DALTON UTILITIES EMPOWERS ITS COMMUNITY WITH BROADBAND SERVICES

A North American municipal utility launches telecom service, achieving 60% penetration while bolstering regional economics and its own financial future.

Dalton Utilities is a municipal provider of electricity, gas, water and waste water management services that has been in operation since 1889. Its utility service area covers five counties with 83,000 customers for water, gas, wastewatert and stormwater in northwest Georgia between Atlanta and Chattanooga. In 1999, Dalton Utilities already was using fiber optics to support its internal operations and, by 2000, had added a few high-speed internet and point-to-point services for government, schools and large industry. The utility then decided to move forward with fiber to the home (FTTH)-based telecom services, driven in large part by its mission as a public entity to enhance economic prosperity and quality of life in an area that had no significant broadband infrastructure. In 2003, Dalton Utilities deployed a retail broadband service named OptiLink within its service area and now has 12,000 customers for high-speed, fiber-based Internet, phone and television. The utility as a whole employs about 300 people, including 50 OptiLink employees, with annual revenue of $200 million. OptiLink itself generates annual revenue of around $19 million.

AT THE SPEED OF IDEAS™

Alcatel·Lucent

CHALLENGES

- Increasing economic attractiveness by bringing fiber-based broadband telecom to a broad service area of 83,000 customers and five counties where none existed before.
- Dealing with regulatory hurdles and competitive issues such as open records requests from competition
- Finding a primary partner who could provide experience-based technical and business guidance, including ROI expectation and "future proven" technology that would provide assured strategic growth capability.

SOLUTIONS

- Point-to-multipoint and network management:
  - Alcatel-Lucent 7340 BPON
  - Alcatel-Lucent 7342 GPON
  - Alcatel-Lucent Access Management System Classic and Modular (AMS)
- Wide Area Network and network management:
  - Alcatel-Lucent ESS 7450 Ethernet service switch
- Local Area Network:
  - Alcatel-Lucent OmniSwitch 6850 series

BENEFITS

- Greatly enhanced technology and economic platform for the Dalton area, putting it on par with much larger communities in attracting world-class business
- IP-based technologies reduce staff and operational costs, enhancing collaborative work within various divisions of the utility
- Decreased outage time for all Dalton customers, improved customer response to service calls and operational savings through better network visibility and reduced truck runs.
- $19 million in annual revenue generated by OptiLink – enough to maintain a seven- to ten-year ROI window in order to progressively retire older electronics, keeping the network cutting edge
- Infrastructure base for a future smart grid to enhance Dalton's operations, service and savings

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Hank Blackwood, Dalton Utilities/OptiLink

THE CHALLENGES

In the early 2000s, Dalton Utilities, a municipal provider located in northwest Georgia, recognized the need to improve the economic base of its service area with a fiber-based broadband telecom service. The revenue model for this venture was important, but the utility believed that its main goal as a public entity was to enhance its service area's economic prosperity and quality of life. Dalton is known as the Carpet Capital of the World, largely supported by the flooring and chemical industry, and the idea of some diversification was appealing.

"A regional telecom study indicated that we were sort of in a no-man's land of connectivity," says Hank Blackwood,

Dalton's Senior Vice President of Utility Services. "We weren't seeing the kind of broadband development more common in Atlanta, Birmingham and other larger cities in the region. Nobody was building anything. We already had seen the benefits of high-speed broadband on our utility operations and recognized that other businesses needed that kind of connectivity also. The residents of Dalton wanted to take that next step, but the incumbent providers weren't doing it."

As Dalton Utilities began project planning, it faced many critical considerations. To begin, it had to choose a fiber to the home (FTTH) vendor. "Knowing that the startup costs were going to be high, we wanted a

partner that was going to be around for the future and also didn't want to purchase something that was going to be obsolete in five years," Blackwood notes. It was clear that the utility needed reliable partners with proven experience in the field.

WHY ALCATEL-LUCENT?

Dalton Utilities initially consulted with Alcatel-Lucent as it was planning its OptiLink service in the late-1990s. The company considered several potential partners as it gathered information to determine the best way forward for the project. Blackwood points out that at the time Alcatel-Lucent already had several FTTH deployments globally, providing more assurance that a few years down they road they would still have the capability to scale and utilize new technologies. "Early on, we asked Alcatel-Lucent for many examples of what our deployment would look like, what its experience has been in other places, working with them and other consultants to put together a business plan for this," he remembers. "They actually had a roadmap that said 'Look, we're not just deploying a product and hope everybody buys it. This is just the first step.' We felt that their model was more future-proven than those offered by other vendors."

In addition to proven experience in the market, Alcatel-Lucent also offered the latest technology, and a turnkey solution. "They came to the table with partners for video and the telephone interface – 'pick a telephone switch, and we can interface to it' – the soup to nuts – and their original deployment strategy with ATM as part of the backbone – we thought that made sense," Blackwood notes. "Also, because Alcatel-Lucent had Bell Labs engineering we felt that they would be in the marketplace the longest. We launched with [Broadband Passive Optical Network] BPON equipment, which was ATM based and meshed really well into our existing network. The pricing was the same across all the models we evaluated but Alcatel-Lucent made it easier."

