

Fiber Will (Mostly) Dominate Broadband in 2022

BROADBAND COMMUNITIES asked industry colleagues what will drive broadband in 2022. Hint: Fiber will play a starring role for most industry players.

By Sean Buckley / *Broadband Communities*

As the world deals with the seemingly never-ending COVID-19 pandemic, broadband providers contend with component and labor shortages, inflation and logistical challenges. At the same time, consumer and business appetite for broadband increases as more people work remotely and conduct education online.

“The emphasis on and investments in advanced broadband access networks around the world over the last two years show no signs of abating in 2022,” said Jeff Heynen, vice president of broadband and home networks for the telecom market research firm Dell’Oro Group, in a new report. “Despite the headwinds of component and labor shortages, inflation, and logistics snafus, broadband network buildouts and upgrades, coupled with net subscriber additions, are projected to result in [more than] \$15.5 billion in equipment spending in 2021.”



Jeff Heynen

THE FIBER FACTOR

All-fiber network deployments will be a strong trend in 2022. According to RVA LLC, fiber broadband now passes more than 60.5 million homes in the U.S. alone – representing 12 percent growth in 2021. The

research firm attributes fiber deployments to higher acceptance than any other broadband technology – cable, satellite or wireless – in terms of capacity, reliability, latency and customer satisfaction.

An RVA survey revealed fiber-based broadband has other positive attributes: an average net promoter score of 20 percent; high reliability based on reported outages, and the highest speeds and lowest latency based on random speed tests. Mike Render, president of RVA, said the “benefits have created competition among more diverse sizes and types of service providers that are now racing to reach more subscribers with fiber.”

The acceleration of copper to fiber migrations is also driving fiber-to-the-home (FTTH) growth. Heynen expects this trend to accelerate in 2022 because of new optical line terminal (OLT) investments supporting 1 Gbps and up to 10 Gbps symmetrical speeds. “Operators throughout North America, EMEA, the Caribbean and Latin America switched more of their capex toward expanding their fiber networks,” he said.

TIER-1 TELCOS SET AGGRESSIVE FIBER TARGETS

The top priority for the three largest Tier-1 telcos is to deepen fiber penetration. AT&T added more than 1 million fiber subscribers for all of 2021, ending the year with nearly 6 million fiber subscribers. The telco expects its

In general, Internet ISPs register some of the lowest satisfaction scores of any industry. Fiber clearly has the highest satisfaction score among Internet delivery types.

