

A Busy Year Ahead for Broadband

There's much to look forward to – more fiber to the home, more deep fiber, more wireless, smarter homes and buildings.

By Masha Zager / *Broadband Communities*

As the new year began, I rounded up a panel of industry experts to talk about what might happen in the world of broadband in 2018. Forecasting can be perilous, but our panelists ventured – and defended – opinions on the major topics of the day.

FTTH DEPLOYMENT WILL CONTINUE TO GROW

“My best educated guess is that there will be some additional growth in FTTH deployment this year over last year,” says Michael Render, president of RVA LLC. Render’s guess on this subject is likely the most educated of anyone’s, as he has tracked the deployment of fiber to the home in North America every year since it began. His surveys formed the basis for a report recently published by the Fiber Broadband Association, which shows that 2017 was a record year for FTTH deployment.

“The larger providers, AT&T especially, are back in the high zone,” Render explains, “and the smaller group continues to do quite well. AT&T is still planning a really large build, and the smaller players look reasonably strong. There are some good signs for electric co-ops, which appear to be continuing to cover the really rural areas. Municipalities are more mixed, as are public-private partnerships” – though the growth of the internet of things and smart-cities applications offer more reasons than ever for providers and cities to work together, he says.

Render continues, “Barring a major economic collapse, the demand is strong, the need is there, and whether they like or dislike the current

policies, the general trend is up because they see the need for fiber ... for the reliability that comes with a stable fiber system and the blended up-and-down speed, not just download speed.”

Render says that although growth in 2018 over 2017 could be fairly strong, there are some limits to growth. “There are constraints in capital, in fiber and in construction crews,” he says, “and some companies will try to make do with copper for as long as they can. But more and more cable companies are admitting that all-fiber is on their future roadmaps.”

In multifamily communities, most large providers are deploying fiber primarily in new, upscale buildings. However, in older buildings, owners and smaller providers have found a way to pay for retrofits. According to Bryan Rader, president of UpStream Network, an independent multifamily provider, bulk internet service is becoming more prevalent in part because it guarantees a return on investment for a fiber upgrade. “I see that as a really big, accelerating trend,” Rader says. “Lots of good, class B properties built in the 1980s are desperate for technology.”

POPULAR SUPPORT FOR MUNICIPAL NETWORKS WILL GROW

Though municipal fiber networks are opposed by many incumbent providers, they are less controversial among members of the public. In fact, a Pew Research Center survey found in 2017 that 70 percent of U.S. adults believe local governments should be able to build broadband



networks if their citizens do not have access to robust, affordable broadband. Jim Baller, president of the Washington-based law firm Baller Stokes & Lide, believes public support for municipal broadband will grow in 2018, “particularly because the FCC’s recent deletion of its rules protecting network neutrality has spurred a groundswell of support for public broadband networks as a potential alternative to dependence on the voluntary restraint of a handful of self-interested and unfettered corporate giants.”

Baller says communities increasingly believe advanced communications networks are vital for economic development and competitiveness, education, public safety, health care, transportation, environmental protection, urban revitalization, democratic discourse and more. “As a result,” he says, “I expect that a growing number of local governments in 2018 will aggressively seek access to such networks by working with willing incumbents, partnering with new entrants, building their own networks

where necessary or developing other creative options.”

Doug Dawson, owner and president of CCG Consulting, expects rural communities to be the most likely to take broadband matters into their own hands. “The digital divide between towns and rural areas is now obvious to everybody,” he says. “Rural citizens are demanding that their local governments help them find a broadband alternative. This movement is accelerated by the numerous success stories from proactive communities that have found a broadband solution.” In addition to public-private partnerships and other creative solutions, Dawson expects more communities to consider “bringing public financing to help solve the problem.”

CORD CUTTING WILL ACCELERATE

The pay-TV market is facing a “perfect storm,” Dawson says, with traditional programmers continuing to raise their rates and over-the-top (OTT) distributors investing in more and

more original content. “In 2018, a lot more people are going to be lured into switching to one of the alternatives. The third quarter of 2017 saw the cable providers lose a million customers, and losses will accelerate in 2018.”

One of those cord cutters was Jaime Fink, chief technology officer of Mimosa Networks. (See “Breaking Up Is Easy to Do,” p. 30.) Fink says that because of live sports, reasonable data caps and user-friendly apps, “cord cutting in 2018 will become an increasingly viable option for consumers not wanting to sacrifice their favorite content.”

Cord cutting is affecting the multifamily market, says Rader. Though condo owners and older renters have not significantly changed their viewing habits, younger residents are much more likely to watch OTT video than traditional TV. In multifamily communities that have a high proportion of young renters, owners that offered bulk TV packages for decades find that residents no longer consider it a technology amenity. In some buildings,

only about 30 percent of residents are interested in traditional TV services.

