

Creative Use of TV Whitespace Addresses Community Broadband Needs



Many have asked the question, “How can we fill the need for rural broadband Internet access in our rural community?” But few have actually ventured beyond the question to attempt to make it happen.

Ryan Peel, owner of Vergennes Broadband LLC is one of those rare few. Having lived in the scenic rural town of Vergennes, Michigan most of his life, he had been continuously frustrated with the lack of broadband access. Not having high-speed Internet negatively impacts the quality of life in the Vergennes area. Even property values may have suffered due to the lack of high-speed options.

“One can argue that high speed Internet has become an essential service and is as much of a necessity to us as electricity,” said Peel. “It has been at least 11 years since cable Internet and DSL were first offered in the area, and still at least 50 percent of Vergennes Township is unable to acquire affordable high-speed service.”

According to the Rural Policy Research Institute, the Internet has evolved from being a luxury or entertainment item to an essential type of infrastructure for business, health care, education, and government. Access to the Internet at broadband speeds and capabilities has become a necessary tool for engagement in the modern American economy and culture.

In 2009, the township of Vergennes, partnered with the nearby townships of Lowell and Ada to conduct a survey to determine the extent of this need. Of their 26,000 residents, less than three percent had access to high-speed Internet, putting the rest of the population at a severe disadvantage. But even though the market was extremely viable, none of the commercial service providers were willing to invest in developing this area. Ryan Peel decided it was time to get creative.

Peel’s used a highly innovative approach by combining three different technologies

to accomplish a wide scope of coverage: WiMAX; the latest technology from Carlson Wireless—one of the first TV white space broadband radios—to fill in the gaps that WiMAX cannot cover and penetrate the difficult terrain; plus micro-cell mini-towers to extend cellular phone coverage as well.

“There’s going to be a hybrid network constructed. The primary technology will be WiMAX using 3.65 GHz semi-licensed band. It’s going to use WiMAX radio technology with 6x diversity,” explains Peel. “But there are a significant number of people in the area that WiMAX cannot reach, because of the terrain and tree cover as is the nature of rural America. That’s where the TV white space device that Carlson offers comes into play.” Each of the two 100+ foot towers will have a WiMAX radio and a Carlson TV white space radio.

The TV white space concept is very cutting edge, and Carlson’s UHF/VHF broadband radio product was the only U.S. product of its kind Peel could find that supports the white space database required by the FCC.

“At this point Carlson seems to be way ahead. This seemed to be the tree-busting technology that I had to get my hands on in order to really solve this problem,” stated Peel. “It wasn’t acceptable to me to have to say no to people that have beautiful lots filled with trees, but still couldn’t be reached by a traditional 900 MHz signal. I am really optimistic that Carlson’s TV white space radios can fill that gap.”

The third piece of technology is cell extenders known as femtocells. The general public usually is not even aware that these devices exist. It is a very common problem to have dropped cell phone calls in rural areas, which can frustrate people just as much as the lack of broadband Internet service. Therefore, Peel is adding supplemental value to the project by offering this option, which simply needs to be plugged into customers’ new Internet connection to work.

The combination of these technologies offers the greatest possibility for an affordable, yet far-reaching broadband network. Peel’s dream may become a reality as soon as July 2011.

There is another important piece of this unique project worth mentioning—unprecedented community support for a mutually beneficial cause. “I actually have qualified people who have volunteered to do customer on-site installations. It is an important part of the project that is somewhat hidden. It is a gift to the community. They are not receiving any compensation; they are just people that want to be involved. This demonstrates a lot of civic pride,” Peel extols. It also clearly demonstrates how dedicated the community is to making this initiative happen.

Peel not only leads the project, but personally organizes and works side-by-side with volunteers. If that weren’t enough, he intends to donate a portion of future subscriber revenues to a local foundation that provides opportunities to students in technology and innovation-focused fields.

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