

Fiber-To-The-Home: Deployment Considerations

By Thomas Asp, Principal Engineer and Analyst

February 2006

Consultants, industry associations, and others are promoting the need to deploy a Fiber-to-the-Home (FTTH) infrastructure to every home and business in the United States. These advocates tout FTTH because of its potential to assist with economic development efforts and position the United States as a stronger competitor in the global market place.

The FTTH advocates promote a variety of business models, including:

- Municipal retail voice, video, and data service offerings (the “Triple-Play” model). In this model, the municipality becomes the service provider.
- Municipal wholesale (the municipality provides the infrastructure to third parties for a fee) service offering, or an “Open Access” model.
- Municipal financing of a FTTH infrastructure which is operated and maintained by a private provider on a “lease” model.

All too often, proposed models are “build it and they will come” type scenarios. These models assume that if a municipality over lays their fiber optic network on top of the existing service provider networks, consumers and businesses will drop their existing providers and subscribe to services offered by the community.

A municipal that is considering deploying FTTH should address the breadth of market needs and the obsolescence trends of traditional voice and video services. In addition, it is important to note that the regulatory and content access issues that limit a municipality’s ability to address cost and choice concerns. Some FTTH models are based upon letting the technology drive the municipalities needs and not vice versa. These models fail to consider demographics, demand, existing and future competition, and other key issues.

Rather than deploying FTTH technology just for the sake of technology, we urge municipalities to consider the following steps:

1. Develop objectives from the end users’ perspective/needs, not just on the capabilities of the technology.
2. Understand that technology is only one part of the total solution. To meet the needs of the municipality and bridge the digital divide issues that separate the technology haves from the technology have nots, consider the following:

- Promote education and awareness campaigns that promote the benefits of connectivity for the consumer and the business.
 - Provide training on how to use connectivity for process improvement and productivity advancements.
 - Promote access to affordable computer hardware through libraries, schools, and other municipality outlets. Ask “how can the economically disadvantaged in our community gain access to computers and high-speed connectivity?”
 - Promote access to affordable connectivity. It is a fact that many families cannot afford \$45 a month for a cable modem or DSL. What can your municipality do to enable affordable access? Solutions may range from provision of service to providing support programs.
3. Discover what connectivity services are available in your region.
- What connectivity services are available?
 - What are the costs of these services?
 - What kind of technologies are deployed and by whom?
 - What is the migration path from the existing technology to future technology in the area? Seek out service providers and ask what plans they have for your community.
 - What municipal actions may encourage service providers to make technology upgrades in your community?
4. Understand the impact of technology “convergence” on potential service offerings, such as:
- The impact of the Internet on applications-based services.
 - The Internet allows separation or unbundling of the infrastructure from the voice or television service.
 - Voice-over-Internet-Protocol (VoIP) providers such as Skype, Vonage, Packet8, and Yak offer low-cost alternatives to traditional land-line telephones. The infrastructure provider does not share in VoIP revenues.
 - Video-over-Internet Protocol (IPTV) providers are on the rise. As more content is made available (regulatory changes), alternatives will increase. Today there are a variety of movie options, including Cinemanow and Movielink. In addition, major players such as Microsoft and SBC are deploying IPTV solutions.
5. Select technology based upon the municipality’s vision, goals and objectives. Forecast expected benefits from the services and applications. Consider financing needs, and the fact that technology migrates from one form to another and that technology obsolesces. Also, consider the following issues and facts:
- Match financing to anticipate equipment/infrastructure life.

- Replacing infrastructure in five years is acceptable, as long as you didn't finance it for 20 years.
- Understand consumer mobility needs. Will the technology you are planning support mobile users?
- Understand that no single technology will meet all needs—communities may be served by a combination of technologies like fiber optics and wireless.
- Budget for prudent use of technology. Avoid speculative infrastructure investments. Consider the long-term debt implications if a community's technological investment doesn't meet expectations.
- Leverage relationships with existing infrastructure and service providers.
 - Don't overlook the ability of existing service provider's cable, telephone equipment and outside plant to evolve to offer new services, etc.
 - Don't overlook alliances with existing providers. Existing providers are becoming more accommodating when it comes to municipal technology needs.
- Focus on developing and introducing applications that save workers time and save the municipality money. Applications like e-government, automatic meter reading, off site access to municipal databases for engineers, building inspectors, and first responders.
- As discussed above, technology is only part of the answer; training and education are important parts of any technology planning and implementation process.
- Match the type of technology to end users, geography, and other demographics.

The starting point for any technology planning process to aid economic development efforts is, in our opinion, gaining an understanding of what connectivity gaps exist in the community. Then we suggest a municipality carefully consider how to best fill those gaps with the right technology. All of this need not be a complicated time-consuming process. In the end, this coordinated and well thought out process will result in a coordinated technology plan that meets the needs of the municipality by taking full advantage of the incumbent service provider resources.

If communities would look at technology, including fiber to the home, with all the above in mind, our communities will become stronger. Strong communities will make our country stronger and enable us to compete in the world marketplace.

About the author: Thomas Asp has been serving public power systems for over 20 years. Tom is recognized as an expert in evaluating and offering recommendations regarding municipal broadband communications systems. He has been actively involved with telecommunication market research and feasibility analysis for over a decade.

About CTC: CTC is a public interest communications consulting firm. We provide engineering and financial analysis for public sector and non-profit clients throughout the United States.

