

Taking the Sting Out of Telephone Regulations with Wireless Broadband:

How the Motorola Canopy® platform has allowed one independent telco to expand its revenue and its borders.



Since deploying a Motorola Canopy® network a few years ago, Wireless Beehive has found myriad uses for the technology, including reaching remotely located customers in its own region and expanding its reach into the service areas of other telephone companies.



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Back in 2003, Chuck McCown, the manager of the independent telco Beehive Telephone Co., who happened to live in an area served by a regional Bell operating company (RBOC) and not Beehive, sat at his computer waiting for his email to download via a slow dial-up connection. As he waited, he found himself staring at a hill outside his house and fantasizing about building a tower there that would support broadband Internet service and allow him to directly connect with his corporate office six miles away.

When McCown found a scrap tower in a Salt Lake City junkyard, he saw an opportunity. That tower was the first piece of equipment for Wireless Beehive, which was soon launched as the wireless broadband sister company of the rural telephone company Beehive Telephone Co.

Of course, the next step was selecting the right broadband equipment to put on that tower. After testing a few equipment options, Wireless Beehive chose Motorola's Canopy® wireless broadband equipment.

The broadband wireless provider has come a long way in just a few years. It now serves more than 3,500 customers with wireless broadband Internet service and attracts about 75 new customers a week on average. Its service area now covers approximately 15,000 households and more than 200 square miles.

Attention Telcos: There are Advantages to Launching Broadband Wireless

Perhaps even more impressive than the wireless provider's growth has been Beehive Telephone Co.'s ability to use the wireless network in myriad different ways. First, the telco has used the wireless network to reach remote customers within its own territories, which include many Federal lands.

For instance, a customer might build a ranch located 20 miles from the nearest phone line. In years past, to reach that customer, Beehive Telephone Co. would have had to run wires across Federal

Synopsis

As an independent telco established in the early 1960s, Beehive Telephone Co. was always looking for new ways to reach its customers – and creative ways to offer new services. And, over the years, it had examined many forms of wireless technology to try to reach customers in remote areas.

But none of them really worked too well. Until it started looking at offering broadband wireless communications back in 2003. Since deploying a Motorola Canopy® network a few years ago, the company has found myriad uses for the technology, including reaching remotely located customers in its own region and expanding its reach into the service areas of other telephone companies.

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lands. And that meant getting permission from Federal agencies – many of which are understaffed – to run those lines, even if the state had already granted permission. And this could literally take years.

Using Canopy equipment instead of copper wires or fiber to reach those customers eliminates the need to apply for these permits. In addition, “we can put Canopy out there for a lot less money than it takes to lay cable,” said McCown, who now serves as general manager of Wireless Beehive in addition to his general manager role at Beehive Telephone Co.

In addition, the Canopy network has allowed Beehive Telephone Co. to expand its business by competing against other telephone companies in adjacent territories. “As a telephone company, we have certain territories that we have permission to serve. There are RBOCs with territories next to us,” McCown said. “According to industry regulations, as a telephone company, Beehive

cannot serve the RBOC territories. But as a WISP, I’m not held back by regulation. I can go into their territory and provide any service I wish.”

Expanding Into VoIP

Its expansion into other territories is part of the reason (in addition to requests from its customers) that Wireless Beehive is now in the process of working through the regulatory and legal issues involved with offering VoIP service. Many of Wireless Beehive’s customers already use their wireless broadband Internet connection to support VoIP telephony services, but Wireless Beehive is working hard to make sure that its own VoIP service is “the same as the RBOC service,” said McCown.

This means Wireless Beehive wants to support E-911 services and number portability out of the box, and that involves working through some regulatory issues with state and other regulators. It also involves designing the network so that the VoIP circuits run through the same switching equipment as traditional circuits do.

According to McCown, the regulatory issues involved with offering VoIP are much more complex than the regulatory issues involved with setting up WISP service, which are virtually non-existent. “There are no regulatory issues for WISPs,” he said. “That’s the great thing about Motorola Canopy and the unlicensed frequency – you don’t have to ask anybody for anything.”

