

A man with short, light-colored hair, wearing a light blue button-down shirt, stands in front of a building. The building has a large white 'WB' logo on a curved surface. The background is slightly blurred, showing architectural details of the building.

KEEPING CONNECTIVITY IN FOCUS

Tellabs solutions help power
Oconee County, South Carolina's
FOCUS project

By M.J. Richter

PHOTO: ROGER BALL

“The impact of the network for economic development in Oconee County is going to be huge.”

— *Mike Powell*
Director of IT,
Oconee County

No one has a silver bullet when it comes to solving today’s tough economic problems. However, state and local governments know that broadband connectivity can play a big part in their efforts to boost economic growth and create jobs.

Sometimes just announcing that broadband is coming is enough to retain existing businesses and attract new ones, as officials in Oconee County, South Carolina, have discovered.

Situated in the northwestern tip of the state, Oconee County is in the process of building a 270-mile fiber-optic network called Fiber Optics Creating Unified Solutions (FOCUS). Despite the fact that the project won't be completed until next spring at the earliest, the promise of broadband access has already persuaded one company to remain in Oconee County rather than relocate to Georgia, and possibly even to expand its local operations.

Mike Powell, the county’s director of IT, says still another company was trying to decide whether to locate in a bordering state or come to Oconee County.

“The decision factor ended up being the FOCUS project,” he says. “So that’s already 2 examples, before we even really have turned our network up. The impact [of the network] for economic development is going to be huge.”

A self-sustaining middle-mile network

The FOCUS network is a “middle-mile” project, or extension of the Internet backbone. Internet Service Providers (ISPs) will connect to the network so they can provide last-mile access to Oconee County business and residential customers.

Powell says that 4 ISPs have already signed up to provide last-mile service, once the FOCUS network is up and running, and county officials are talking with 3 more.

Currently, one ISP predominately serves Oconee County, providing DSL-based connections at speeds of 1.5 Mbps to 6 Mbps — but only to one-third of county residents.



“Due to demographics and geographic limitations, like mountains and lakes, other counties are isolated, so they don't have connectivity. We're a natural fit to provide it for them.”

— *Mike Powell*
Director of IT,
Oconee County

“Right now, it's a monopoly,” Powell says, “and if we can bring fair competition to an open-access network, we will have the ability to drive the price down and the quality up.”

Maximizing competition among ISPs is one critical goal in the county's plans. Another is to generate additional revenues by leasing dark fiber to service providers, cell-tower operators and even neighboring counties.

“Due to demographics and geographic limitations, like mountains and lakes, other counties are isolated,” Powell says, “so they don't have connectivity. We're a natural fit to provide it for them.”

Although some service providers have expressed interest in leasing dark fiber, Powell says Oconee County also hopes to persuade some of them, along with cell-tower operators, to obtain lit-fiber transport from the county as well.

To fund the \$14.3-million FOCUS project, Oconee County is relying in part on a federal broadband-stimulus award of \$9.6 million. The remaining \$4.7 million will come from transport fees paid by other counties, ISPs and cell-tower operators.

“We’re not going to be making money off it,” Powell explains. “The business model is not developed around the taxpayers or the residents. Our goal is to leverage cell towers and transport through other counties to pay back the citizens of Oconee County, instead of having to raise rates.”

Ring around the county

To be deployed in a concentric-ring topology, the FOCUS network features a core ring with 3 proposed points of Internet connectivity to other carriers. Several sub-rings will link to the core ring, with Ethernet concentrators providing IP connectivity. The sub-rings may use dedicated fiber back to network operations centers (NOCs) or a shared aggregation fiber, depending on location and traffic volume.

The 4-node backbone, anchored by the Tellabs® 7100 Nano™ Optical Transport System with built-in ROADM technology, will link NOCs in Walhalla, Seneca and Westminster, with the fourth node at Clemson University in Clemson, SC.

Powell notes that the Clemson node will not only promote economic development but will also function as a peering facility for ISPs, one which he hopes will generate even more revenue for Oconee County.

“There are 5 different carriers that terminate inside Clemson University. Basically, that’s a POP. Our goal is to put a box there, do some provisioning and then offer services to other ISPs in our area. This is where the Tellabs ROADM comes in — those will be

POP: Point of Presence
ROADM: Reconfigurable Optical Add/Drop Multiplexer

different wavelengths and capabilities that will provide light back to them.

“We can get light all the way down to...Atlanta, or we can go up to Charlotte, NC,” he says. “Some of these ISPs are really hungry for lots of bandwidth. If we can give them a hop down to Atlanta, they’ll end up paying a fraction of the current per-Mbps DSL-grade connections that are currently in Oconee.”

FOCUS will also deploy the Tellabs® 7300 Metro Ethernet Switching Series and the Tellabs® 1100 Multiservice Access Platform with GPON OLT modules at the 4 aggregation hubs throughout the county.

The Tellabs 7300 platform will support 1-Gbps metro Ethernet services for county businesses and schools, while the Tellabs 1100 platform will provide GPON-based broadband service, at speeds of 20 Mbps to 40 Mbps, to residential customers.

One-stop shopping for a complex project

Tellabs’ ability to supply a ROADM-designed network, a metro Ethernet solution and a GPON platform enabled Oconee County officials to streamline the procurement process.

Jeff Barton, Tellabs sales director, points out that federal broadband-stimulus projects require the award recipients to go out for bid.

“We were able to demonstrate that there was no other single vendor that could provide all 3 aspects of the network. Otherwise, the county would have had to deal with multiple vendors.

“In concert with our channel partner, AFL Telecommunications of Duncan, SC, we were able to deliver a joint solution,” Barton says. “Together, we could provide Oconee County with a one-stop shop, plus AFL could provide everything in terms of installation and ancillary equipment.”

GPON: Gigabit Passive Optical Network

OLT: Optical Line Terminal

Phasing in the network construction

Powell says the county is building the 270-mile network in 3 phases and, as of early May, had completed about 116 miles of conduit and installed roughly 85 miles of fiber. The goal is to finish construction by February or March of next year.

Although Oconee County does not plan to use the Tellabs 7100 platform's ROADM capability right away, Powell wanted to future-proof the FOCUS network, in terms of flexible wavelength provisioning.

“As we grow, we're limited in the amount of fiber connections between each NOC and Clemson. So doing 88 channels per fiber, that is a lot of flexibility. Out of the gate, we're probably not going to need it, but,” he adds, “if economic development continues, I really think within the next 2 to 3 years we're going to utilize that.”

When completed, the network will cover 90% of the county and interconnect with adjacent cities and states. Linking all county facilities, schools, a medical center, a technical college, libraries, public-safety locations and more than 150 “anchor institutions,” the FOCUS network also will pass about 27,800 households and 2,400 businesses.

County residents and businesses are clearly enthusiastic about getting access to the coming broadband network. In fact, Powell says it's “actually turning out to be a little bit of a fight as to who goes first — which is a good thing. It reaffirms our assessment of why we did this project, because there's a big, strong need in our community.” ■

