



THE COMPUTERWORLD HONORS PROGRAM

CASE STUDY

LOCATION:

*Watertown, New York,
United States*

YEAR:

2006

STATUS:

Laureate

CATEGORY:

*Government and Non-Profit
Organizations*

NOMINATING COMPANY:

Nortel

ORGANIZATION:

Development Authority of the North Country

PROJECT NAME:

Open Access Telecommunications Network

Summary

The Development Authority of the North Country owns and operates the Open Access Telecommunications Network (OATN) of Northern New York. The OATN provides a solid base for economic growth in economically depressed counties of rural northern New York State by helping businesses be more competitive; creating opportunities for new jobs; attracting telecommunications intensive businesses; and enhancing excellence in education, government and health care.

Introductory Overview

The Development Authority of the North Country is a NYS Public Benefit Corporation chartered in 1985. The Authority develops, finances, and manages infrastructure and economic development projects in Jefferson, Lewis, and St. Lawrence Counties in rural northern New York.

The Development Authority's Open Access Telecom Network (OATN) established a publicly owned and operated wholesale telecommunications network in the three county region served by the Authority and consists of 550 miles of optical fiber in rural northern New York, and 10 Points of Presence (POPs) containing the electronic and optical equipment that powers the network. The POPs are located in communities with good opportunities for competitive commercial service offerings, and the electronic and optical gear is configured to provide users with unlimited capacity for expansion. The OATN includes a Point of Presence at the regional carrier hotel in Syracuse, NY, facilitating interconnection with major regional and national service providers that would not otherwise be serving northern New York communities. The entire system of fiber optic cable and POP equipment is constructed to carrier class industry standards, and has become a valuable public infrastructure asset in the region now and for many years to come.

The OATN, which began operations in January 2005 as a wholesale transport network, provides telecommunications circuits to local and long distance carriers, ISPs, data services providers, and cable/TV companies. These companies provide retail services to businesses and other consumers in the region.



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Strategic market analyses conducted over the past decade repeatedly noted the lack of a reliable, affordable telecommunications infrastructure in rural Northern New York as a major impediment to economic development activity. The OATN is a state of the art telecom network, providing carrier class services at below market prices. The OATN is a cornerstone infrastructure that will support re-positioning and rebuilding the regional economy.

Benefits

The reaction from the both private and public sectors has been positive. Eight private sector companies (ISP; cell phone; traditional phone company; enterprise customer) have signed contracts to operate on the OATN. The impact has been immediate: a local customer service center was able to expand its offerings, and create additional employment opportunities, after our network and a competitive carrier were extended to their facility. In addition, local telecom service providers that utilize the OATN are offering higher value services to business and residential customers that weren't previously available. For example, within one week of completing the network, an incumbent service provider in the region launched DSL services, that had previously been unavailable.

In the community, the OATN was constructed onto the campuses of Jefferson Community College, SUNY College of Technology at Canton, SUNY Potsdam, and Clarkson University. The colleges, individually and collectively, are developing new applications for delivering educational programs; and for supporting their students and staff with greater access to the Internet and Internet II. The OATN, in cooperation with the St. Lawrence Lewis BOCES and the Jefferson Lewis BOCES constructed into nearly seventy primary and secondary school buildings to support studio quality distance learning services and gigabit Ethernet services to all school districts in the three counties of Northern New York. These services have allowed the St. Lawrence Lewis BOCES and the Jefferson Lewis BOCES to expand services to remote districts and in turn bring the level and quality of services for school districts to that of the larger population centers. Examples of private sector benefits include ALCOA, which has connected two northern New York aluminum smelting operations (10 miles apart) via the OATN to improve the efficiency of data, videoconferencing, security, and telephone systems. Also benefiting from the OATN is Northern Radiology, a medical imaging company that connected three remote sites with the regional medical center, achieving both cost savings and a higher quality of patient care. The OATN allows existing and new service providers the ability to offer competitive services, using the OATN for transport through and out of the region. The OATN also supports existing North Country businesses that are moving to web-based sales, service and marketing in order to compete nationally and globally. An example of the immediate benefits of the OATN was within a week of completing the network Frontier Communications launched DSL service into an area that would have otherwise been unavailable.

The OATN has allowed local school districts and regional BOCES to offer more efficient and cost effective training programs for teachers as well as other volunteer organizations (fire fighters) that would have had to travel to conduct training. Opportunities are now available for enhanced telemedicine uses, and the public broadcasting network has been able to cutover to a digital format.



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The Importance of Technology

Construction of the OATN has created vast capability for rural northern New York. The OATN optical fiber infrastructure is designed to provide feeder and distribution networking and can support significant future lateral build outs allowing the OATN to make new connections affordably. Utilizing the most advanced telecommunications equipment available in the core of the network, the OATN is designed to provide carrier-class services, and be scalable to accommodate future growth. At the heart of our technical solution is a next generation OC-192 Synchronous Optical Network (SONET) platform, providing optical transport and connectivity. The SONET platform offers exceptional versatility and functionality. Most notable is the Resilient Packet Ring (RPR) technology, which provides the Authority with the ability to segment OATN customers' Ethernet traffic on the optical network while still providing all of the benefits inherent with SONET technology. The electronic and optical equipment installed in the POPs and customer locations support Gigabit Ethernet, TDM and traditional telephony, and have tremendous capacity for current use and expansion. The network is both structurally and electronically survivable for long term reliability. Physical reliability, along with the reliability of the next generation Nortel platform provides retail communications providers the quality of service they require to deploy their services into the rural areas of Northern New York.

