Living on the Leading Edge

y Chris Heinemann

Every rural telco faces unique challenges. During the National Telecommunications Cooperative Association's 2012 Annual Meeting, several keynotes highlighted key common challenges confronting most IOCs today.

The need to keep pace with growing customer demands for more bandwidth and new services, fend off competitors, and innovate to create new revenue is enough of a challenge. Figuring out how to solve all of these issues while containing costs and ensuring ongoing profitability is even more complex, particularly during this sluggish economy. Compounding the situation is the uncertainty created by the FCC's policies regarding broadband support.

For telcos to appropriately respond to the rapid changes in the requirements of their markets, they need to achieve a corresponding evolution of their rural broadband network strategy. What's needed is a better way to deliver more band-

width, more quickly, more cost effectively, and without sacrificing networking performance or the subscriber's experience. This will be possible only through an evolution of network architecture that makes the outside plant (OSP) a more scalable, strategic asset -- preferably one in which additional CapEx investment is minimal and OpEx is optimized.

Motives for Evolving the Network Architecture

The FCC is focused on delivering universal broadband to residential subscribers. Their view is that broadband has gone from being a luxury to a necessity for full participation in the American economy and our society. The FCC adopted comprehensive reforms of its Universal Service Fund (USF) and Intercarrier Compensation (ICC) systems to accelerate broadband rollout to the 19 million Americans living in rural areas who currently have no access to fixed broadband. The FCC believes this reform will expand the benefits of high-speed Internet to millions of subscribers by transforming the existing USF into a new Connect America Fund (CAF), which supports broadband builds.

The impact of the CAF on IOCs, however, is not yet fully known, creating uncertainty and sometimes delaying broadband investment for many rural telcos. Even some of the price cap carriers (e.g., ATT, Verizon, CenturyLink, Frontier, and Windstream) to which the CAF initially applies have turned down money, perhaps because they believe it's too difficult to file, the degree of support is hard to calculate, and they are questioning whether they can cost-effectively implement the government requirements to make projects shovel-ready. Meanwhile, this has caused many IOC's to delay investment.

"The FCC order has led to a state of paralysis for rural carriers," says Shirley Bloomfield, CEO of the NTCA, which serves as the voice of rural telecommunications. "The NTCA hosted 50 CEOs recently, and when asked how many were moving forward this year with network build outs, only one CEO raised their hand."

---- Shirley Bloomfield, CEO of the NTCA

The Sweet Spot

While the FCC has created uncertainty, one thing seems clear: The funds offered are not so generous that an operator can expect to make profits from CAF unless they achieve a whole new level of efficiency in their broadband builds. As previously mentioned, the first phase of the CAF is aimed at price cap carriers, because this is where the government wants to see ubiquity first. Yet, even these larger carriers are finding it prohibitive to accept support because of the complicated filing process and formula created by the government to determine funding. Bloomfield comments: "Telcos will receive support based on a complicated formula that considers, for example, how many customers are served in how large an area. The changed formula -- which uses inaccurate data -- means telcos simply can't predict how much money they'll get back and, therefore, they are hesitant to invest."

Bloomfield, along with executives from many rural IOCs, met in July with federal policy makers to urge suspension of new caps on USF support that appear to have been implemented without any testing to confirm their validity or volatility. While they try to understand more fully how the order will impact them, network buildout has stalled.

While traditional voice service is no longer enough to retain customers, Cisco has declared that "video is the next voice." This scenario is playing out in U.S. households. The most recent National Center for Health Statistics *Wireless Substitution* research claimed that 31.6% of U.S. households did not have a landline phone but did have at least 1 mobile phone. As part of a revamped busi-

ness model, bundling voice, data, and, particularly, video services, and providing the customer with a single bill will play a critical role in the telco's customer retention strategy. And all providers know that keeping any customer is typically easier than gaining a new one.

Providing broadband to rural communities goes well beyond a single-bill retention strategy. And with a large proportion of customers wanting more bandwidth, telcos also need to provide more than just the Internet. Customers now want voice, data, and video services like IPTV or OTTV services such as NetFlix and Blockbuster. To provide these services, solutions are required that will scale with their network and are flexible enough to quickly change with new service opportunities.

Long hailed as the "killer app", video's time has finally come. Earlier this year, comScore released data in the report *comScore Video Metrix*, which showed that, in January 2012, 181 million U.S. Internet users watched nearly 40 billion videos online. Jeff Heynen, the directing analyst of broadband access and video at Infonetics Research (www.infonetics.com), recently surveyed 18 IPTV providers worldwide. "We asked them when and to which devices they will deliver multiscreen services," says Heynen. "Thirty-three percent (33%) offer multiscreen today, and that number will grow to 83% by 2013, with 72% doing so on a tablet, 67% on a PC, and 56% on a mobile phone." Heynen also asked how many operators would be trialing or deploying IPTV services by 2013. "Every single respondent said yes."

To meet this increased demand for video, telcos need to examine cost-effective ways to scale their networks to deliver IPTV and OTTV services. This, of course, is where the challenge lies.

To compete in the Triple Play market, Heynen concurs with Actelis that telcos need to provide ~8Mbps per HDTV channel, ~3Mbps for standard definition channels, ~4Mbps for data overhead, and ~1Mbps for voice. This means the sweet spot is somewhat of a moving target per telco, though these estimates tell us that it lies somewhere between 15-30 Mbps.

A Phased Approach for a Flexible Network Architecture

Many access solutions attempting to deliver these services are costly. They also are not immediate, and may take months or even years to deploy and see a reasonable ROI -- as is the case with fiber.

So what does this all mean for the OSP?

