

# Lessons Learned From Three FTTH Industry Pioneers

Deploying FTTH in rural areas is a challenge, but it's become easier and more affordable over the years, say these industry veterans. The payoff is great – for the first time, young people can stay in their communities.

By Cheri Beranek ■ *Clearfield*

**A**t the **BROADBAND COMMUNITIES** Summit in April, I had the pleasure of moderating a panel of three leaders who have deployed fiber to the home in very challenging rural areas – Vince Tyson of Plateau Telephone, Casey Quint of Wiggins Telephone and Ron Ellis of Rural Telephone. Following are highlights of our discussion.

**Q:** *I've heard many of you say fiber isn't all that mysterious – in fact, that there are more similarities to copper than one would expect.*

**Vince Tyson:** When we got into fiber, we found there was a stigma about its being expensive. I started to ask “Why?” and “What's the true cost?” What came to me fairly quickly is that it's just a distribution network, so it made sense to build it like copper. Although fiber is a high-capacity network, the services carried over that glass still have the same value to customers as the services carried over copper. So, to be cost-effective, we looked at it and said, “OK, how can we build it like copper?”

Now, clearly there are some differences – splicing, for example, has to be done differently, and of course, the economics are different – but, by and large, today's fiber networks have a lot more in common with copper networks than some of the earlier fiber networks did. That's one thing we like about Clearfield. One of the reasons that we've continued to do business with them over the years, is, as Cheri says, that they listen. They really did. We went to them

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and said, “You know the pedestals we've used for our copper network – can't you take those and just put some of your fiber management inside?”

Deploying an open architecture for splicing drove down the splicing cost because the fiber splicers don't have to open up cases. The fiber splicer that we were using in Minnesota devised a little mounting platform that could clip right onto the front of the pedestal, put a fusion splicer right there and worked right in front of the ped to get in and right out. This reduced our cost of splice from upward of \$60 to more like \$15.

**Ron Ellis:** Fiber has changed a lot over the years. Back in 1996, Rural Telephone didn't want to throw away old plant, so we had an open tray lying in a pedestal with copper on the back side and fiber on the front. Now everything is inside with the newer builds, and we need an appointment to get into a

customer's house to work on batteries. Other than that, everything we do, we treat like copper.

**Q:** *How about IP and IPTV? Certainly that's not a copper technology.*

**Casey Quint:** Wiggins is just getting ready to deploy the TV side of things. We've migrated everything over to IP. T1s are going away. Customers might have 10 T1s to a cell tower, and those are gone overnight when customers find out they can get Ethernet service at low cost. That's where fiber has really been great for us. We get a lot of work-from-home people who want a 10 Mbps dedicated service to their company in Denver, and we can do that now. It's been great to see that growth and be able to offer that service to our customers who before couldn't get any kind of Internet at all. Now they can get a 100 Mbps Ethernet connection to Denver – to wherever they want.

## About the Author

*Cheri Beranek is president and CEO of Clearfield, which designs and manufactures fiber management platforms and enclosure systems. Learn more at [www.clearfieldconnection.com](http://www.clearfieldconnection.com).*



### Casey Quint, Plant Manager, Wiggins Telephone

Wiggins Telephone serves an extremely rural area of Colorado with customers as far as six to 10 miles apart. With a copper plant that hadn't been upgraded since the late 1970s, Wiggins had limited DSL service but recognized that its customers needed IPTV, high-speed broadband and Ethernet services. Fiber, it determined, was the only viable option.

The project was started in 2008 but did not build up steam until Wiggins received an ARRA grant to bring fiber to more than 2,000 square miles. Today, near completion of the project, 1,500 customers are served with fiber. Total costs are about \$5.5 million dollars.

With a substantial investment per subscriber, the company was under significant pressure to deliver. Today, Quint is pleased the company can offer services to customers who previously had to rely on slow satellite service. Many of these subscribers are farmers and ranchers who operate their businesses from their rural locations.

Wiggins is working with Colorado Communications Transport LLC (CCT), an 11-member consortium that provides middle-mile access in northeast Colorado and backhaul to downtown Denver. Before it had CCT's dedicated fiber link to Denver, Wiggins relied on the incumbent provider for bandwidth and was limited to DS3 service (about 45 Mbps). Now Wiggins has access to 10 Gbps service in its office. "We can deliver whatever our customers dream of," Quint says.

**Q:** *Are you finding that these new networks are changing the economics of your communities?*

**Casey Quint:** Before, a lot of kids would move away, and we'd never see them again. Now these kids are able to move back to the farm, or close to the farm in our town. They're working from home. It's really good to see the kids staying in our community. We've got the realtors involved and worked to make them understand what we're doing, and those realtors help us bring in people who might not have ever looked at our farming community. People here work at the hospital, on the farm or at the telephone company, so to have a diverse group of people come in and work from home has been great for us. Even down to the 80-year-old grandma who has her Netflix box running that her grandkids helped her set up, or Skype – we've just seen amazing things.

**Q:** *I often hear that 60 to 80 percent of the cost of delivering fiber to the home is labor. Have you seen that to be the case? What have you done to keep down labor costs?*

**Vince Tyson:** Some years labor costs are OK, but this year labor costs are really high because people finally have fiber in their hands. Last year and the year before, there wasn't as much going on in the area we're in, so our contractor costs were really good. It's hard to see labor costs jump as much as they have, but that's part of the game, and you have to figure that into your budget and prepare for a possible jump in those costs.