Satisfaction Is Important – And Fiber Wins

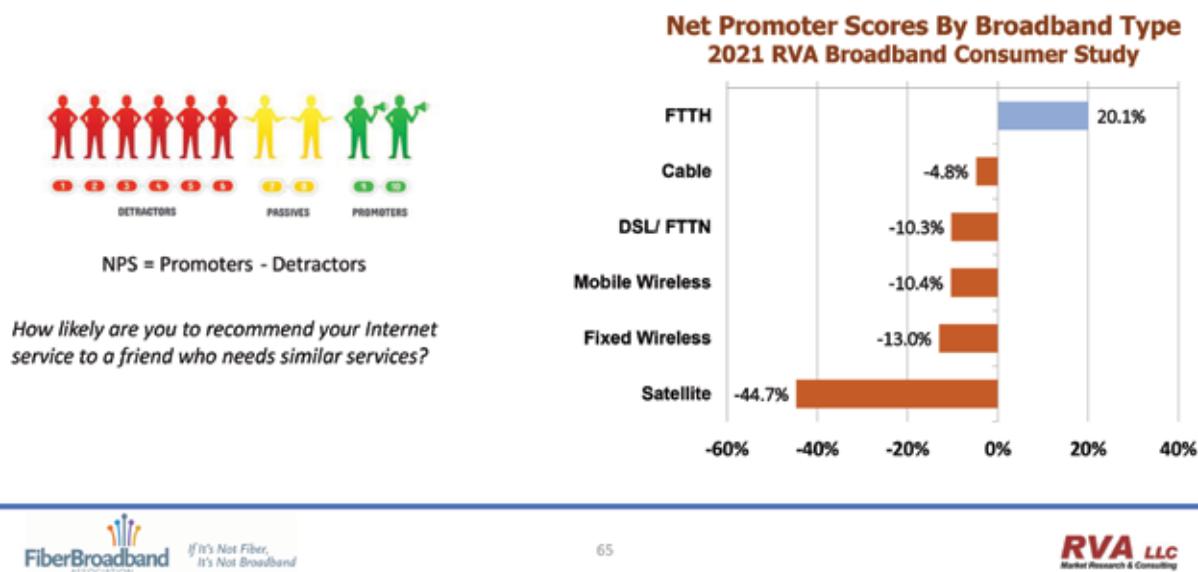


Figure 1



John Stankey

fiber subscriber growth rate to accelerate in 2022. “You will see us start to sell more end users each quarter as we move forward,” said John Stankey,

AT&T’s CEO, during the telco’s fourth-quarter 2021 earnings call. “You’re going to see our subscriber count start to ramp as that [fiber] footprint gets larger.”

AT&T passed more than 2.6 million additional customer locations for the year, missing its original 3 million target because of supply-chain constraints for fiber assemblies.

“We feel like we’re through the supply-related issues,” Stankey said. “I feel very, very comfortable that we’re going to hit those 30 million directions that we’ve given you by the end of [20]25.”

The telco added 271,000 new AT&T Fiber customers in the fourth

quarter. Broadband revenues were up 5.4 percent with ARPU growth of 4.2 percent. Overall, broadband revenues hit \$2.32 billion, up from \$2.2 billion year over year.

But AT&T is not resting on its laurels. It recently began rolling out 2 and 5 Gbps tiers to nearly 5.2 million customer locations in parts of more than 70 metro areas, such as L.A., Atlanta and Dallas. The two tiers offer consumer and business packages at competitive prices: AT&T Fiber (2 gig): \$110 per month; AT&T Business Fiber (2 gig): \$225 per month; AT&T Fiber (5 gig): \$180 per month; and AT&T Business Fiber (5 gig): \$395 per month.

Fellow telco Verizon saw Fios Internet grow during the fourth quarter, adding 55,000 subscribers. For the full year 2021, Verizon reported adding 360,000 Fios Internet customers – the best annual performance since 2014. Total Fios revenues were \$3.2 billion in fourth-quarter 2021, an increase of 5.7 percent year over year.

Matt Ellis, CFO of Verizon, said the company’s Fios pricing structure appeals

to customers. “Even with a slight uptick in voluntary churn, we continue to experience exceptionally low Fios Internet churn as customers trust the reliability of our network and the simplicity of our mix-and-match pricing,” he said. However, the Fios Internet subscriber total for the fourth quarter was lower than the 100,000 research firm MoffettNathanson expected.

Meanwhile, Lumen, which rebranded its FTTH division as Quantum Fiber, had about 2.7 million fiber-enabled locations at the end of the third quarter. For Lumen, 2021 was a time of transition. In August, it announced it would divest about 20 states in its legacy incumbent local exchange carrier (ILEC) operations, a large majority of which are rural, to Apollo Funds. The 16 states Lumen is retaining are more urban and suburban.



Matt Ellis

The top priority for the three largest Tier-1 telcos – AT&T, Verizon and Lumen – is to deepen fiber penetration. Tier-2 telcos also are pursuing aggressive fiber strategies.

Lumen plans to pass 12 million locations with fiber. Having already passed 2.5 million sites with thread at the end of the third quarter, it planned to add 1 million locations in 2021. It set a target of 1.5–2 million in 2022 and beyond.



Maxine Moreau

Maxine Moreau, president of mass markets at Lumen, told investors during the 5th Annual Virtual Wells Fargo TMT Summit that “the Apollo deal allows us to streamline

our portfolio and narrow our focus to just more targeted 16 state footprints.”

“Seventy percent of that remaining footprint is in urban-suburban clusters,” she continued. “These clusters have the density so going deeper with fiber makes sense. We’re initially targeting the 12 million ... and we’re going to move to a market-level approach.”

Bruce Leichtman, president and principal analyst of Leichtman Research Group (LRG), says telcos still face challenges in growing broadband overall, particularly as the number of copper subscribers dwindles.

