

Making the most of microwave

By Carol Wilson

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Microwave networks are hardly a new technology, but some cellular industry veterans are teaching this old dog some new tricks — and aiding education systems in the process.

Conterra Ultra Broadband, a Charlotte, N.C.-based company, is using microwave technology to deliver 10 Mb/s to 1 Gb/s connections to schools, government offices, health care facilities and businesses in communities that can't be easily reached via fiber optics.

"FCC-licensed microwave cost is very low, and the frequencies are readily available," said Dennis Francis, executive vice president and chief operating officer of Conterra. "Since we get an order first, we actually don't even deploy significant capital until we have an order in hand. Also, using Ethernet-based radios to provide the schools with a wide-area network is a very cost-effective approach."

Francis and much of the Conterra brain trust, including President and CEO Stephen R. Leeolou, came from Vanguard Cellular, one of the first cellular operations in the U.S., which eventually became part of Cellular One and now Cingular Wireless. The company deliberately hired many former Vanguard employees, Francis said, "because they are known quantities."

The company initially targeted schools because of their distributed locations and the need to connect rural school sites to each other and to their district offices. Today, more than 400 schools are under contract to receive microwave connections from Conterra.

"We are giving them more bandwidth and cheaper bandwidth," Francis said. "Most of them have traditionally linked schools to the district office with one or two T-1s and then linked to an ISP from the district office. We've been able to go in with anywhere from 10 [Mb/s] circuits all the way up to the sweet spot right now, which is 100 Mb/s, although we can go up to a [Gigabit per second]."

Fiber is not available in these locations and not likely to be available any time soon, Francis said. The microwave hops are deployed as many as 20 miles apart.

"We are providing them with an order of magnitude or more bandwidth than they have had," he said. "It enables them to do different things such as distance learning and video-type presentations. They will also do things to help them control their costs such as server consolidation. If they have one or two T-1s at each school, they have to have a highly distributed architecture, with servers at every site. If they have more bandwidth available, they can put all the servers back in a central location, which is more cost-effective as well as more convenient for having trained people on site to do upgrades or maintenance."

With its infrastructure built out in many areas, Conterra is now branching into networks for the health-care industry, government units and, on a limited basis, enterprise customers.