Rural Broadband Success Story:
Panhandle Telephone – Progressive Thinking in a Rural Area

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Introduction

Broadband (or high-speed) Internet access has become a dominant force in today's economy. Companies require broadband access to send and receive large data files, and individuals turn to high-speed access when they want to take online courses, buy and sell items online, or simply entertain themselves. However, rural cities across the nation typically lag behind their urban counterparts when it comes to obtaining the telecommunications infrastructure necessary for this type of access. This is primarily due to the costs of installing the infrastructure – the more densely populated urban areas make attractive targets for private phone and cable companies, who are able to recover their investments relatively quickly in these areas. Ironically, rural areas, which stand to gain the most from the distance-negating nature of the Internet, are often left without any type of broadband access. However, some companies fought hard to bring this advanced technology to the rural communities they serve. Panhandle Telephone Cooperative, operating in one of the most rural parts of the country, has become known for its progressive attitude and the state-of-the-art services provided to its customers.

Background Information

Panhandle Telephone Cooperative, Inc. (PTCI) has been around since the 1950s, acquiring a Rural Electrification Administration loan to provide telephone service to about 500 original customers. PTCI serves what has historically been one of the most rural parts of the entire nation – the panhandle portion of Oklahoma, including Cimarron, Texas, and Beaver counties, which have a population base of around 29,000 combined. PTCI provides more than 15,000 customer lines in this area, covering more than 6,450 square miles.

PTCI formed a subsidiary known as EagleNet in 1994, when it acquired the commercial telephone company that previously served the largest city in the panhandle region (Guymon, population 10,500). In 1999, PTCI/EagleNet introduced the high-speed technology known as Asynchronous Digital Subscriber Lines (ADSL). This provided broadband access to many rural households around the same time that the dominant metropolitan areas in the state (Tulsa and Oklahoma City; populations 400,000 and 500,000, respectively) obtained such access.
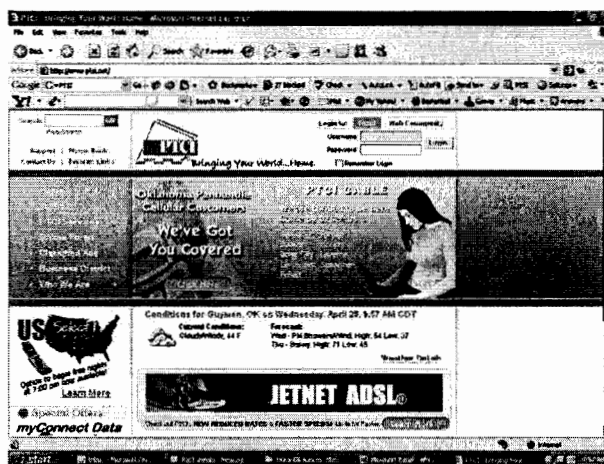
Today, PTCI offers Digital Interaction Television to most of its subscribers, meaning that it can supply high-quality digital picture and sound using the same line that delivers voice service and broadband Internet access. It remains one of the most forward looking telephone companies of any size in the United States. PTCI connects more than 1,500 customers to broadband video service and continues to look for ways to upgrade its service, including implementing Voice-over-Internet-Protocol (VOIP) in early 2006.

The following information is taken from an interview with the CEO of Panhandle Telephone Cooperative, Ron Strecker:

Tell us a little about how PTCI became interested in providing broadband to its customers.

PTCI is very involved in the industry, and regularly attends meetings of our national trade association. We recognized the value of providing high-speed data services as this topic became more prevalent during the late 1990s. As a cooperative, we are owned by our members – in fact our profits are returned to our members – so we attempt to stay in touch with the needs of our customers.

What infrastructure upgrades were necessary to provide DSL to your customers? Did you do any cost-benefit analysis to see if it would be profitable?

Providing DSL essentially just requires additional equipment at each central office offering the service – it does not

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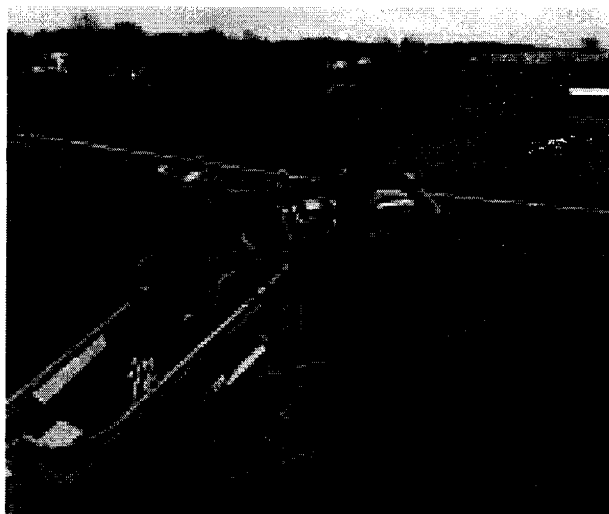
entail re-laying any cables. The original cost analysis indicated that it would be fairly inexpensive to provide DSL service to approximately 80 percent of our customers – those were the ones within the typical boundary for DSL service (18,000 feet, or 3 miles, from the central office). We took a look around at the prices other DSL providers were offering around the country, and decided to set our initial price at the lower end to attract customers.

