



The Computerworld Honors Program

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Final Copy of Case Study

Year:
2013

Status:
Laureate

Organization Name:
Clackamas County

Organization URL:
www.co.clackamas.or.us

Project Name:
CBX (Clackamas Broadband Express) – Information at the Speed of Light

Category:
Economic Development

Please provide an overview of the nominated project. Describe the problem it was intended to solve, the technology or approach used, how it was innovative and any technical or other challenges that had to be overcome for successful implementation and adoption. (In 300 words or less.)

Clackamas County's economy was in transition. Traditionally the timber industry had provided a significant base for jobs. However, many of these jobs had been eliminated and the rural areas of the County were therefore experiencing double-digit unemployment. The County needed desperately to stimulate economic development by bringing in modern, higher paying and sustainable jobs. Without expanding the local economy through newer industries, the County's economic base would continue to weaken. From a broadband perspective, the County was served in piecemeal fashion by over 20 broadband providers. These consisted of

tier-one voice and data carriers, large cable TV MSOs, independent telephone companies and locally owned cable franchises. Services in the rural areas were generally regarded to be "slow, unreliable and substandard." With each provider serving small pockets of the county, there was no synergy or economy of scale contributing to the growth of broadband countywide. To address this critical shortage of readily available broadband transport throughout the county, the County's master communications planning resulted in the development of a 180-mile countywide fiber ring known as the Clackamas Broadband Express (CBX), a project funded by the acquisition of a Federal BTOP grant through the Federal Stimulus Program. The County's fiber-optic middle-mile network provided badly needed infrastructure and linked the rural parts of the County with the nonrural areas. The CBX initially linked together a total of 160 community anchor institutions, including schools, a community college, public safety facilities, hospitals and other public government facilities. The fiber ring also offers dark fiber capacity to the various local broadband providers at very affordable rates. By offering a countywide redundant fiber-optic ring, the county enables providers from within the county and beyond to economically access a previously unreachable customer base.

When was this project implemented or last updated? (Please specify month and year.) Has it incorporated new technologies and/or other innovations since its initial deployment? (In 300 words or less.)

Finalized Nov. 8th 2012. CBX offers physical interconnection with requesting parties via allocation of dark fiber to the requesting party for purposes of transport anywhere on the CBX. The CBX is nondiscriminatory and open to any requesting party. Utilization of the dark fiber is not restricted and is open to use as necessary for the requesting party within the resources allocated by CBX. Such interconnection arrangements are subject to: technical feasibility, security and compliance with any requirements of CBX and any third party controlling the facilities at which interconnection occurs. Utilization of CBX resources will in no way interfere with or restrict use by the County or other CBX partners, customers or users. CBX's current or reasonably anticipated capacity limits include planned expansion and utilization growth. CBX resources will be allocated based on reasonable requests to utilize the resources and not for purposes of unused resource blocking. Mutual agreements on reasonable rates and terms are to be negotiated in good faith. Network management: The CBX does not apply any network traffic prioritization, and will not favor any lawful applications or content over others. The CBX will not filter any content or service except to County-supported facilities or in cases of violation of interconnection agreements. We have since had major interest in the use of dark fiber from several commercial cable companies that would otherwise not have been able to reach remote customers at an affordable rate.

If this is a previously submitted project that has been significantly updated and/or expanded, please describe the nature of the update here. (In 300 words or less.)

This is a new project and submission.

Is implementation of the project complete? If no, please describe the project's phases and which phase the project is now in. (In 300 words or less.)

In June 2010 Clackamas County was awarded a BTOP grant for \$7.8 million, the largest such recipient in Oregon, to develop the Clackamas Broadband Express (CBX). In addition to the BTOP grant, the County pledged to contribute the required \$3.3 million in matching funds for a total project cost of \$11.1 million. This funding opportunity made it possible for the County to begin to meet the advanced communications needs identified in the 2000 Telecommunications Study. Clackamas County released a request for proposal (RFP) for a design and construction contract in October of 2010. The contract was awarded to North Sky Communications of Vancouver, Washington, in partnership with Engineering Associates, Inc. in November 2010. In December 2010, the County began the environmental assessment process required by BTOP to allow construction of both aerial and underground fiber infrastructure. Final approval of the environmental assessment was received by the County's BTOP grant administrators in January 2011. Construction of phase one of the CBX began in March 2011. At the end of April, nearly 10,000 feet of fiber, almost two miles, had been placed in the Oregon City area. An additional 43 miles of fiber was completed over the next several months. Subsequent CBX construction was carried out in several phases over the next two years with a completion date of no later than June 2013. This completion date, which is now well ahead of schedule, is targeted for Jan. 1, 2013, with several commercial telecom providers lining up to purchase fiber.

