

# Mahaska Communication Group Trumps Incumbent by Going GPON

An Iowa-based lighting firm built broadband for itself, then the community

By Frank Hansen ■ Mahaska Communications Group

**M**usco Lighting Corp. didn't set out to create a local service provider. The company is a leader in developing innovative sports-lighting technology, including solutions for permanent and temporary lighting and sports facility management. The firm is headquartered in Oskaloosa, Iowa, but operates around the world, with offices in Australia, Canada, China, Greece, Korea, and the U.K. Among its customers are NASCAR, the NBA, major league baseball, the England and Wales Cricket Board, and major television networks.

The firm may be world class, but back in 1999 the communications services available to it definitely were not. Service was expensive and unreliable, and the incumbent telco showed no interest in upgrading its offerings or its deteriorating copper plant, which was 40 years old and included wire wrapped in paper.

Unable to find any alternatives, Musco Lighting decided to make its own arrangement with Iowa Network Services (INS), which teams up with independent telcos in Iowa to provide access to fiber optic technology to about 330 communities.

The arrangement allowed the company to create its own point-to-point fiber network and develop

high-speed Internet services.

But that wasn't the end of the story. Once its own service was up and running, Musco Lighting quickly realized that everyone else in town faced the same problems it had, and that Oskaloosa as a whole paid a steep price for poor service. The incumbent telco and ISP realized \$6 to 8 million in revenues per year from the town's businesses and residents, but reinvested none of it in the community and had few local employ-

decided to offer a complete range of voice, data, and video services to local businesses and residents.

Because we were new to communications, we didn't have a good understanding of how to supply telephone, TV, and data services. We knew we needed partners to expand into the community, and over the years we've worked with a number of product vendors and service providers to create our network. With their help, we're now able to offer a

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ees. Musco Lighting thus decided to form the Mahaska Communication Group (MCG) to offer services to businesses, local government offices, and local colleges.

Initially, MCG hooked up a dozen business and municipal customers to its own point-to-point network to offer data service; it offered no local telephone or video. After several years in operation, however, MCG was ready to expand, and in 2003 it

complete range of communications services to every home in Oskaloosa and have also moved into neighboring communities.

MCG decided that a Fiber to the Premises (FTTP) network was the best way to go. The company started its fiber build-out in Oskaloosa in 2003 and completed it in October 2005; today, we are building out to some of the denser communities outside of the town. In all communities,



**Brett Paulsen (seated), Outside Plant Manager, locating fiber routes with Patrick Robinson, GIS Coordinator.**

200 Calix 400-Series ONTs.

In addition, MCG has expanded its network to Indianola, a community about 50 miles away, where we have installed a dedicated FTTP platform, the GPON-based Calix F5 purpose-built GPON FTTP system, to backhaul services from MCG in Oskaloosa to the town. The Calix F5 is hardened and can be placed in a remote cabinet for servicing a community miles away from the central office.

We've been very pleased with the Calix products.

The ONTs are very simple to install – it only takes about half an hour, reliability is excellent, and Calix's support is really, really good. When there's a problem, Calix solves it, even if the problem isn't theirs. The company doesn't finger-point;

MCG has built fiber out to neighborhoods, where it passes homes and businesses. As subscribers sign on for service, MCG extends the network to their premises.

**Calix Role**

MCG's partnership with Calix to supply FTTP technology enabled the company to start building the network we envisioned. Initially MCG installed the BPON-based Calix 400 System; it now installs the newer GPON-based Calix 500 System.

The Calix 500-Series ONT for residential use enables subscribers to receive up to 40 Mbps symmetrical service for data, VoIP or TDM voice, and IPTV or RF video. The business/multi-tenant version provides additional expansion ports to tailor services to business or multi-tenant applications as well as expansion ports for delivering additional POTS (plain-old telephone service) and T1. To date, MCG has installed about 1,900 Calix 500-Series and about



**MCG's team of installers.**

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it's willing to step in and get the job done. It recognizes that our success is its success.

### Local Installers

In addition to installing ONTs, installers must also wire homes with Category 5 cable, which is required for the set-top boxes used to receive services such as IPTV. Wiring takes about four hours and is the most time-consuming part of bringing a customer onto the MCG network. Initially MCG looked into contracting out wiring but we decided to hire our own installers after being quoted a rate of \$90-100 per hour for a team of two installers.

We can send out a team for half that amount, so we're saving money.

Using local installers has also given us a good reputation. We felt contractors did not have the incentive we did to always be courteous to our customers and take care of their homes as if they were our own.

Our installers are working with their neighbors, which makes for better relationships. They're polite, and they clean up before they leave the home. As a result, we've received numerous calls complimenting their courtesy. Plus, our eight installation vans are nicely painted and have our logo on them, so they're a good marketing tool. If we had contracted with an installation contractor, its trucks – and its name – would be on the road.

### MCG Partnerships

As a local provider, MCG relies heavily on partners to deliver services to its customers; for example, Mutual Telephone Co. (Mutel) of Morningsun, Iowa, provides all telephone switching. Wholesaler Zone Telecom provides long-distance service. Postini provides spam filtering. MCG also works directly with video content aggregator INS, which contracts with content owners and delivers video

## Mahaska Communication Group Suppliers

Calix, FTTP network technology [www.calix.com](http://www.calix.com)

Extreme Networks, video router [www.extremenetworks.com](http://www.extremenetworks.com)

Iowa Network Services (INS), video content aggregator [www.iowanetworkservices.com](http://www.iowanetworkservices.com)

Mutual Telephone Co. (Mutel), telephone switching [www.mutel.com](http://www.mutel.com)

Myrio, video middleware (backhauls Internet traffic from router to NetINS via a gigabit Ethernet connection) [www.myrio.com](http://www.myrio.com)

Postini, spam filtering [www.postini.com](http://www.postini.com)

Zone Telecom, wholesale long-distance service [www.zoneld.com](http://www.zoneld.com)

programming to Iowa telcos.

Because MCG does not have a video head-end, INS delivers video content to MCG via a fiber connection. All MCG needs on site is a router from Extreme Networks to handle data and video, plus video middleware from Myrio. MCG backhauls Internet traffic from its router to NetINS via a gigabit Ethernet connection.

The relationships with INS and Mutel were a real benefit to us early on. We didn't have to learn about the video business, and we didn't have to make a large capital investment for a video head-end and a Class 5 phone switch. We were able to rely on the expertise of our partners.

### Network Benefits the Community

By creating its own fiber network, Musco Lighting benefited by gaining access to more reliable, higher quality services at a more affordable rate. By creating MCG and an entire FTTP system, Musco Lighting benefited by more than just revenue. The availability of a high-quality, high-speed communications service has helped the company attract bet-

ter employees by benefiting the entire community and beyond.

Local businesses are saving an average of 39 percent compared to what they were previously paying for service, and improved Internet service has helped them grow by gaining business from outside the community. Residents receive sophisticated services such as IPTV and broadband Internet access at an economical price.

Economic development is the reason we got into this business in the first place. Our goal was not revenues – Musco Lighting benefits in a lot of ways other than monetary – but our philosophy gives us a very large advantage in competing with the ILECs. We tell people they shouldn't be afraid to jump into this business. We employ 45 people who didn't have any expertise in telecommunications before they joined us, yet we've been very successful. **BBP**

### About the Author

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