For these owners, “raising the rents by \$60 to cover a 175-channel HD package with DVR now has a decreasing value to their renters,” Rader says. What’s worse, many bulk TV contracts have 10-year terms at rates that increase by 5 percent per year. Owners that renew bulk contracts today may find themselves, 10 years down the road, “paying all this money for something no one wants anymore.” Thus, as bulk internet service becomes more common, Rader foresees a corresponding decline in bulk TV. It won’t all happen in 2018

– but within a few years, he predicts, bulk TV will be only about half as prevalent as it is today.

SMART HOMES WILL BECOME MAINSTREAM

In addition to justifying infrastructure upgrades, bulk internet service is gaining popularity for another reason: It helps multifamily property owners support new technology amenities such as digital door locks, thermostats and voice-controlled gateways. Rader is skeptical that many residents will use these devices anytime soon. “They’re designed for prospects, not residents,” he says. “They appeal to the emotional side.”

However, if the devices are built into an apartment and automatically activated as soon as a resident moves in, they can be very easy to use. Over time, Rader says, people will begin taking advantage of them to run their households more efficiently (for example, by scheduling appliances to run at off-peak hours).

Outside the multifamily market, Dawson expects voice controls to go mainstream in 2018. Because voice-control devices can perform simple web searches, operate home intercom systems, initiate phone calls and texts, control TVs and other devices and play music throughout a home, most

BROADBAND DEPLOYMENT AND THE PRICE OF OIL: A STRATEGY FOR EVERY CONTINGENCY

By Cheri Beranek / Clearfield

When incomes are rising, unemployment is minimal, interest rates are low and gasoline is cheap, consumers keep on spending. In fact, the Conference Board reported in fall 2017 that for the first time since the middle of 2014, the U.S. economy sustained 3 percent growth for two consecutive quarters, providing strong momentum into 2018. The current Conference Board forecast calls for 2.5 percent growth in 2018. This would represent the economy’s best two-year run in more than 10 years.

But there’s a cloud on the horizon. Some forecasters predict that the rising demand for oil and falling inventories will mean higher oil prices in the first half of 2018 – and this could slow economic growth, pushing the economy toward a recession.

What does this mean for the future of broadband markets?

Though the insatiable demand for bandwidth grows consistently, the demand for and production of crude oil is cyclical. Thus, the health (or lack thereof) of the economy won’t diminish consumers’ appetite for bandwidth, but it could threaten the availability of capital required to make investments in fiber-rich networks.

As the CEO of a public company that focuses exclusively on working with broadband service providers deploying fiber networks, I am not concerned. Why not? Because I believe the focus on cash optimization will enable all broadband service providers, whether they are incumbents or competitors, for-profit or municipal, to build the heterogeneous networks

required to meet the demands of all stakeholders – company owners (or taxpayers) as well as subscribers.

Fiber is the only sure bet for long-term economic value, as it future-proofs all networks. Fiber offers the best long-term value and return on investment because once the fiber is in the physical plant, it is available for the next 20 years. However, other technologies – fiber deep technologies, which run the gamut from DOCSIS to fiber to the node and fiber-fed wireless, offer more immediate return on available cash, even though they are more expensive in the long term.

Fiber all the way to the home and interim solutions of fiber to the node or antenna are both the right solutions. Choosing among them requires understanding the build priorities and the deployment obstacles that must be overcome. Once these are clear, having the right products to support the chosen fiber network design is key. Products that are universal, flexible and fast to deploy will bring faster revenue to future-proofed networks.

Forecasting the economy is impossible, but growing demand for bandwidth is a sure bet. That’s why Clearfield is betting on a fiber-to-anywhere architecture that ensures that every broadband service provider can get the lowest total cost of ownership.

Cheri Beranek is the CEO of Clearfield, which designs, manufactures and distributes fiber optic management, protection and delivery products for communications networks.

households will find them useful. He says, "This will be the year when a lot of people accept the idea of a voice interface to technology as an alternative to computers or smartphones."

Though IoT devices typically use little bandwidth, they pose other challenges for internet providers in multiple-dwelling-unit (MDU) properties. Richard Holtz, CEO of InfiniSys, which designs technology infrastructure for MDUs, explains that the devices tend to be "clumsy users of bandwidth" that take up much of the time slice. "Everything else has to compress itself to fit in," he says.

Security is another challenge, especially in dense housing where residents can gain access to one another's devices. "Who is going to manage all the authentication needs?" Holtz asks. "What happens, and who takes ownership? ... How do you build enough support staff to do it? What's

2018 will be the year that people accept a voice interface to technology as an alternative to computers or smartphones.

the model, and who pays for it?" There is agreement about some issues – for example, that video surveillance cameras need to be isolated from other devices on a network – but many questions remain. Holtz is confident, however, that owners and providers can work together to meet these challenges. "Consumer-oriented IoT is not a problem but an opportunity," he says. "It's solvable and addressable. It just takes money and the recognition that you have to solve it."

