Watch Out for FTTH Gigabit Deployment Weak Links

There's more to delivering a gigabit connection than stringing fiber around town.

By Trevor Jones / *OTELCO*

Many municipal networks have chosen to deliver gigabit speeds to residents. At first glance, this seems logical. Fiber networks are certainly capable of delivering gigabit speeds, and if service providers are going to make the investment in fiber, they'll want to bring the promise of something much better than what residents have today in exchange for the community's investment.

Unfortunately, it's not that simple. Many factors involved in delivering and supporting broadband service go way beyond the design of the service provider network. Ultimately, service providers must be able to demonstrate that they are delivering the promised service. That requires understanding where their responsibilities end and making sure customers know what they need beyond that point to get the full benefit of a new service.

Let's discuss three key examples of less-obvious problems gigabit service providers need to have solutions for.

DEFINING A DEMARCATION POINT

Service providers often struggle with defining a clear "demarcation point." Put simply, the demarcation point answers the question, "Where does network performance responsibility become the customer's rather than the service provider's?"

Traditionally, service providers have used the modem or optical network terminal (ONT) as the demarcation point for their services. When a service provider asks a customer to plug a computer directly into the modem to test speed, it's demonstrating the demarcation point in action. The service provider is attempting to determine whether performance issues are with the provider's service or the customer's home network.

Delivering a gigabit and proving it to customers will require service providers to have clearly defined demarcation points and procedures for testing to those points. Now more than ever, the technical limitations of a user's home networking equipment and internet-enabled devices are a major limiting factor.

GRAPPLING WITH WI-FI

If a service provider decides to extend its demarcation point beyond the wired port on a modem or an ONT, it will need to grapple with the complexities of Wi-Fi. Of the devices in the home that can limit network performance, none are more important than the Wi-Fi router itself. An out-of-date router simply isn't capable of gigabit speeds, and even a modern 802.11ac Wi-Fi router can deliver gigabit speeds only over short distances and without interference from things such as walls, floors, furniture and signals from other electronics. For this reason, mesh Wi-Fi networks are starting to become more common in well-connected homes. Mesh networks distribute Wi-Fi transmitters throughout the home to limit the impact of interference and improve performance.

Service providers that decide to deliver gigabit internet will have to determine if they or their customers will be responsible for Wi-Fi. If customers are responsible, providers still need to define minimum requirements for the Wi-Fi devices they should use. If providers plan to deliver Wi-Fi, they'll have to consider whether to provide a single access point, a mesh Wi-Fi network, or both on a situational basis. Either way, they'll need testing procedures that determine whether the device is functioning properly while limiting the impact of interference.

GIGABIT-CAPABLE SPEED-TEST SERVERS

Even though most home users will never utilize a full gigabit with today's devices and services, they will still want to be able to prove they have it. If service providers advertise gigabit speeds, customers rightly believe they should "get what they are paying for." Unfortunately, even if computers or mobile devices are new, properly equipped and free of malware, users may not be able to test on their favorite speed test server and get a gigabit per second result. This is because gigabit service is still not common in U.S. markets, and many speed-test servers out there simply aren't ready. Before offering gigabit speeds, service providers should make sure to identify – and possibly deploy – speed-test servers that can produce a gigabit result.

As I alluded to previously, even if providers do everything right and build a bulletproof broadband network, a customer's computer or mobile device can still be the weak link, especially if it's infected with malware and viruses. In such cases, only consumer education and good local resources with the time and skills to help can solve the problem. ❖

Trevor Jones is vice president of marketing, sales and customer service for OTELCO, which owns independent telephone companies in seven states and partners with several community networks in Massachusetts. Contact him at trevor.jones@otelco.com.