He points out that Lumen has declined four percent and Frontier is down 2.5 percent. Fiber builds have become a function of acquisition and customer retention. “They are putting fiber into the network, but in many cases, fiber is a retention device for existing DSL customers,” he says.

Verizon is bucking the trend. It grew 3.9 percent. “Verizon is the most successful, and [it] rolled out fiber in 90 percent of [its] market,” Leichtman says.

AT&T bled DSL and non-fiber broadband subscribers. The company lost 20,000 overall broadband connections in the fourth quarter, widening from 2,000 in the same period in the previous year. It shed 272,000 non-fiber connections (U-verse) and 315,000 DSL connections in the fourth quarter.

“AT&T is improving because [it is] not losing as many copper subscribers as [it] used to,” Leichtman says, adding that “fiber makes telcos a more viable competitor to cable despite these issues.”

TIER-2S, COMPETITORS PUSH FIBER

Service providers in the Tier-2 telco and competitor camp are no less aggressive with their FTTH buildout strategies. Frontier led the pack, adding 185,000 new fiber locations during the third quarter, passing 450,000 homes with fiber. It added 29,000 new FTTH subscribers in the third quarter.

During the first wave of its fiber build, Frontier will pass more than 600,000 locations to bring its total fiber footprint to about 4 million homes. During the second wave of its fiber build, which will start in 2022 and end in 2025, Frontier will add another 6 million fiber-enabled locations.

The telco is planning to launch a 2 Gbps product in 2022. Nick Jeffery, CEO of Frontier, said that because Frontier wants to be seen as an aggressive fiber provider, establishing a 2 Gbps service will attract more significant bandwidth customers. He also thinks the 2 Gbps offering will push the company’s average revenue per user higher.

Scott Beasley, CFO of Frontier, told investors during the BofA Securities

2021 Leveraged Finance Conference that fiber broadband additions come from three sources: existing customers migrating from DSL, other competitors, and greenfield builds. “With the continued acceleration of our build, we expect the continued acceleration of our fiber net adds,” he said. “We went from 12,000 to almost 30,000 subscribers in the third quarter.”

Likewise, fellow Tier-2 telco Consolidated Communications progressed with FTTH, updating 97,000 fiber locations with 1 Gbps-capable service and completing 219,000 upgrades to get to 300,000 subscribers.

“These network upgrades depict the first phase of our transformation,” said Bob Udell, president and CEO of Consolidated, during the third-quarter earnings call. “Our five-year plan is to upgrade 1.6 million, or [more than] 70 percent, of our total locations passed by the end of 2025.”

Northern New England is a big focus of Consolidated’s fiber upgrade plan. It plans to pass 1 million sites there by 2025. Udell said New England’s fiber density makes it easier to rein in costs. “We have a tremendous cost advantage, especially in New England, where approximately 80 percent of our fiber is near our existing fiber backbone facilities,” he said. “We are also leveraging our diverse footprint of suburban and rural markets, with additional fiber-to-the-premises builds in Texas, California, Minnesota, Illinois and Pennsylvania.”

Subscribers are finding utility with Consolidated’s 1 Gbps product – the company increased fiber subscribers by more than 20 percent. To appeal to more customers, Consolidated unveiled its Fidium Fiber brand. Initially rolling out in select markets in northern New England, Fidium offers symmetrical, gigabit internet with no data caps for \$70 a month.



Bob Udell

“We’re accelerating our fiber builds, extending fiber to more than 70 percent of our addressable locations, and I think we’ll exceed that. We’re leveraging that fiber to grow broadband revenue across three customer groups, giving us three chances to win, and we’re redefining the broadband

experience with new, friendly ways to serve our customers under a new brand,” Udell said.

Meanwhile, Shentel, Lumos Networks and Windstream progress with FTTH.

Shentel’s Glo Fiber division works with communities throughout Virginia

and Maryland. In 2021, Shentel secured 17 new franchise agreements, passing 160,000 homes for a total of 304,000 homes passed with franchise approvals.