Later on, we looked into new technologies, such as "extended reach" for DSL, which allowed the service range to approximately double so that we could reach portions of that remaining 20 percent with no DSL access. We also got to the point where some of our buried plant (cables) were more than 30 years old, and in some cases were no longer satisfying the requirements of our corporations commission. At this point we decided to upgrade portions of our plant, and in doing so made sure we were capable of providing DSL to pockets of rural areas that previously had no service.

What kind of a time frame did the conversion to DSL take (from considering it as an option to finally turning customers "on")?

It took less than a year; however, we were (and still are) constantly upgrading our system. For example, we implemented ISDN before DSL came along, so we were always learning about the next great thing for our customers.

How has the inclusion of Cable TV service changed the way you do business?

We now offer a number of services to our customers: landline (phone), data (Internet), video (cable TV), and cellular (phone). We have created packages and allowed customers to bundle the various types of services they would like. In terms of our video services, we offer two different types – one is the traditional cable television (CATV), and the other is an IP-based technology using the DSL data line. It is very convenient for the customer to have all these choices from a single provider.

How do you market your services?

We did a significant amount of advertising when DSL first came out, including radio, newspaper, billboards, customer newsletters, and billstuffers. We still advertise today, but that initial push helped generate our customer base, who gave us possibly the most effective form of marketing – word of mouth.

How many households currently subscribe to DSL? What is that in percentage terms of the households you serve? Have you seen an increase in the demand for DSL since you initially implemented it?

We currently have around 5,000 households subscribing to DSL. That probably represents somewhere in the neighborhood of 30 to 35 percent of the households we serve. There has been an increase in the demand for the service, like any technology, it takes some time to diffuse. [Note: This compares to a subscription rate of 20 – 28 percent for other telephone companies (NTCA, 2005)].

Have you seen any impact from DSL in terms of economic development? Are businesses more interested in locating in the panhandle now, or has there been an increase in the number of people moving into the area?

While I can't say that DSL by itself has been responsible in bringing businesses to town, we think that it has played a role in doing so, in conjunction with a number of other factors. We do think that DSL has been very beneficial for existing businesses, allowing them to stay here in the panhandle region and become more profitable. We also think it may have an impact on our young people moving back into the area after completing college, but the impact at any given time is small, so it's difficult to measure.

What words of advice would you give to a rural coop considering upgrading their infrastructure to DSL?

If you plan on surviving into the future, you should definitely be in the data business. High-speed data service is becoming a necessity, and those telecommunications companies choosing not to provide it will be left behind.

What are the future plans for PTCI? With fiber as part of your infrastructure, how do you feel about a "fiber to the home (FTTH)" network?

We plan to look into providing higher speed services in some communities. Fiber to the home is becoming more and more affordable, and is certainly capable of providing the bandwidth necessary for the future; however, it does have one major drawback. FTTH is currently incapable of providing what we call "lifeline" services. So, for example, if a house's power goes out, then the house loses the capability to place a 911 call. While some battery packs can be placed on the home, they currently only last about eight hours, so a long-lasting outage would be a significant problem. As with all technologies, we plan on continuing to look at the issue and staying aware of any changes that occur.

Several other rural telephone cooperatives have not been nearly as progressive as you. Why do you think PTCI has been so forward looking in its approach to serving the Panhandle?

We have been very fortunate to have a board of directors and management that is very forward looking and willing to consider numerous options on how we should proceed. By keeping an eye on the industry, we were able to understand what was going on in telecommunications systems throughout

the nation. I think our combination of solid personnel, knowledge about the state of current technology, and keeping an open mind about the future allowed us to be a very progressive cooperative.

This concludes the interview with Ron Strecker.

Benefits of Broadband Access

Rural households, businesses, and community organizations can all benefit from the productive use of broadband access. Many people take educational classes online, earning diplomas ranging from GED equivalency to graduate degrees, while others use the Internet to create income opportunities. Sites like eBay (www.eBay.com) and Craigslist (www.craigslist. com) have become common secondary (or even primary) sources of income for a number of Americans. In fact a study by AC Neilson indicated that more than 1.5 million Americans supplement their income each year by selling products through eBay.