Overcoming Obstacles

Of course, every good success story also contains a few obstacles that have to be overcome. Fortunately for Wireless Beehive, attracting customers was not one of those obstacles. “The system wasn’t on the air more than a few days before word got around in the neighborhood that high-speed Internet was available,” said McCown.

So Wireless Beehive began adding customers right away. But, given the company’s inexperience with broadband and the fact that wireless broadband technology was still relatively new, they didn’t bill customers in the



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beginning. They finally started sending bills after about six months, when they thought that the system was operating smoothly. Unfortunately, that’s when trouble hit. Several viruses caused performance issues on the network.

Wireless Beehive employees quickly told customers that they would not send any more bills until they had fixed the problem, and then they hired network consultants and later a veteran network administrator. The experience taught McCown a valuable lesson: Having someone on your WISP team who understands networking is critical.

“I understood RF but didn’t have a very good network background,” McCown said. “You have to have RF knowledge and networking knowledge, but the networking is the more important one.”

Based on his experience, McCown has some other network advice for would-be ISPs. “Don’t try to build [the network] on the cheap...a lot of

people build this on a flat network configuration, and those fall on their face when they reach a certain number of customers – around 100,” he said. “You need to be fully routed, with routers at every access point. If you build it that way, it will be flawless.”

Marketing for Success

The company has attracted a significant portion of its customer base, which McCown estimates is 95 percent residential, through marketing. “We’ve tried a variety of things,” said McCown. For instance, “a billboard on a heavily traveled highway produced a marked uptick in our sales. That sells for us 24/7.”

Wireless Beehive also offers a referral program to customers. Existing customers that refer a new customer get a month free, and the new customer gets a free installation, a value of \$49.95. All new customers get the first month of service for free. And when the company sends out direct mail, it is “swamped with orders for months,” McCown said. McCown also hires people to go door to door, which costs Wireless Beehive about 10 cents per house. “We’re not sure how effective that is, but you can’t beat the value,” he said.

McCown warns ISPs not to over-market, however. “If they are a new company or a small operator and have a good market, they need to be careful and not oversell,” he said. “They don’t need unhappy customers that wait a month for an install.”

Expanding the Possibilities

Wireless Beehive’s affiliation with Beehive Telephone Co. has helped McCown both control expenses and boost his bottom line. He actually leases his employees from Beehive Telephone Co. and shares a front office with the telco. In addition, Beehive Telephone Co. is also Wireless Beehive’s largest customer. “We have a large wholesale customer built in,” said McCown.

Through its own creativity, Wireless Beehive has also developed an additional key revenue stream for the company – it manufactures and markets two product accessories for the Canopy



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line that Wireless Beehive first developed for its own network. One product is a reflector dish that offers a slightly lower gain than others on the market but also costs less. Its second product is called the Stinger®. It extends the range of a Canopy access point up to five miles and thus eliminates the need to put a satellite dish reflector on the roofs of some customers.

One Big Canopy Plus: Blazing-fast Speeds

Two key attributes that help Wireless Beehive attract and keep customers are the low cost of the service and the blazing-fast speed that the Motorola Canopy network supports. Wireless Beehive delivers 10.2 Mbps downstream “burst” speeds and down/upstream base speeds that start at 512 Kbps.

This means that when customers are using the network for standard applications such as

Internet browsing, they generally experience speeds of 10.2 Mbps. In contrast, “if you are downloading a large file or streaming data, the product has a feature that throttles it down to the speed you are paying for: 512K, which is the speed you get on most DSL modems all the time,” said Chuck McCown.

“Residential customers just don’t do that – they are very bursty, so they get blazing fast speed.”

The bursting capability, McCown said, is one of his company’s best differentiators and his favorite Canopy feature. “The way we’ve designed it – the way Motorola designed it – it makes customers extremely happy,” he said. “We picked the right vendor.”

Even with the higher speeds, Wireless Beehive is still able to offer lower prices than DSL and cable. Wireless Beehive service costs \$29.95 per month, and the equivalent packages in DSL and cable run around \$34 to \$39, McCown said.



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