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Wireless Broadband for Northern Virginia

This independent buildout shows how the latest gigabit radios can allow an ISP to compete with any telco.

by **Alex Goldman**

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The profit margins on T-1 lines are such that it's possible that the phone company could deliver a T-1 to every home, [some ISPs think](#).

But WISPs are pleased that the telcos still charge outrageous prices for a business quality 1.5 Mbps line they call a T-1. Marty Dougherty, CEO and founder of Leesburg, Va.-based Roadstar Internet Services, a wireless ISP, says his customers are the people and businesses that are tired of taking what the phone company wants to sell them.

But his buildout nearly didn't happen. The local government considered building its own network, which would have been a mistake.

The buildout

Loudoun County was considering a massive fiber build but wisely decided to find out how much that would cost. The county was told that the buildout would cost \$350 million, and operational costs would be high. It dropped the plan.

Roadstar proceeded to build a backbone that it calls INET Loudoun. The backbone is built around BridgeWave's AR80X radios, capable of 1 Gbps throughput over licensed 80 GHz spectrum, dropping to

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100 Mbps if there's a rain problem. It is supported by Alvarion 5.4 GHz equipment that can maintain transmission in torrential rain.

"We worked with BridgeWave on a new feature," says Dougherty. During intense rain, the 80 GHz radios hand off to Alvarion 5.4 GHz radios. Traffic slows, but doesn't stop.

A major problem for every WISP is backhaul, and Dougherty has a huge advantage in this area. "We're the home of the internet," he says. "MAE East, which is now run by Equinix, is in our backyard. We can get bandwidth cheaper than you could just about anywhere."

The INET Loudoun network allows Roadstar to [offer](#) up to 25 Mbps CIR for \$2,600 per month for a one year contract.

Is the government participating in the buildout? Dougherty says the government is not paying for the buildout, but did give Roadstar a list of all its locations, "in case we want to make a proposal to them."

Other advantages

Dougherty's background is in telco sales, and that gives his WISP a big advantage over most other players. All successful WISPs now understand the technology they use. But many do not keep regular accounts, and many have not needed to build a sales and marketing team. Dougherty even has a director of corporate communications, a one person PR team, who pitched this story to us.

"I spent 18 years in the telecommunications business," he explains. "A big chunk of that was at Newbridge. We built carrier class networks and management systems and provisioning systems, all tied together with Bellcore billing. I understand what's critical for large scale deployments, and at Roadstar I've focused since day one on building a network that scales."

And you're using wireless to avoid the ILEC? "That, and we offer a service that doesn't exist. For our residential customers, the only competition is satellite, and for business, we offer bigger bandwidth and a quicker installation."

You don't compete on price? "We focus on offering something nobody else offers," Dougherty says. "A business can get DSL for a low price or even wireless broadband for less than \$100 per month. We focus on customers that need more than a DSL or cable line or a T-1. Often, cost constraints squeeze customers into a T-1, and the only option above that is additional T-1 lines at the same price."

In the past, landlords were also a big headache for WISPs. They had unrealistic expectations about how much money WISPs could earn and therefore charged impossible rates. Now, Dougherty says, the real estate market has turned and he's able to get roof space for free. That doesn't mean that lighting a building is free. Those 80 GHz radios cost a lot of money. But at least landlords are happy when he says he can increase the value of their building without any

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investment on their part.

The network's biggest fan

The star customer of the new network is Ashburn, Va.-based defense contractor [Telos](#). Telos' John Wood, who is CEO, chairman of the board, and director of Telos, said he was so impressed with Dougherty's plans when he first heard about them that he told Dougherty, "if you can do it, I'll be your loudest fan—and if you fail, I'll be your loudest critic."

Wood is the network's loudest fan.

"I'm getting 30 times the throughput for about 70 percent of what I was paying for T-1 lines," says Wood. "It has been incredible. Dougherty did not oversell the network. He told me what it would do."

The benefits are beyond price savings. "I can think about doing different things than in the past when we were constrained by the price of the pipe. We've had fiber in the building for years, but it was cost prohibitive so we never lit it. We had T-1 lines instead."

Wood understands that Dougherty's advantage is that he's not tied to legacy technology. "What I liked about him was that he didn't have this overhang of fixed infrastructure, so the wireless service didn't compete with his other service. Other providers, AT&T and Verizon or whoever, have huge copper and fiber and T-1 infrastructure and it's hard for them to offer wireless technology because it will compete with their other revenue streams."

Wood cannot talk in detail about what Telos does for the government but the [overview](#) is public. Security is very important for the part of the business that's on the public internet. BridgeWave touts the AES 256 security of its radio and Wood says his security experts were impressed. "BridgeWave does a good job of underselling and overperforming."

But the bottom line is this: an office with 350 people in it connected to the network and, Wood says, the only change they noticed was a huge speed increase.

—End

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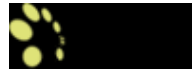
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