



Presentation by Conxx CTO Jeff Blank

Public officials are being pulled in different directions for the funding of networks for many diverse constituent groups, including but not limited to:

- Public Safety and Emergency Services
- Public Broadband
- Schools and Libraries
- Health Care and
- 2 way radio networks for Municipal services.

Understand that in nearly every PA County there is a 911 network, a county data network, one or more telephone networks, school and library networks, health care networks, networks for public WiFi, networks for utility services and SCADA, and networks that backhaul security and traffic video.

All of these networks cover the same geographic areas, compete for limited funding and each drive their own maintenance costs.

In the past, single purpose networks were built one atop the other as each division of government adopted newer technology. These networks serviced a single need, each built by a parent agency trying to meet its own parochial need. As these parochial needs grew, more and more single purpose networks were built for services such as public safety, schools, libraries, broadband, municipal services, and even voice traffic. The result is redundant networks, significantly increased costs and operational inefficiencies.

Today's networking technologies have advanced to the point where single purpose networks are, or should be, a thing of the past and not a plan for the future.

Multiservice networks implementing such technologies as private MPLS (which is short for multiple protocol label switching) and SD-WAN (short for software defined wide area networks) have enabled the building of a

single network with very diverse purposes and varied priorities on one platform.



This combined network architecture maintains all the safety, security, and priorities of the single purpose built networks, but allows for the more efficient use of public and private funds. These multiservice networks solve the needs of many constituent groups and efficiently use public funds. In fact multi-service networks are more efficient, more reliable, have greater capacity and can be less costly to build and maintain. CONXX has built and can demonstrate these networks in NY, MD, DE, and here in PA

So why isn't this being done as a preferred practice?

In my opinion, public policy lags quite a bit behind the state of the telecommunications industry. In trying to set priorities and direct public investment, you are handicapped by dated yet lingering conceptions of the past that yield outdated funding mechanisms and regulation.

The two arguments most often encountered when building a multiservice network are based around funding and sovereignty misconceptions. Statements like "I can't pay for it with these funds if it's going to be partially used for that." "I can't have school Internet take down my public safety radio".

Let us look at the second statement, which cites concerns about security and sovereignty.

In a multiservice network – data traffic is 100% separate and secure. Just as 2 phone calls pass through the same telephone central office without conflict so does traffic flow through a multiservice network without conflict.

In the same way legal contracts are written to share resources, multiservice network configurations are written to keep traffic separate and secure. Remember that a school and the FBI can use circuits through the same phone system switch securely. These multiservice networks can have very silo-ed purposes and still share a combined infrastructure.



And telcos handle data the same way. There might be a cable to your building, and the next building and the next – but back at the central office for Verizon or Frontier or Comcast all of that proprietary data is routed over the same switches and processed via shared networks. Our multi-service networks use the same protocols, and the same equipment to keep data safe, secure and separated. There is no technology drawback to investing in multi-user networks.

Now for the first item -- funding.

Traditional funding mechanisms have frowned on or prohibited combined projects. For example a public safety radio upgrade was difficult to combine with a municipal services network, or a public broadband project.

Earlier this year we were advising a PA county that was attempting to improve broadband for its residents while also undertaking a 911 network upgrade. The county administration was interested in a multi-service platform that would handle public safety and community broadband – until advised that a shared use network didn't conform to current funding guidelines. Interesting to note that the multiservice network was actually less expensive to build, but PEMA didn't have the flexibility to fund a new technology project.

This is where the leadership of you as policy makers is needed to evaluate newer, but proven technology and set policy that secures a greater return on the investment of public funds.

With our comments we submit a White Paper written by FEMA describing our multiservice network platform as a SMART PRACTICE, a Case Study on the Lackawanna County multiservice network and correspondence regarding the aforementioned guidance disallowing multiservice networks.

Thank you for the opportunity to present today and I look forward to answering any questions you may have.