He adds, "We've solved the bandwidth problem. The technology is there today; there's no reason you can't

deliver enough bandwidth to make people very happy. But you have to manage the user experience."

SMART BUILDINGS WILL BECOME MAINSTREAM

Mike Slovin, vice president of Xfinity Communities, the Comcast division that serves MDUs, says that though many internet providers successfully support smart-home amenities in individual units, few have transformed those disparate devices into smart community networks. "Cost is an issue, and so is technology, and not really having a consistent way to take

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Using Low Power Wide Area Network technology, MDU owners can place sensors throughout their buildings and manage them more cost-effectively.

residents' devices and roll them up into one network," he explains.

Comcast expects to solve this problem soon. The company recently launched a subsidiary called machineQ that supports communitywide IoT networks using Low Power Wide Area Network technology, which is inexpensive to deploy and operate. In 2017, Comcast deployed these in MDUs in 12 markets. They are getting enthusiastic reviews from owners.

MachineQ networks allow property owners to control door locks and thermostats in unoccupied apartments, where resident devices are absent or inactive. But in a recent meeting, Slovin says, owners also expressed interest in many other types of property management functions. For example, by placing sensors on various property assets, they could detect water leaks, control pests and determine when trash bins need emptying.

These functions haven't been easy to automate in the past. "What we heard from owners is that this would solve their main challenges – lack of coverage, power constraints and costs. ... You can use a battery-powered sensor where you used to have to put a plug in a weird area to monitor the power flow."

The smart-building network can overlap with residents' smart-home networks, which operate on Wi-Fi and cellular technology. Embedding multiple chips in a single device (such as a door lock) can enable the resident to control the device under certain circumstances and the property owner to control it under other circumstances.

WIRELESS TECHNOLOGY WILL ... DO WHAT?

Everyone agrees that big things are happening in the wireless world.

The main event for 2018 will be the beginning of the commercial rollout of 5G wireless. But will 5G be an evolution, a revolution, or simply a hype? Many observers are adopting a wait-and-see attitude.

"In 2018, we are going to get a look at how these technologies function in real neighborhoods, and we'll find out the real-life benefits and shortcomings of the technologies," says Dawson, who consults mainly for small, rural providers. In the multifamily world, Holtz says, "Owners will have to consider which camp they want to be in" – wired or wireless broadband – "or if they want to be in both."

For Holtz, a key to 5G wireless's success in competing with wired broadband will be its performance in terms of latency and jitter. Users who require real-time interaction for gaming, cloud services or video conferencing "don't expect to be waiting for 5 seconds to get an answer," Holtz points out. Another issue is how much spectrum the FCC will allot to wireless uses. 5G chipsets are capable of high speeds, but if too many users crowd into too little spectrum, they will not get the speeds they hoped for.

Fink, whose company provides wireless broadband equipment, is bullish on wireless capabilities. He believes fixed wireless can already support unlimited video streaming; in 2018, he says, "some forward-looking [fixed wireless] ISPs will seize on the idea of true unlimited data plans as a consumer differentiator." Because an uncapped data plan is a prerequisite for cord cutting, this would make fixed wireless a viable competitor to wired broadband, not simply a last resort.

The convergence of new spectrum, new equipment and new CAF II funding, according to Fink, means that "all the right market conditions are finally in place for the Tier 3, Tier 2 and Tier 1 telcos to jump on board for true wireless delivery." These deployments, he says, reflect several different business cases.

Verizon is using millimeter-wave spectrum in urban and edge-urban areas with a view to competing for AT&T's wired broadband customers. AT&T, at least this year, is using lower spectrum and CAF dollars to provide minimal broadband in rural markets, and Tier 3 telcos will likely follow the same strategy. Tier 2 operators are looking to replace their weak DSL plant with wireless to compete with cable in medium-density suburban areas where they can't make good business cases for FTTH.

Fink agrees, however, that the spectrum issue still clouds the wireless future: "Though the CBRS deployments scheduled for mid-2018 are unquestionably a good start, CBRS spectrum will not completely solve our broadband problems. Let's be honest, the 10 MHz and 20 MHz maximum channel aggregation in CBRS will at best be able to offer 10 and 25 Mbps services, and most people expect this band to be used for additional 5G cellular capacity in urban areas." Because millimeter-wave spectrum isn't appropriate for last-mile access in rural and suburban areas, the most plausible new spectrum band, Fink says, is the satellite C-band, currently used to downlink video to cable headends. As satellite downlinks are phased out, Fink says, "I predict we'll see the fixed wireless broadband, 5G mobile and satellite industry working together to share the satellite C-band 3.7–4.2 GHz to introduce shared spectrum for fixed, mobile and satellite providers in the areas we need it most." ❖

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