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A wireless alternative to outdoor fibre

After its leased line rates increased by \$20K a month, a Toronto college decided to connect six buildings at Gigabit speeds using BridgeWave radios. Find out how the technology prevents interference

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When the cost of maintaining a fibre optic network soared, Toronto-based George Brown College turned to what it's calling 'virtual fibre' to keep buildings on campus connected.

The school deployed GE60 wireless links from BridgeWave, a Santa Clara, Calif.-based provider of Gigabit Ethernet outdoor wireless hardware. The deployment, completed in just a couple of months, resulted in identical performance to the previous fibre optic network, but at a much lower cost, said Andrew Riem, manager of infrastructure and operations for IT services at George Brown College.

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"It had the high capacity we were looking for because it would be serving an entire building which could hold 500 to 600 computers," said Riem. Before this, the school leased a fibre optic network which operated just fine, except the provider changed the billing scheme to include minimum distance, he explained. The result was the leasing cost would rise to \$20,000 per month.

Montréal-based engineering and distribution firm Trispec Communications was brought on board to deploy BridgeWave's technology.

Besides the virtual fibre being more cost effective, another attraction was the quick time to deployment, said Riem. And so far, since the deployment of four GE60 wireless links was completed in 2006, the network has functioned as it should and successfully supported the school's increased use of bandwidth-hugging activities like in-class video, distance learning and information-sharing applications, he said.

The school has since expanded the network with two additional links, resulting in now six connected buildings from the previous four. Riem notes that George Brown continues to use the fibre optic network to connect its main campuses.

Had the school continued to use its fibre optic network in the same manner, the annual cost would have been about a million dollars a year, said BridgeWave's senior vice-president and chief marketing officer, Gregg Levin. "Radio links that are \$20-30,000 to install is going to payback very quickly compared to those high service costs."

BridgeWave's customers tend to fall in those verticals where the business requires multiple buildings, like education, healthcare, state and local governments, and network operators, said Levin. The increasing use of Web 2.0 applications is a driver behind many customer network upgrades, he said, however, a large extent of the network traffic is in fact private LAN traffic, "in other words, taking this LAN and stretching it between buildings".

"So we're trying to give people a full fibre speed gigabit but in a wireless form, so when it's difficult or expensive to get fibre, they have a lower cost and fast to deploy alternative."

Levin acknowledged that although the network can be subject to interference at lower frequencies, the radio links operate at a higher frequency of 60GHz. And, the antennas send out beams with only one degree in width "which makes it almost impossible to be interfered with because anyone else using the frequency is probably not going to be lined up right on top of you in close proximity," he explained.

This also means that many links can be deployed and businesses can reuse their spectrum. "In the same area, there can be multiple links that are just pointed a little differently in direction, and they don't interfere with each other either," said Levin.