**Ron Ellis:** We were very fortunate. The biggest labor cost we have by far is indoor wiring on customers' homes. The rest of the costs are running about 50-50 on our projects at this time. The other thing we have to remember is that the

manufacturers have already driven their costs down. Labor costs do not go down, so it's really hard to hit a 50-50 plan like the old days. You're always going to have more labor costs than materials costs.

With Clearfield, with our vendor of choice for ONTs, or with anything else, cost has been driven down by more than 50 percent and in some cases almost 80 percent since the years we started playing with fiber to the home, and that makes it so much easier and so much more economical for us. Fiber is less expensive to build than the copper plant is today.

**Q:** *How do you market high-speed services to rural areas?*

**Ron Ellis:** If it's a new area, a CLEC area, we have a sign-up event. If it's not, we stuff bills or run newspaper ads. The best way to market is often to go to a basketball game or something that brings people into town and visit about



### Ron Ellis, Director of Operations, Rural Telephone/Nex-Tech

Rural Telephone, which received nearly \$100 million in stimulus dollars, is rolling out one of the largest federally funded fiber builds in the country. Its project is also one of the most complete – construction started in May 2010, and the project is now 87 percent finished. The company has deployed more than 200 miles of fiber in a little less than two years.

Ron Ellis, who is responsible for all regulated and deregulated plant operations as well as for the organization's research and development, has been hands-on since the first home was connected to fiber in 1995. Ellis reports, "We've been pretty active with a lot of contractors. We also have our own in-house construction crew. We have in-house engineering. Plus, we're using three other engineering firms. We've been using prime contractors, and I can't even count how many subcontractors everybody has. This build will get completed well ahead of schedule."

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it. Once a neighbor or two has the service, it really takes off.

**Vince Tyson:** We're not selling technology; we're selling to meet a need of customers. People want more, and sometimes they make the assumption that, living in a rural area, they can't get it, and they don't even ask. They're surprised when they find out what we're doing or that they're next on the list to get fiber in a particular area.

**Casey Quint:** We do a lot of similar things, but really our marketing is the technicians out in the field or out in the community at events. We're a small enough community that, once the neighbors find out they can get this service, everyone in the area is calling in. Once we hooked up one person just to test things out, and we had 30 calls the next day wanting our service.

**Q:** *In this expanding world of wireless, does fiber still have a position in your thinking?*

**Vince Tyson:** I'm a big believer in wireless. Customers want mobility. They've already shown us that. On the voice side, people will pick a wireless phone over a wired phone any day. I believe most companies, if they're not in the

wireless business, really ought to look at how they can get into that business because that's what consumers want.

However, when you look at the services offered for fixed wireless and at the data caps, it suggests that every company has spectrum constraints. So a fiber network complements a wireless network. The two work hand in hand. You can't be wireless only, and you can't be wired only.

We have to have services that differentiate us from the competitors, and the way you do that is to have a service that is blended together. We're not in the business of selling a POTS line anymore or DSL. What we should be selling is communications, information and entertainment.

**Ron Ellis:** I have to agree with that. You definitely need Wi-Fi in the house. You should be able to walk in from outside and have a call automatically transfer over to your Wi-Fi inside, offloading data traffic from the wireless networks.

We've got several fiber-to-the-tower contracts with wireless providers. They're getting 50 Mbps out to the towers, but when you divide out your access points and divide out your overhead and everything else, there just isn't the

bandwidth. It still needs to be fiber to the home, in my opinion.

**Q:** *As we wrap up today's program, could you provide a quick tip or lesson learned – something you didn't know when you started, but that our audience should know as they leave the room?*

**Casey Quint:** We were lucky deploying when we did because we got to listen to a lot of people. I went to a lot of companies and looked at their deployments. Make sure to go to every company you can and see how they're doing things, and that will help you do it as well.

**Ron Ellis:** One thing we look at in a rural area: If we get a cut, what can we fix in a day's time? Our biggest fiber [cable] is our 288. We may have multiple 288s getting out to a rural area, but that's what we base our design on because I know that if we send two splicers there, within a 24-hour window we can have every customer back in service.

**Vince Tyson:** Keep your economics analytical. Don't let fear and emotions drive design. Work with other companies, look at alternatives. Fiber to the home is the technology of the future. Most people would say that, 50 years from now, copper is not going to be doing what our customers want to have. The question is, when are you going to make the transition and how can you do it in a way that makes sense for your business? Start now so you have time to do what's important, rather than waiting until you have to do it. ♦



### Vince Tyson, Chief Operating Officer, Plateau Telephone

Vince Tyson had years of experience deploying fiber in the frozen tundra for Paul Bunyan Telephone of Bemidji, Minn., and with CHR Solutions and Ragland Engineering. Today, managing the operations of Plateau, a communications company in eastern New Mexico that provides wireless and wireline services throughout a 50,000-square-mile region, he is responsible for a network that runs from Amarillo to Lubik to Albuquerque and will now be extended to El Paso and other parts of the Southwest. With the help of an ARRA middle-mile grant, the organization is now investing in its transport network.

Tyson says, "In the transport side of the business, everything is migrating to Ethernet. Fiber is really the only technology that will provide the services our customers want, and we're starting to work with some large cell phone companies with backhaul. Everybody wants to go to higher capacities, and Ethernet IP is the best technology for that. We're getting out to the more rural areas [where the network] passes fairly few people, so the economics are a challenge. We've hired our own construction crew in-house to start chipping away at 150 to 250 miles per year. It'll probably be a 20-year project to reach those last customers, but we're just going to fund it out of cash flow and keep working at it until eventually we get every member over to fiber."