These motives translate into telcos needing to leverage their existing infrastructure to provide the necessary bandwidth and reliability that fuel new service offerings to retain customers now. It also begs for solutions that are flexible enough to change with shifting customer demands and new service opportunities. The answer lies in a more scalable approach to network buildouts. For business cases where investing in fiber or deploying new DSLAMs is currently constrained due to funding and other factors, telcos need network solutions today that can be deployed quickly and economically. Additionally, these assets should be easily redeployable within the OSP environment to provide more bandwidth at the lowest possible cost to the telco and customer, and with a reasonable ROI for the telco.

This seems to beg for a modular approach to help maximize the utilization of existing OSP equipment with the benefit of a lower cost burden of enabling new services. This will help generate the incremental revenue necessary to create stability, provide investment in alterative solutions and future growth. This strategy allows telcos to further develop their long-term network plans without losing customers.

One solution that telcos should consider is Broadband Accelerator (BBA) technology, which makes it possible for them to exploit the existing infrastructure and deliver broadband across their entire customer service area by extending the bandwidth and reach of network. This eliminates the immediate need to invest heavily in DSLAMs and fiber. Instead, this provides a fiscally responsible approach that best leverages a telco's wireline CapEx budget while delivering the quickest ROI. This pragmatic approach also helps to eliminate uncertainty surrounding cost recovery volatility associated with the revamped government programs.

Broadband Accelerators help telcos deliver broadband at a price that's appealing to subscribers. What's more, BBAs are fast to deploy and modular, allowing telcos to quickly install them when and where necessary. When the time comes for a customer serving area (CSA) to be upgraded with a new DSLAM or FTTx, BBAs can be quickly removed and added to a new CSA that is currently out of reach from getting broadband.

This is a more strategic approach for deploying services across an entire network, enabling telcos to plan a smarter buildout and augment their network as necessary based on revenue they generate from new broadband services delivered from the BBAs.

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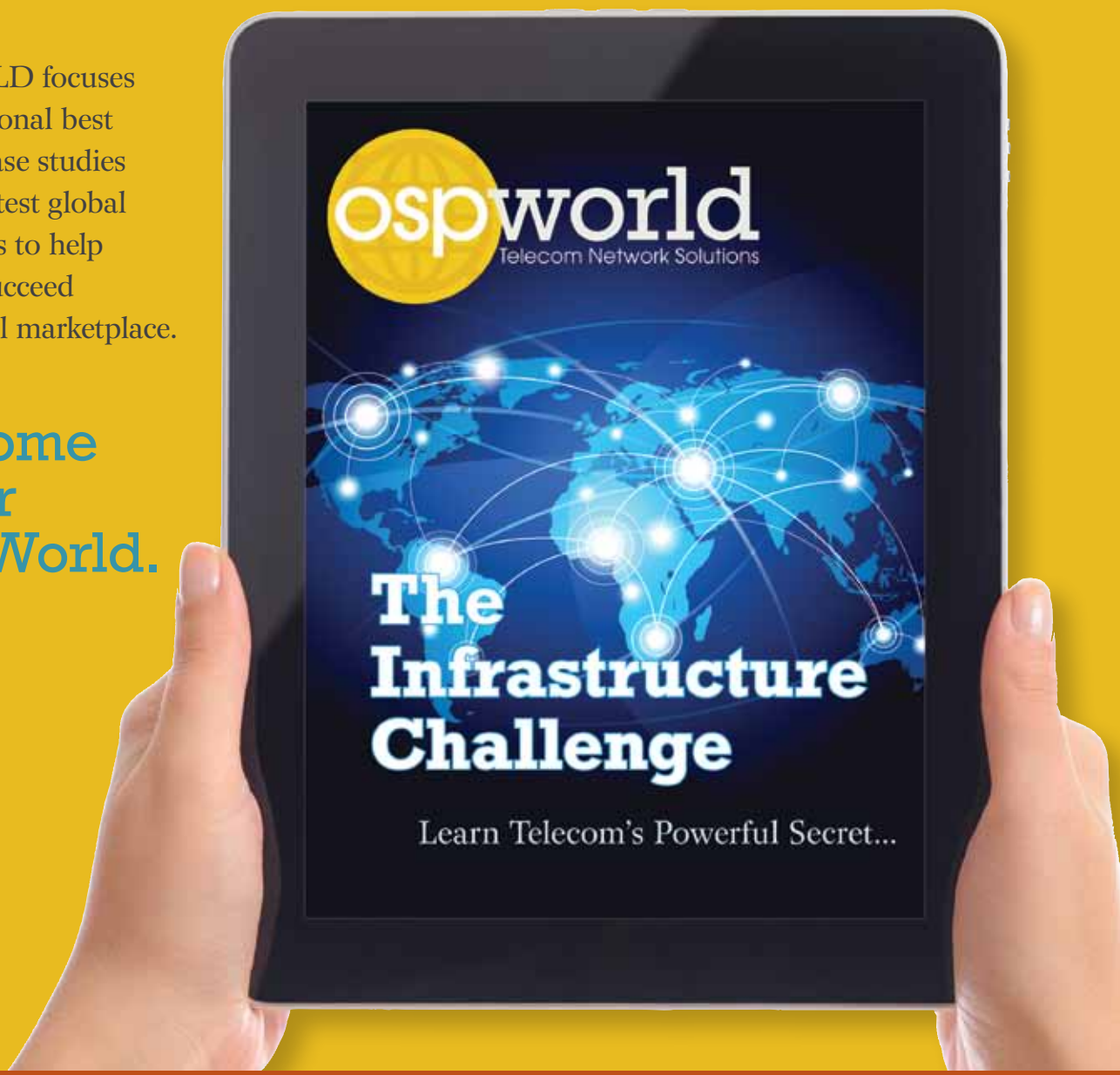

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