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Look Out for LTE

State and local governments await this emerging wireless technology.

Karen D. Schwartz

The next-generation mobile broadband network Long Term Evolution (LTE) is set to take the world by storm.

Wireless carrier MetroPCS in September launched commercial LTE service in Las Vegas, with expansion in several areas set to occur in late 2010. In December, Verizon Wireless launched 4G LTE service in 38 major metropolitan areas. Both Motorola and Alcatel-Lucent have introduced LTE-enabled devices as well.

Why all of the interest? In general, LTE, which runs in the 700-megahertz spectrum, is much more secure, is less susceptible to interference, covers a wider area, and is more reliable than 3G-based technologies. It's also much faster:

Verizon estimates average data rates to be 5 to 12 megabits per second on the downlink and 2Mbps to 5Mbps on the uplink in real-world environments.

"There had to be a shift from 3G, which isn't that adept at organizing itself and adapting to signals around it, and is prone to interference," explains Robert Syputa, a senior analyst at wireless market research firm Maravedis. "LTE addresses many of these issues, which are of particular interest to government agencies."

Safety First

State and local government CIOs see a lot of potential for the technology. In the area of public safety, LTE will enable first responders to wirelessly connect via two-way video to crime scenes and accidents, enabling faster response.

While many state, county and municipal agencies are still deciding whether LTE is the right move, the public safety community has settled on LTE as the best way to achieve nationwide network interoperability and fast response. In September, Motorola and Ericsson announced that they will provide an LTE-based mobile broadband solution for public safety customers; Alcatel-Lucent also is working on a solution.

In Seattle, Bill Schrier, chief technology officer and IT director, plans to use LTE for the entire spectrum of public safety, along with other city services such as transportation. With LTE, field units would be able to monitor traffic throughout the city to more quickly dispatch units to handle backups or accidents. Also, the city's intelligent transportation system could become wireless via LTE. "That would allow it to extend to places you can't get to with wires," Schrier says.

Currently, the 700MHz spectrum, one of the preferred bands for LTE, is authorized by the Federal Communications Commission for use by fire, police and emergency medical units, but the FCC, along with Congress, is considering extending the use to transportation and utilities. The rest of the 700MHz band is available to commercial networks, and LTE also works in commercial areas in the 2.6-gigahertz band.

Phil Baughn, executive director of Kentucky's Office of Broadband Outreach and Development, says LTE is ideal for the state's new e-Health network. The network will require significant bandwidth to transmit images, and must cover rural areas.

"LTE's 700MHz band operation means a longer reach and better building penetration when it gets there," he says. "In



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101
Number of LTE deployments planned or in progress in 41 countries
Source: Global Mobile Suppliers Association, August 2010

Kentucky, our 'last mile' is often rural, and LTE offers the potential for a more economical reach into areas currently underserved."

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