



Event: FCC National Broadband Plan Staff Workshop
Date: Thursday, Aug. 13
Location: FCC Commission Room, 445 12th St. SW, Washington D.C. 20554
Session: TECHNOLOGY: FIXED BROADBAND
Panel 2: Fixed Broadband Technologies
Opening Remarks: Geoff Burke, Senior Director, Corporate Marketing, Calix

Good morning. I'd like to thank the FCC staff for extending Calix the opportunity to address this audience and provide its insights and perspectives to help shape this landmark National Broadband Plan. First I'd like to take a moment to introduce our private company that may not be as well known to the general public, but enables today some of the nation's most advanced broadband services to millions of homes and businesses – many of which reside in rural areas. In fact, more than 40% of the nation's rural service providers rely on Calix access platforms for broadband service delivery across a variety of copper and fiber infrastructure. We are also the nation's leading provider of broadband platforms to rural markets, including DSL and Fiber to the premises. Walter Johnston has asked me to focus on today on the unique issues and influences affecting broadband in rural markets, with a special focus on fiber.

My customers are the “canaries in the coal mine” for the industry. Unencumbered by the scope, scale, and bureaucracy issues faced by larger operators, they experiment with new technologies and react quickly to changing market conditions. Sometimes counter-intuitively, rural markets are the proving grounds for the nation. That's why many of our customers lead the nation in advanced broadband services, with hundreds deploying advanced IPTV and RF video overlay services, and some of the most wired communities in the nation being in out-of-the-way places.

So what are our canaries telling us? They prefer fiber. As the technologies like GPON have matured, the economics of deployment have become increasingly attractive. What we are seeing today are deployment costs typically of under \$800 per home passed and \$2000 per home served. Justifying this expense are strong subscriber takes rates of usually over 50% of homes passed. Complementing their business case, many are finding lower operational costs as well as long term mobile backhaul contracts when they are first to offer fiber to cell towers in anticipation of 3 and 4G services.

So what do we see as we look forward?

A world rapidly moving to all video. What do we mean by this? It's a broadband experience that progresses from textual, to graphical, to the rich interactive shared content that we are just now



starting to scratch the surface on with Hulu, IPTV, media sharing, and cloud gaming. For your kids it's not even a progression – it's just a reality.

That trend carries over into all other forms of communicating and educating. The hot item on the news in California yesterday was that 90% of textbooks in the state will be replaced with e-textbooks in the next 5 years, not only to save costs, but because kids found the traditional texts boring.

A 2008 ITIF study pegged the average bandwidth speed in the US today at roughly 5Mbps. If you assume a rate of growth of 70% which has been fairly accurate over the last decade, if you were to extend that same growth rate out 5 years, your downstream traffic is at 100 Mbps, and within a decade you're at 1 Gbps AVERAGE. Achievable over fiber? Clearly. Copper, HFC, or wireless – pushing the limits.

So what policy guidance does our rural broadband experience lead us to impart? Access equipment is deployed outdoors, in the mud, on poles and underground, in densely and remotely populated places, and everywhere in between. It is not an infrastructure that you want to tear up every few years, nor create incentives to deploy technologies with diminishing rates of return. If you are implementing a long term strategic plan, you look to the future and incentivize technologies where we are just at the beginning of its innovation curve. Fiber allows you to achieve that better than any other technology.

Second – Future service demands will require fiber speeds, both up and downstream, as well as for reduced latency. HD video alone stretches existing infrastructure to the seams. For fiber – no problem. Add to this flexibility and openness, which although composed of many parts results in a superior subscriber experience – both fixed AND mobile.

Lastly – “how do we afford this”? We have hundreds of customers who have made fiber deployments work for them with limited support today. Let's take a lesson from some experienced canaries – the existing grant/loan program caused 100% my rural service providers who could have chosen ANY technology, to unanimously choose fiber. Tax credit programs could go extremely far in stimulating fiber – at no out-of-pocket expense to the government. And for those in truly high cost areas, cost recovery has proven to be an effective program.

In any event – I encourage you to set the goal high from a bandwidth perspective and create policy that drives that goal. Incremental steps are not constructive. You'll find, as our customers have, that that the higher the bandwidth required, the more cost effective fiber becomes.