

POWELL, WYOMING: Creating A New FTTH Model

A finely honed public-private partnership is bringing fiber to a rural community of 5,500 – without taxpayers taking on financial risk. The economic benefits are already evident.

By Ernie Bray ■ *PowellLink*

Some towns have tried to bring high-speed fiber-to-the-home Internet services through public community offerings or city developments, but these approaches can have significant risks and shortcomings. The business model may not work, the town may lack experience in running a successful service, or it may be split on how – or whether – to implement the service.

Nevertheless, rural communities across the country are looking for ways to create an economic resurgence, and many realize that having access to next-generation FTTH broadband services can help drive their growth. Unfortunately, larger telcos or cable providers often can't economically provide this cutting-edge, FTTH infrastructure to smaller communities today. A federal government survey in August 2007 showed that only 17 percent of rural US households sub-

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scribe to broadband service. The lack of broadband access – and the high cost of broadband if it is available – prevents many small communities from growing and diversifying their economies.

The City of Powell, Wyoming, a community of 5,500, took a different approach to stimulating economic growth via next-generation FTTH in-

frastructure. The city was founded in the early 1900s, when the US government developed dams and canals nearby that opened up the area to farming. Powell had prospered as a progressive community with a diverse commercial, industrial, educational and agricultural/ranching economy. But it needed to keep up as communications became an important economic driver.

HISTORICAL ROOTS

In 1996, the Powell Valley Economic Development Alliance, headed by Dave Reetz, sponsored a two-day workshop to determine what Powell wanted and needed in terms of tools for the new information age. The Alliance brought in Chris Hoy from the Nebraska Department of Economic Development to lead the workshop. Hoy had been conducting similar workshops in Nebraska at the time. Mark Payler, a local educator and leader who collaborated with Reetz to bring in the workshop, presented a Powell Digital City project model that would use high-speed communications





to build the city economically, culturally and socially. The model incorporated ideas ranging from online newspaper publishing to distance learning in the local schools to online access to city, county and state governments. Powell adopted Digital City as its slogan – and set out to make it a reality.

“We were fortunate to have Mark Payler provide this leadership to us back in 1996,” says Reetz. “Any small city needs to listen to visionaries. We embraced technology, even though you can’t know today what might come down the road. The effect of this vision during the past 12 years has been astounding.”

THE FIRST STEP – CONNECTING TO TRANSCONTINENTAL FIBER

The first step toward becoming a Digital City was to create a broadband network. With no incumbent telco (this is Qwest territory) or cable provider having a fiber optic connection to the city, or offering broadband at the time, Powell began working with regional telco TCT.

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The availability of this infrastructure attracted Fitch Ratings of New York City, which opened a back office in Powell. The Digital City vision was also a major reason that the Western Governor’s Association chose Powell as one of four cities to be a Center for Excellence in Rural America. The aim of the pro-

gram is to bring corporate jobs to rural America by guiding towns into the information age and opening the door to the creation of high-tech job opportunities. Other aims include demonstrating that technology-enhanced communities can also provide enhanced health care, education, government services and quality of life.

TCT later built a redundant link to the original fiber optic ring that enabled local Northwest College and the Powell Valley Economic Development Alliance to create the first technology center in Wyoming. The Center for Technology and Innovation is now located in a former Air Force housing complex that was acquired for the Northwest College through a special act of Congress. The center includes a technology business incubator that offers small technology businesses office space, free high-speed

Internet access and other services, as well as a training center that now trains more than 2,000 corporate and noncorporate employees and other individuals each year.

But about 10 years after it built the original fiber optic ring, Powell decided to go a step further. It wanted to have an FTTH network that could provide very-high-speed symmetrical Internet, advanced video and voice, and other “cutting-edge” services to both residents and businesses – and, if possible, to do it without taxing the local community.

THE ELEMENTS OF SUCCESS

As owner of an existing fiber infrastructure – and of the town’s electrical poles – Powell had a good starting point for an FTTH network. But the city did not want to own or manage the retail service offerings. To do so, the city would have had to issue general-obligation bonds backed by taxpayer dollars, an approach that not only has political ramifications but also would require it to become a retail service provider, operating outside its established core competency. In a search for other options, Powell City Administrator Zane Logan contacted U.S. MetroNets in December 2005, looking for a partner to assist the city in putting together an end-to-end program to implement alternative funding to build the citywide FTTH network.

Because U.S. MetroNets (USM), a company that I founded, is not a service provider, we needed to identify a service provider that could offer highly



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competitive services and manage the FTTH network for the city, once it was built. Fortunately, the city had already been in discussions with TCT, a nearby highly qualified independent telco that was interested in offering services to the Powell market as well as in managing the network.

We worked closely with Powell and TCT over the next six months to develop a business model that addressed all the elements needed to obtain private financing and build a successful, profitable broadband service:

- Highly qualified service provider
- Financing – not tax-backed
- Bond underwriting
- Legal counsel
- Technology
- Marketing
- Commitment

Service provider. Finding an experienced service provider that is qualified at all levels at the outset of planning is a critical component of any wholesale infrastructure business plan. TCT is a respected local independent telco and service provider in a market contiguous to the City of Powell; it is strong financially and technically; and it understands how to market services successfully. More than one municipal telecommunications plan has experienced difficulties and even partial failure for lack of a strong service provider solution.

Financing. We spent a considerable amount of time developing sophisticated tools for projecting anticipated operating costs and expenses, capital costs and other costs of building out the network. We also plugged TCT's data into the model, and of course we projected our revenues. The plan is structured so Powell controls the project and owns the infrastructure.