THE SOLUTIONS

Dalton launched OptiLink in 2003 with full triple-play services on a point-to-multipoint BPON, which it now is migrating to a Gigabit Passive Optical Network (GPON) platform. The network utilizes a ring of Alcatel-Lucent ESS 7-series Ethernet service switches for Internet and telephone traffic over the network, the Alcatel-Lucent 5620 Service Aware Manager, the OmniSwitch 6850 series of stackable LAN switches to support triple-play services, as well as a new generation of backward-compatible GPON optical line termination (OLT) and optical network terminal (ONT) shells installed at POP sites throughout. Its Alcatel-Lucent modular access management system (AMS) supports overall configuration, maintenance and troubleshooting.

In just 150 days from launch, OptiLink had its first customer. "We already had a SCADA system that monitors over 40,000 points throughout the network. With the operational efficiencies and related cost savings we gained – we were able to showcase to the industry "hey…here's what technology can do," Blackwood notes. "The idea was that we were going to deploy and launch this service quickly and get out in front of the competition. It was a phased project, starting with more densely populated neighborhoods

"We want Alcatel-Lucent to continue to be our partner in as big and bold a manner as they have been for the past seven or eight years. We need their partnership to assure that we stay current."

Hank Blackwood, Dalton Utilities/OptiLink

downtown and where fiber already existed – the "low hanging fruit," then progressing out into suburban and rural areas, covering approximately 20,000 potential customers overall. Within Dalton's city limits, OptiLink now has a 60% customer penetration, with 50% to 55% in the more rural parts of its service area and 80% to 90% in some downtown neighborhoods, significantly exceeding the utility's original expectations of 30% to 40%.

THE BENEFITS

With its OptiLink rollout, Dalton Utilities has managed to combine cutting-edge technology and world-class service with local roots – improving its own efficiency and the region's economic platform. The architecture's IP-based, automated technologies meant that OptiLink hasn't required hundreds of people on staff. "With the automation we could do these services fairly inexpensively," Blackwood says. "That allowed us to roll out of the gate with the full triple play services and features, including 80 cable TV channels (basic tier), 1.5 Mbps of symmetrical internet service and voice services – all for $75 a month. Back then, that was unheard of. Now, Dalton Utilities has increased the basic Internet speeds to 10Mbps down 5Mbps up,

with monthly residential triple play pricing at a competitive US $96."

The OptiLink infrastructure also has enhanced collaborative work within various divisions of the utility, which include wastewater, water treatment, stormwater management, electric and natural gas. Specific benefits have included decreased outage time for all Dalton Utilities' customers, improved customer response to service calls and operational savings through better network visibility and reduced truck runs.

"Our financial goal was to build enough revenue in order to retire older electronics and keep our network cutting edge – to stay in a seven- to ten-year window on payback in order to reinvest and keep everything fresh," Blackwood says. "Now, if our customers come to us and need something different, we want to be able to provide a well thought out approach to be both a low-cost and best-value provider. Alcatel-Lucent's engineering services group also has given our guys the ability to get way down in the weeds in troubleshooting equipment, so we've been able to tighten up internal issues."

Ultimately, Dalton Utilities believes that OptiLink has prevented businesses from leaving town, which was the company's primary goal at the outset. "I know that we have reduced some of their operating costs because our products are cheaper than the competition, and they have access to fast telecommunications infrastructure that they can use," Blackwood notes. "Just as we needed those capabilities to take us to the next step, other local businesses did as well. We certainly have stepped up the level of competition and forced other providers to step up their games accordingly, so it's been good for the community."

NEXT STEPS

Working with Alcatel-Lucent, Dalton Utilities now has converted more than half of its OptiLink customers to the new GPON network.

"That's benefiting us because of the newer versions of ONTs allow higher bandwidths to the end user, and IP traffic is the name of the game here – it's speed," says Blackwood.

The OptiLink infrastructure also has provided a technology platform for a larger smart grid, for which Dalton is now developing a pilot project. "Because Alcatel-Lucent has experience with other municipals in the same business, they've been able to give us help in developing our smart grid plans," Blackwood states. "We are exploring ways to give customers more information about their utility services so that they can help control their costs, and we're confident that we will reap benefit from that."

Blackwood adds that Alcatel-Lucent has helped his company modify its business plan going forward, providing plenty of ideas for ways to decrease the time to ROI and increase the revenue in general, supporting transitional costs and further upgrades, infrastructure and electronics, with a long-term financial strategy that he says is running ahead of its average investment payback schedule by about two years. He notes that his 120-year-old company plans to be around for many decades to come.

SUMMARY

"We worked closely with Alcatel-Lucent from the beginning, conducting a lot of beta testing back and forth on the BPON system, and we mutually benefited from that relationship," Blackwood notes. "As the technology has changed with GPON and related solutions, we've continued to have a close working relationship with Alcatel-Lucent's engineering folks. They have a competent product set and they know where the market is going."

Adds Blackwood, "Because we're an older company that has adopted some of this technology, what we *don't* want to do is get out of Alcatel-Lucent's focus. We need their partnership to assure that we stay current."

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