camera they only use during vacations," said John Jackson, a senior analyst at CCS Insight. "But they will pay some money, so there are clearly profits waiting for the carrier that figures out how to price services correctly."

What is the correct pricing scheme? No one knows yet, but Lurie says that AT&T will keep experimenting until it figures out what works.

"It's not a question of whether these applications will become a huge market for us. It's a question of when," he said. "We just have to focus and execute so we can get there faster than our competitors."

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