

City of Bristol, Virginia BVU OptiNet

This month's featured municipal FTTH deployment is BVU OptiNet, part of Bristol Virginia Utilities. BVU was the first public utility in the US to offer triple play services over a FTTH network, and last year it launched BVU FOCUS, a business unit offering IT consulting, operations and management services to other municipal entities. BVU FOCUS is now managing MI-Connection, a municipal cable system in North Carolina. (The information below applies only to the OptiNet deployment in and around Bristol, and not to MI-Connection.) Our thanks to Wes Rosenbalm, president and CEO of Bristol Virginia Utilities, for his help in putting together the information for this snapshot.

- BBP Editors

BACKGROUND:

Provider name:

Bristol Virginia Utilities,
BVU OptiNet

Public entity owning the provider:

City of Bristol, Virginia

Current/planned FTTP service area:

City of Bristol and the counties of Washington, Smyth, Tazewell, Russell, Buchanan, Dickenson and Wythe

Number of premises passed:

Currently 15,997; projected expansion into nearby Abingdon, Virginia, will add 4,000 additional households

Number of FTTP subscribers:

1,207 business and 7,927 residential

Incumbent telco/MSO in the area, and their broadband offerings:

Embarq, Verizon, Charter and Comcast all offer high-speed service

FTTH NETWORK PROFILE:

Miles of fiber backbone: 350 miles

Miles of fiber access infrastructure: 450 miles

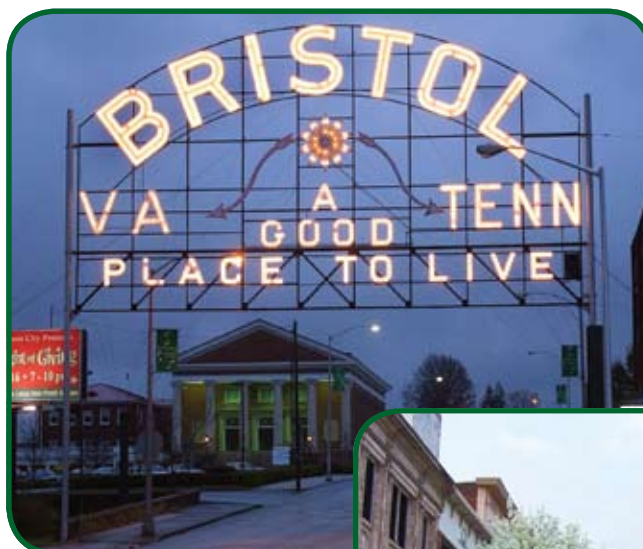
Number of POPs: 15

Network architectures: BPON and GPON

Business model: Retail only

Services offered: Residential: voice, video and data (triple play)

Business: Triple play plus advanced Web services (hosting, firewall, co-location, network maintenance) and advanced voice solutions (PRI, T-1, LANs/WANs)



This slogan sign is considered a landmark in the twin cities of Bristol, Va.-Tenn. The sign is positioned over State Street, a roadway along the border separating the two states.



A downtown view of Bristol, Va., in spring.

Highest tier Internet access speeds/cost:

Residential: 6 Mbps/256Kbps for \$39.56 per month

Business: Up to 50 Mbps Internet access, and up to 1000 Mbps for LAN point-to-point service (prices are quoted individually). Symmetric access for businesses ranges from \$298/month for 1.5 Mbps up and down to \$944/month for 6 Mbps up and down.

Applications resold: None

MUNICIPAL FTTH DEPLOYMENT SNAPSHOT



Adam Martin and Glen Fuller monitor BVU OptiNet from the Network Operations Center (NOC).



BVU OptiNet Director of Network Engineering Mark Lane verifies authorization for a CATV satellite receiver.

Take rates:

Video: 56%; 32.7% for digital video
Data: 42.8%
Phone: 54%

Year deployment started: 1999

Year services began: 2002

Years to complete buildout: 1 year for first phase; build-out is ongoing

DEPLOYMENT TEAM:

Design: Initial design was by Atlantic Engineering Group, current design by BVU

Construction: Initial construction by Atlantic Engineering Group, current construction by Edwards Telecommunications Inc.