Bond underwriting. The business model showed us it made sense to move forward; the next step was to model the right way to finance the network via bond underwriting. One of the biggest financing issues is political – the public's fear of wasting or risking taxpayer dollars or competing unfairly with the private sector. USM's Scott Crowley, who has 20 years of experience in private equity and who has participated in many large financial deals, developed a model that assuaged these fears and broke new ground in financing.

The municipal bond industry typically deals with funding projects such as water, sewer and schools, so it was critical that we be able to educate the industry about this new type of project and funding model. Although the model took nearly a year to successfully develop, it was instrumental in convincing members of the municipal bond industry that investing in Powell's FTTH network would be a sound financial decision. Investors complimented us on the level of thought and detail in the model and felt that the funding was a winner because it combined the strength of a service provider of proven quality with the benefits of municipal sponsorship of the fiber

optic infrastructure. This exercise now provides us with a financial model that we can use with similar projects – and gain funding more quickly.

Legal counsel. It's one thing to get financing, and quite another thing to ensure that it is legal to finance a municipal project in a particular way and that other aspects of the project are done in a manner that minimizes legal risks. USM brought in very experienced legal counsel – Dave Shaw of Kirton McConkie, who has also served as general counsel for the UTOPIA FTTH project, and noted telecom attorney Jim Baller of the Baller Herbst Law Group – to review our bond financial structure before we took it to potential investors. This ensured that the structure was legal and avoided any possibility of legitimate challenges. Consultants who do not take local or state laws into account may give municipalities bad advice – for example, suggesting power rate hikes to subsidize a communications system when such hikes may be considered illegal cross-subsidization.

Technology. Finding a technology vendor that is willing to participate fully in creating a new FTTH network, and that understands how the market works, is another important element of planning. The right vendor offers not only technology but also the willingness to leverage its expertise in working jointly with other partners to ensure the network is successful and properly publicized.

TCT had already chosen Calix equipment for its in-territory FTTH deployment and said that in its experience, the company's products worked well. TCT made a strong case for using Calix equipment in PowellLink, explaining that with Calix, it would be ready



to operate, manage, maintain and run services across Powell's FTTH network from day one.

The new FTTH network employs the Calix C7 multiservice access platform serving GPON at 2.4 Gbps and Calix 700G GPON optical network terminals (ONTs), which terminate fiber at the customer premises and interface with the subscriber's in-home communication and entertainment devices. TCT will use the Calix Management System (CMS) to provision, troubleshoot and manage the entire network.

Marketing. In a public/private partnership, there are two aspects to marketing – public awareness and the service provider's sales activities – and it is important to understand legally and politically the demarcation line between them. We helped the City of Powell put together a public awareness campaign, including a workshop series, banners, a Web site and other materials. These are intended to inform the public of the social and economic benefits of the FTTH infrastructure, such as how an FTTH infrastructure will benefit education, health care and economic development for years to come. TCT will handle the actual sale and marketing of retail services.

Commitment. The success of a complex, expensive project like building an FTTH network and providing services requires city leadership that is totally committed to making it a success. The mayor, city council and city administrator of Powell were dedicated to making the network a reality and took the time to really understand it, never wavering in their support. City officials are strongly committed to PoweLink because they see it as an engine of economic growth and development. Each time some aspect of the project came up for a vote, the tally was 7-0.

THE PLANNING PAYOFF

All of the preparation and planning culminated in the kickoff of the construction of PoweLink on May 28 of this year.

"Our new FTTH system will serve existing residences, businesses and schools and also help retain young people and attract new residents and businesses," says Powell Mayor Scott Mangold. "So many communities are struggling to remain competitive in an



information-intensive economy. This network will ensure that the city will have state-of-the-art infrastructure, while embracing the involvement of private service providers."

Even though construction of the FTTH network has only recently begun, Reetz says the city is already seeing its potential for bringing a brighter economic future. The infrastructure is critical to many individuals and companies making relocation decisions, since connectivity is often near the top of the list, along with a trained labor force that companies look for.

For example, the ability to connect to global markets from Powell has attracted the attention of Eleutian Technology. Eleutian, a company based in Ten Sleep, Wyoming, has received \$1.5 million from South Korean venture-capital company Skylake Incubest. Eleutian will partner with CDI Holdings of South Korea, a market leader in English education, to teach conversational English to South Korean students via high-speed videoconferencing. Since one of Eleutian's strategies is to move teachers to home offices, Powell's FTTH network is critical in enabling the company to hire as many as 100 teachers in Powell over the next few years.

The FTTH network has also attracted ReSource Inc., which develops automated retail packaging and shipping systems. The company is headquartered in Denver but decided to locate tech support for its software in Powell. The broadband capability in Powell is a

key factor in ReSource's deciding to locate its tech support there because the FTTH network is two to three times faster than the network that serves its headquarters in Denver's Technology Center. Powell is now also well positioned to recruit data center operations – a priority recruitment target selected and supported by the state's economic development division, the Wyoming Business Council. Beyond economic development, Reetz also sees applications for FTTH in health care, education and access to government.

Powell is a great model for other communities exploring public-private partnerships. It proves that cities have other options to going it alone, even if their incumbent service providers are not willing to invest in critical broadband infrastructure.

In addition, the business model U.S. MetroNets developed for Powell provides a lot of strategic value for other rural communities. The number of cities that have gone forward to provide FTTH using other business models is very small. The Powell model opens up new doors for cities and counties that understand the value and necessity of developing a new communications infrastructure, but that do not want to directly finance, own and manage a retail broadband offering. **BBP**

About the Author

Ernie Bray founded U.S. MetroNets and the new PoweLink.