

Q&A With Alan Davis, CapeNet Middle-Mile Fiber Supports Business

Yes, there is life after BTOP. Here's how one of the first BTOP grantees has grown and prospered – and helped its service area do the same.

The OpenCape regional broadband fiber optic network in southeastern Massachusetts was officially declared open for business about 18 months ago. Its middle-mile backbone was conceived in 2006 by leaders from the local community college, businesses, Woods Hole Oceanographic Institution and Barnstable county government, and the build was kickstarted with a BTOP grant and state funds. The network now stretches 400 miles and serves more than 100 business locations. The network does not directly serve residential customers, although it does help provide fiber-based cellular backhaul.

Spotty broadband in Western Massachusetts prompted Gov. Deval Patrick to fund the Massachusetts Broadband Institute (MBI), which was primarily intended to aid the state's western counties. However, after Therese Murray, president of the state senate, urged the governor not to neglect the underserved southeastern counties, including Cape Cod, Nantucket and Martha's Vineyard, MBI provided early funding for network studies and design in that area. That made the project



Alan Davis, CEO and president of CapeNet

“shovel ready” for the 2009 national stimulus program, and OpenCape won a \$32 million construction grant under the BTOP program. Nonprofit OpenCape then awarded a contract to CapeNet, a separate, privately owned company, to build and operate the network.

BTOP turned out to be only the beginning. **BROADBAND COMMUNITIES** talked to Alan S. Davis, CEO and president of CapeNet, just before Thanksgiving to garner some hints



Middle-mile fiber networks will be featured at the **BROADBAND COMMUNITIES SUMMIT**, April 14–16.



OpenCape covers the southeastern part of Massachusetts.

about life after BTOP and some key technical decisions CapeNet added to the original concept.

BROADBAND COMMUNITIES: *Cape Cod and most of southeastern Massachusetts are within two hours' drive from Boston, but despite being geographically close, they are economically distant from Boston. What has been the effect of OpenCape's establishment?*

Alan Davis: Our entry to the market brought prices down, but that's just a small part of the effect. In terms of service to community anchor institutions, we have been able to differentiate ourselves on a whole host of factors. For example, we have the only end-to-end 100 gig fiber network on Cape Cod and in southeastern Massachusetts. And as a result of the way we designed the network, we have by far the

most reliability of any network in the region.

The intangibles also count. We are local providers and are differentiated from the national providers that are our competition. We also are much better, we think, at being responsive to customers, giving them what they need.

BBC: *CapeNet has also evolved in a short time, hasn't it?*

AD: We have expanded our reach since we got the contract. The network started out from Provincetown [at

the tip of Cape Cod] to Providence [Rhode Island] and up to Brockton [Massachusetts]. We expanded the network from that original concept, with a leg from Brockton directly to Providence and another up to Boston and from there to Cambridge. We also extended a leg from East Bridgewater down to New Bedford.

BBC: *Outside Massachusetts, people think of the state as high-tech, but much of the region you serve has a lot of summer residents and low-income communities such as Fall River and Brockton. Can you talk about the business case and how it leads to the technology decisions you made?*

AD: We are both a wholesaler and a retailer. We do have partners that are resellers or retailers of services we offer: P2P communications, Internet access, dark fiber. This allows us to attract more business. There could be better opportunities in urban areas, but we do fine.

In our area and nationwide, schools are rapidly expanding their need for bandwidth. That is perhaps our fastest-growing business segment. We already serve nine high schools and colleges, and there are more coming. One of our customers is Massachusetts Maritime Academy. Another is Massasoit Community College. We're talking to Cape Cod Community College. There is clearly enough business in serving schools to make a big difference in our business plan.

The other big opportunity is in serving the huge medical broadband users, such as hospitals, physicians' offices and clinics. We are actively pursuing them as customers and starting to make significant headway there. In southeastern Massachusetts, banks have a big need for fiber now for security.

CapeNet serves community anchor institutions, businesses and cell towers throughout the southeastern part of Massachusetts.