Please provide at least one example of how the technology project has benefited a specific individual or organization. Feel free to include personal quotes from individuals who have directly benefited from the work. (In 300 words or less.)

The Clackamas Educational Service District was able to provide schools higher speed access to the Internet and all of the high-capacity applications that could be realized from more bandwidth. Included in these were distance learning and virtual classroom applications. Higher capacity data connectivity and online video training was provided between fire stations and police locations, enabling greater access to graphic-intensive data, and the ability for greater sharing of information between the County and the municipalities. The Oregon Department of

Transportation was provided with fiber pathways needed to implement Intelligent Transportation System traffic monitoring and video monitoring along high traffic corridors. SandyNet, which is a small ISP operated by the City of Sandy, had no available middle-mile infrastructure available in Clackamas County. SandyNet's backbone connection suffered due to lack of capacity and redundancy. Quoting from SandyNet's letter of support, the new Clackamas middle-mile network "provided a critical connection to the Internet for our ISP, allowing for redundancy and additional capacity to meet future growth. This additional middle-mile capacity was critical to our ability to accommodate our new customers. The production company shooting the movie "Leverage" in Portland, Oregon, (Clackamas County) was ecstatic about the fact of being able to get dark fiber and is seriously considering building a production studio here instead of sending daily film takes overnight to Los Angeles for editing. The CBX network will provide greater interconnection and improved communications for county and municipal agencies, local communities, schools, colleges, health care facilities, public safety facilities (i.e., fire, police) and communications towers throughout Clackamas County. The CBX networks' contributions has provided added value for every Clackamas County resident, from technology-driven economic development and improved public service delivery to efficiencies in medical care, and enhanced educational opportunities for residents and local businesses.

Would this project be considered an innovation, a best practice or other notable advancement that could be adopted by or tailored for other organizations and uses? If yes, please describe that here. (In 300 words or less.)

This project is considered an innovation. Clackamas Broadband Express will allow service providers to expand and enhance services and improve service delivery to their customers, as well as assist local businesses in becoming more viable in a global marketplace. The CBX will also provide key infrastructure for attracting new businesses to the County, in turn facilitating crucial economic development. Clackamas County has several project partners, including Clackamas Educational Service District, SandyNet and Clackamas Community College. In addition to partnerships with public entities, the County has and will continue to reach out to private telecommunications companies and other service providers to establish strategic relationships. Two utility agencies, Portland General Electric and Water Environment Services, are also partners of the CBX effort.



If there are any other details that the judges should know about this project, please note them here. (In 300 words or less.)

Although Clackamas County is managing the construction of CBX, it will not provide any direct retail broadband services to homes, public entities or private businesses. The County's role is to build the dark fiber infrastructure and make it available to public agencies and private telecommunications companies through lease agreements. As planned, the CBX will initially benefit a number of identified "community anchor institutions." These include public agencies and service providers such as schools, police, fire, libraries, healthcare centers, governments, transportation facilities and utility companies and cooperatives. In addition, CBX will benefit current broadband service providers and businesses throughout the county by providing nondiscriminatory, cost effective, high speed infrastructure. Clackamas Broadband Express will allow service providers to expand and enhance services and improve service delivery to their customers, as well as assist local businesses in becoming more viable in a global marketplace. The CBX will also provide key infrastructure for attracting new businesses to the County, in turn facilitating crucial economic development. Clackamas County has several project partners, including Clackamas Educational Service District, SandyNet and Clackamas Community College. In addition to partnerships with public entities, the County has and will continue to reach out to private telecommunications companies and other service providers to establish strategic relationships. Two utility agencies, Portland General Electric and Water Environment Services, are also partners of the CBX effort. To date, Frontier Communications, Comcast, WIN (Western Independent Networks), CenturyLink, Reliance Cascade Communications, Integra and Spectrum Networks have contacted and met with County CBX staff to inquire about procurement of fiber for the expansion of their businesses.