Businesses typically use broadband access to transfer data, take advantage of online training courses, and develop a website presence – including selling their products online. Community organizations can also use broadband access.
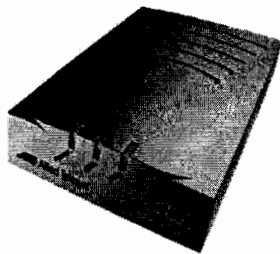
Most communities have their own website, which allows quicker interaction between the governing body and the residents, and also provides a place to tell the rest of the world about their hometown. Further, a recent study from MIT indicates that communities with broadband access experienced more rapid growth in employment and the number of businesses than those areas without access (Lehr, Osorio, Gillet, and Sirbu, 2006). Therefore, there is some evidence to suggest that the presence of broadband access is beneficial to a community.

Of course, there are also many opportunities for social interaction with broadband access including participation on message boards, weblogs, and professional associations. The demand for broadband is also highly driven by the vast array of entertainment options available online, including entire movies, downloadable songs, and video gaming.

Assistance Available for Communities Without Broadband

A number of resources are available to assist those rural areas without broadband in bringing some type of access into their community. The USDA rural development telecommunications program offers several grants and loans to communities and private firms interested in constructing broadband infrastructure in rural America. These programs include Community Connect grants, Distance Learning and Telemedicine Grants, Broadband loans, and Rural Utility Service loans. Additionally, Oklahoma Cooperative Extension Service has several programs that can benefit rural areas in this regard. Programming information consists of sessions on how to effectively use the Internet (including specific info on eBay and website development) and strategic planning processes that cover various options for obtaining broadband infrastructure. These strategic planning options include interacting with the local cable and phone company providers, forming a public-private partnership for sharing infrastructure costs, and even operating a municipally-owned broadband system. Other organizations, such as the Oklahoma Technology Council (OTC) and the Oklahoma Municipal League (OML), are also interested in providing help to rural areas interested in this topic. Contact your county Extension office, or any of the rural development specialists or other interested parties listed in Table 1, for additional information.

Additional Reading / Sources

Horrigan, J. (2006). *Home Broadband Adoption 2006.* The Pew Internet and American Life Project. http://www.pewinternet.org

Lehr, W., C. Osorio, S. Gillet, and M. Sirbu. (2006). *Measuring Broadband's Economic Impact.* Presented at 33rd Research Conference on Communication, Information, and Internet Policy.

National Telecommunications Cooperative Association. (2005). *NTCA 2005 Broadband / Internet Availability Survey Report.*

Table 1. List of Resources.

Name	Contact	Phone	Website
OSU/OCES	County Extension office (see your phone directory)		
OSU/Rural Development	Brian Whitacre Stan Ralstin Jack Frye	405-744-9825 405-237-7677 580-332-4100	www.rd.okstate.edu
OTC	Jim Mason	405-239-3669	www.oktechcouncil.com
OML	Danny George	405-528-7515	www.oml.org

The Oklahoma Cooperative Extension Service
Bringing the University to You!

The Cooperative Extension Service is the largest, most successful informal educational organization in the world. It is a nationwide system funded and guided by a partnership of federal, state, and local governments that delivers information to help people help themselves through the land-grant university system.

Extension carries out programs in the broad categories of agriculture, natural resources and environment; family and consumer sciences; 4-H and other youth; and community resource development. Extension staff members live and work among the people they serve to help stimulate and educate Americans to plan ahead and cope with their problems.

Some characteristics of the Cooperative Extension system are:

- The federal, state, and local governments cooperatively share in its financial support and program direction.

- It is administered by the land-grant university as designated by the state legislature through an Extension director.

- Extension programs are nonpolitical, objective, and research-based information.

- It provides practical, problem-oriented education for people of all ages. It is designated to take the knowledge of the university to those persons who do not or cannot participate in the formal classroom instruction of the university.

- It utilizes research from university, government, and other sources to help people make their own decisions.

- More than a million volunteers help multiply the impact of the Extension professional staff.

- It dispenses no funds to the public.

- It is not a regulatory agency, but it does inform people of regulations and of their options in meeting them.

- Local programs are developed and carried out in full recognition of national problems and goals.

- The Extension staff educates people through personal contacts, meetings, demonstrations, and the mass media.

- Extension has the built-in flexibility to adjust its programs and subject matter to meet new needs. Activities shift from year to year as citizen groups and Extension workers close to the problems advise changes.