



Question: As an electric cooperative manager why would I be interested in your fiber broadband network for my cooperative?

Great question...lets look at a bit of history and work our way up to the answer.

When electric distribution service was introduced in this country, the first people to get service were in larger cities; then as these communities were built out and the transport of electricity improved, power was extended into smaller towns. The people that did not have it were the people in truly rural areas...farmers, ranchers and very small villages etc.

In 1936, the Rural Electrification Act (REA) was created by the Federal Government to allow residents in rural America to form cooperatives and receive funding from the agency to bring electricity to their outlying areas. This in fact brought the "country" into the modern times of that period. Electric lights, power machines and the like were now available to the "country folks" just like the "city dwellers".

At that time it was obvious that "for profit" power providers that supplied larger communities were not interested in providing service to the rural areas.....the investment needed would not pay back.

The creation of the REA and the ability to form cooperatives was the only way electric power came to rural America.

Power poles and lines for transmission and distribution began to be built out to "underserved areas" and electricity became a reality in rural America.

The rest, so they say, is history. Power Coops and the REA created what are now the most productive farm and ranch lands in the world.

Funny . . . what goes around comes around . . . and today rural America is again described as an "underserved area".....but this time the term is used to describe the lack of broadband service, or high-speed connections to the Internet, in rural America.



The REA has been transformed into the Rural Utility Service (RUS). The goal is the same, except this time the transforming technology for rural America is not electricity, but true broadband access. The RUS is positioned to work with Power Coops to fund Broadband Networks in their respective service areas, in much the same way as its REA predecessor funded the rural power grid.

Many technological solutions have been advanced to supply this broadband access. Wireless or WiFi has gotten a lot of publicity. But broadband access over WiFi networks are limited to relatively slow speeds, susceptible to weather interference, have limited range, and therefore are moderately expensive to deploy. In addition, the ability to provide other advanced broadband services like digital, HD television over WiFi is severely limited.

Broadband over power lines (BPL) has obvious intuitive appeal for rural electric cooperatives. But despite the hope that this could be a dominant delivery technology, the physical science behind the idea just doesn't hold a lot of long-term promise. Broadband access over BPL is limited to relatively slow speeds, and BPL just doesn't provide enough capacity to offer additional broadband services like video and other services. Even though the technology is relatively inexpensive to deploy, it doesn't provide the long-term solution to bring full, high-bandwidth broadband access into rural areas. Also a serious concern among the scientific community is the fact that BPL causes interference with other communication s systems.

Satellite television has brought ESPN and national programming to rural Americans who have an unobstructed exposure to the southern sky, but is severely limited in its ability to provide true high-speed broadband access to underserved areas. Slow speeds, latency issues, weather interference, and high prices make broadband access via satellite a less-than-happy consumer experience, even though it is often the only existing alternative to dial-up service.

Cable companies deliver broadband access to suburban and urban customers through their hybrid-fiber-coax networks. Telephone companies offer broadband access through their fiber/twisted-pair-copper, digital subscriber line (DSL) network. However, like their "for-profit" electric utility company cousins of the 1930's, large, shareholder-owned cable and telephone companies have not shown a willingness to spend the money to



build out these expensive networks to rural customers because the sparse home densities don't justify the expense to their owners.

The only true answer to solve the rural broadband access dilemma is glass fiber technology, delivered directly to the home, which has the capacity to simultaneously drive mega-high-speed broadband access and all other advanced broadband products. In fact, fiber-to-the home (FTTH) architecture is the predominant standard for delivering broadband access in many other countries of the world. Japan, most European countries, Korea, and others all have broadband penetration percentages which are higher than the U.S. . . . and fiber is the predominant delivery technology. In fact, 18 countries surpass the U.S. in the percentage of broadband penetration for their citizens.

Until recently the high expense of building a full fiber-to-the-home network has made this solution cost prohibitive. However, breakthrough engineering and design FTTH architecture patented by Pangrac Development has reduced the cost of a full fiber-to-the-home solution to less than 50% of the cost of other currently marketed fiber solutions. This solution is now available to RECs by Pulse Broadband through an exclusive license agreement. Beyond the lower initial build-out cost, the ongoing maintenance cost of Pulse's Epiphany™ FTTH architecture is also lower than other fiber solutions and significantly lower the cable's HFC or telephones DSL solutions.

This means that deploying the Epiphany™ FTTH Architecture which has been in use for the past three years makes it easy to build out and maintain a Fiber-to-the-home (FTTH) system that can out perform any of the "big city" networks being built today.

What makes the project possible is the fact that the coops already own their power poles, have right-of-way set and have strong, positive, member relationships with their core power customers....the owners of the coops. What seems to be the biggest "hill" to overcome with a coop manager (and his board) is to understand the full capabilities of an FTTH Broadband network and how to manage it.

The good news is that there is a company that can provide all the information needed to understand your "new business" of "broadband".



Pulse Broadband will show you and your board the value that will be brought to your bottom line from things like High Speed Data, Telephone, Video and other future advanced broadband services provided over your new fiber network.

Pulse Broadband provides all the services you need to move you forward from engineering and construction management as well as showing you how we can work as a team to operate and manage your new business. We take the “fear” out of broadband and educate your staff (and Board) in all aspects of a FTTH broadband network.

So...back to the original question “Why should I be interested in your Broadband Network for my coop?”

Because . . .

- It will bring your “owners” into the new world of a state of the art fiber-to-the-home network with all the advantages the big cities have....and more.
- It will bring significant incremental revenue to your bottom line.
- Your new fiber network will build future equity value for your coop.

The government, through the RUS, is providing advantageous funding...in the same way it did through the original REA, to bring electricity to rural America.

Pulse Broadband is there to provide everything needed to make your new business successful, from the beginning engineering to managing the complete broadband information.

Last, but not least....you as a manager will be a hero with your members and in your community.