The OATN is part of the Comprehensive Economic Development Strategy for Jefferson, Lewis and St. Lawrence Counties, and is recognized as a critical technology infrastructure that will support a wide array of economic development initiatives.

Initial use of the network has brought Gigabit Ethernet capacity to the small school districts across the region, and has created a reliable Internet II connection for research staff at Clarkson University and SUNY Potsdam which, until the OATN was created, was not available or affordable. The OATN will support businesses that require high capacity, high reliability telecommunications services, such as call centers, insurance/banking back offices, and data storage operations. These industry clusters have historically not chosen the northern New York region, despite favorable real estate and labor costs, because of the region's inadequate telecommunications infrastructure and services.

Originality

The OATN embraces the principles of entrepreneurship and supports innovation at a variety of levels. The OATN is a new enterprise for the Development Authority, and the Authority must manage the system efficiently in order to pay for operations, debt service, and support network expansion. While public resources were used to fund a portion of the capital cost, no public funds are available for operating. The OATN must perform well financially to survive longterm. In addition, this network is the first of its kind to support traditional TDM services with Ethernet Services via Resilient Packet Ring technology by Nortel Networks.

The OATN is unique among publicly developed networks in the North Eastern United States due to its geographic reach, its mission to support wholesale service providers rather than being in retail local competition with the private sector, and its adherence to Bellcore standards for design and operation. We are also a facilities based carrier similar to a traditional telecommunications company; other public projects have primarily leased their transport facilities from existing telcos. We designed the OATN as a platform to create a competitive telecom market for the three county area, not to become a direct competitor to the local telecommunications compa-

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nies. By comparison, many other public telecom projects provide Internet content or cable tv at the retail level.

Success

The OATN has been in full operations since January 2005 and has run at a 99.999% in service rate with 100% customer satisfaction.

Regional Boards of Cooperative Educational Services, as well as individual school districts, are utilizing the network to support educational programs that would not have been possible without the OATN. According to Penny Sweredoski, Assistant Superintendent of the Jefferson-Lewis BOCES, local school districts had been working with equipment that was fast becoming obsolete and transmission capacity that was not keeping pace with new programming needs. They were in need of an extensive upgrade in order to continue offering their distance learning services. The OATN allows the Jeff-Lewis BOCES to transmit broadcast quality video for distance learning, virtual field trips, adult education and other videoconferencing applications, as well as providing Gigabit Ethernet capacity for web based administrative programs. According to Jennifer French, Assistant Superintendent of the St. Lawrence Lewis BOCES, more cost effective and efficient staff training is now being conducted via the new distance learning network, avoiding considerable expense for the small school districts.

Other examples of organizations benefitting from the OATN include Alcoa, where the OATN connected two large scale operations separated by ten miles. This allowed Alcoa to centralize their data communications systems and reduce cost. Another example is a local medical radiology firm, Northern Radiology. The OATN allowed Northern Radiology to connect three remote sites to the regional medical center to reduce communications costs and improve the timeliness of service to their patients.

Within the first year of operations, eight private service carriers and five public sector network providers all signed long-term contracts for transport services on the OATN. Six additional carriers/service providers are expected to sign on in 2006-07.

Difficulty

The OATN overcame a number of obstacles during the development and construction phase of the project. The nearly \$19 million OATN has been developed through strong public – private partnerships. The project has the full support of New York State, which provided \$6.25 million in grant funding. The U. S. Department of Commerce Economic Development Administration provided an additional \$3.0 million in grant funding. The high level of grant funding allowed the Authority to leverage \$9.4 million in private financing from Manufacturers & Traders Bank. The financing was arranged from 2001 thru 2004, a time when telecom firms across the country were struggling due to over supply of fiber optic facilities. The extreme needs in this region, coupled with the wide spread political support and a strong business case allowed the Authority to secure funding from various grant and debt sources.

Because of the facilities based infrastructure, the Authority was required to enter into licensing agreements and perform make-ready engineering and construction on over 14,000 existing utility poles to make pole lines ready to accept additional fiber infrastructure. The difficulty came in managing the costs and time-lines associated with completing this phase, without having the



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control over management of the utility companies that owned the poles. This phase of work had to be completed before cable construction could begin. Leveraging relationships with all utilities allowed us to keep the project on schedule and on budget.

The greatest resistance came from private telecom carriers. The statewide telecommunications association opposed publicly funded telecom networks, declaring them “unfair competition”, and actively lobbied against our project. The largest private telecommunications company in the state, and their unionized workforce, conducted a very high profile campaign (locally and in the State Capitol) to stop the project. However, their own service record, and lack of next generation offerings muted their protests about our network. Ultimately, we were able to reach agreements with seven carriers to provide elements of the network, which allowed for a farther reaching and more cost effective system. The statewide telecom association also modified their stance to support public network funding, as long as the network operations didn’t compete at the retail level.