Ciena had equipment for a 100 Gbps network, and it was deep into Carrier Ethernet. It had a very good reputation for customer service. The only problems come from cars knocking down poles or customers unplugging equipment.

We're also talking to all the wireless carriers who need to connect their cell towers to fiber networks.

Finally, as the word gets out that the cape is a good place to put a 21st-century business because it has fiber, there are more and more businesses, satellite offices if not headquarters, coming in as potential customers. One is Hydroid, a large robotics company. It means 35 more jobs for the cape.

BBC: *Why did you pick Ciena as the equipment vendor for the network?*

AD: Ciena was the first to build a 100 Gbps network, as far as I know; at that time, it was more typical to have 40 Gbps. We were also intrigued by the fact they were deep into Carrier Ethernet, the IP layer on DWDM [dense wavelength-division multiplexing], and they had a very good plan for that. They had an excellent reputation for customer service, and of course they had interesting thoughts for the future. We did look at others.

BBC: *OpenCape was originally meant to be a 40 Gbps network, wasn't it? That was the grant application.*

AD: The original design didn't address Carrier Ethernet, so we redesigned it with basically a local area network to carry most of the traffic. We would not be able to sustain a business on DWDM alone, although Otis Air National Guard Base is a major DWDM customer for us. Most of our customers want Carrier Ethernet. Of course, that is just an educated guess. We sell them dark fiber, so I don't know what they do, only what they say they want to do.

BBC: *Can you detail any aspects of the network that need work or that turned out better than expected?*

AD: Everything is working as planned. There are very few problems; all the optical equipment and Carrier Ethernet has worked very well. Most of the problems are caused by automobiles striking poles, knocking them down. Or you get a customer unplugging equipment or using the wrong port, not knowingly. I cannot remember a single time it has been the fault of Ciena equipment.

BBC: *How do you manage the network?*

AD: We have a network operations center but signed recently with a national, in fact international, provider, INOC.

BBC: *Do more of your customers want to get connected to Boston?*

AD: Increasingly that is something our customer base will want, to get from the cape to Boston. One potential client is looking to get from Sandwich [on the cape] to Charlestown [in Boston]. They already have fiber to One Summer [a fiber condo and data center in downtown Boston], so we just need to get there.

BBC: *What advice do you have for deployers in similar circumstances?*

AD: You can't just be a BTOP grantee that handles community anchor institutions. That is not a way to sustain viability. How do you operate a network so that it can last 25 or 40 years? If you are a nonprofit that won a BTOP grant, select an operator that really is interested in operating like a for-profit. OpenCape is proselytizing the benefits, and we

do the *real* day-to-day work, signing up customers, making sure everything runs properly. Think of us as the guy who has a 99-year lease. We do the tenant work; the owner just owns the building.

BBC: *Might you be looking for something else to run?*

AD: We would look closely at mergers and acquisitions if a good opportunity presented itself. We have a regionwide interest.

BBC: *Over the next five years, do you have any plans to move into serving residential customers?*

AD: We have looked at some. One of the issues for residential service now is how to handle video, but as we go to over-the-top video, this will change. A dense area like Provincetown is of interest even though the population is not large. As an old cable operator, my instinct is that the numbers could work despite the seasonality.

We have a great asset, and as people and businesses learn how to use it, anything is possible. There are, for instance, lots of little businesses there that want to stay open year-round. They want to do it through mail order. Provincetown also has professionals who spend four days a week in Boston and would rather spend two days.

BBC: *Have you been able to lease or buy even more fiber in addition to the BTOP plan?*

AD: Let's talk in a few months. Lots of BTOP grantees are looking at that.

BBC: *Carrier Ethernet helps there too, doesn't it, so that the network doesn't look as if it is patched together?*

AD: Exactly. One of the areas we are very interested in is small cells. There are huge coverage gaps on the cape, and we can handle that.

BBC: *Does this make the residential business case better?*

AD: I'm not sure, but the more small cells, the more we can build out the network economically, so maybe residential would come into reach. ❖