Installation: Bristol Virginia Utilities

Integration: Bristol Virginia Utilities

DEPLOYMENT DETAILS:

Aerial, underground or both: Both

Methods used for underground installation: Direct burial and directional boring

Method for connecting fiber: Fusion splicing

Splicing equipment: Fusion splicer and cleaver

OPERATING EQUIPMENT:

Central office electronics: Prisma IP Transport, Alcatel BPON and GPON, Calix GPON, Juniper Networks, Cisco Systems

Fiber cables: OFS and Corning

Video headend: Scientific Atlanta

Testing equipment: Various

ONTs: Calix GPON, Alcatel BPON and GPON

Power supply: Alpha and APC

Set-top boxes: Scientific Atlanta 8400HD and 4250HD

KEY SOFTWARE:

B/OSS: BillQuest and ETI Software Solutions

Network management system: OpenNMS

Softswitch: MetaSwitch

OPERATING RESOURCES:

Number of central office personnel: 8

Number of OSP personnel: 14

Number of CSRs: 24

Trucks, trailers, etc.: Vans, buckets and splice trailers

BIGGEST CHALLENGES:

The biggest challenges that BVU faced in launching OptiNet were overcoming outdated Virginia state laws related to municipalities offering telecom services and legal and regulatory issues raised by local incumbents. One of the biggest hurdles was a State of Virginia statute that prohibited municipal entities from offering telecom services. Because OptiNet is government-owned, BVU could not legally provide telephone, Internet or video services in Virginia. To overcome this obstacle, the utility filed a complaint against the state, pointing out that a more recent federal statute – the Telecommunications Act of 1996 – made the state law invalid. The Virginia General Assembly agreed in 2002 by overwhelmingly passing legislation that reversed the previous ruling.

That same year, as BVU was ready to roll out its suite of services, the incumbent cable operator in Bristol entered an injunction against BVU, claiming the utility wasn't legally authorized to provide cable television (CATV) services. The courts ruled in favor of the cable operator, and BVU was forced to seek a legislative change to its charter and a separate legislation that would allow it to provide the services. In 2003, the Virginia General Assembly once again came to the rescue, passing Senate Bill 875, which reversed the decision.

In another instance, the incumbent telephone operator accused BVU of cross-subsidizing its phone service and charging prices below cost. Again, the incumbent filed a legal complaint that led to another dramatic showdown. This

MUNICIPAL FTTH DEPLOYMENT SNAPSHOT



BVU Network Service Specialist Chris George checks a FTTH connection at a residence.



(left to right) Lead Residential Service Coordinator Gary Roberts, Commercial Service Technicians Jim Cantrell and Jeff Lytz, and Network Service Specialist Chris George review a map showing anticipated FTTH deployment of BVU OptiNet in Abingdon, Va.

time, BVU's chief financial officer had to testify before the Virginia State Corporation Commission. Based on her testimony, the commission eventually ruled against the complainant, saying it saw no evidence of cross-subsidization.

BIGGEST SUCCESS:

BVU OptiNet has fundamentally changed the economic face of Southwest Virginia. Because of grant funding from


the Economic Development Commission of the US Department of Commerce and the Virginia Tobacco Indemnification and Community Revitalization Commission, businesses in seven rural counties in Southwest Virginia now have access to broadband speeds of up to 1 Gbps and transparent LAN service, which vastly improves their communications and networking capabilities. High-tech companies Northrop Grumman and CGI have both built major facilities in Russell County, and two new industrial parks are currently under construction in Buchanan and Tazewell counties. Recent media reports state that the high-tech infrastructure has already brought 1,220 new jobs to Southwest Virginia, "with more than \$50 million in new private investment and \$37 million in annual payrolls."

Other significant benefits are that small health clinics in isolated locations of Southwest Virginia now have the ability to be digitally linked to larger comprehensive hospitals, and most public school facilities have been connected to their central offices. To meet workforce needs, businesses are working with regional community colleges and universities to produce high-tech workers. The University of Virginia at Wise launched the state's first undergraduate software engineering program due to partnerships with Northrop Grumman and CGI. In addition, the town of Lebanon recently turned a former shopping center into the Virginia Technology Development Center, a new high-tech training facility to be managed by the University of Virginia at Wise. **BBP**


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