Chris French, president and CEO of Shentel, said communities welcome Glo Fiber as a competitor. “Our

10G XGS-PON SHOWS POTENTIAL, BUT CHALLENGES REMAIN

As service providers look to push FTTH speeds beyond 1 Gbps for businesses and consumers, use of XGS-PON 10 Gbps symmetrical capable OLT ports (including combo cards and SFP modules) is on the rise. A combo PON allows a service provider to decide when to turn on a multi-gig solution.

Research firms Dell’Oro and Broadbandtrends indicate service providers are migrating to XGS-PON. Dell’Oro estimates about 50 percent of the OLT ports providers are deploying are for XGS-PON 10 Gbps line rates, and the rest are for traditional 1 Gbps GPON. Jeff Heynen, vice president of broadband and home networks at Dell’Oro, says, “Operators that have deployed combo cards plan to begin migrating to full XGS-PON within 12–18 months, depending on take rates and competitive response.”

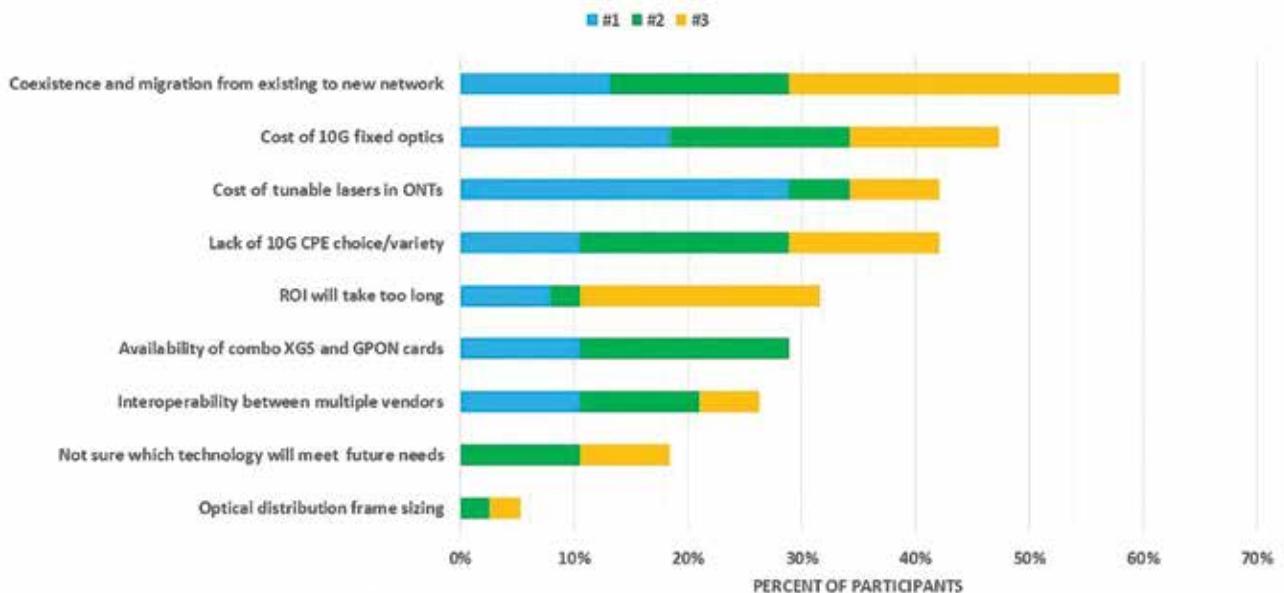
In its Global Service Provider 10G PON Deployment Strategies survey analyzing perspectives

from 48 incumbent and competitive operators, Broadbandtrends discovered that that interest in deploying 10G XGS-PON is rising. Teresa Mastrangelo, founder of and principal analyst at Broadbandtrends, said the technology provides “fast, reliable and sustainable broadband connectivity.” The survey also revealed the declining interest in NG-PON2 as the 10G PON technology, with a large majority focused on XGS-PON.

Heynen cautions some challenges to remain in transitioning to 10G PON. “One of the hurdles to full XGS-PON deployments right now are limits on the number of ONTs available, due to supply-chain constraints, as well as the tremendous demand from operators for those units,” he says.

Mastrangelo agreed that the “migration of the existing network to the new network as well as costs continues to be top concerns of operators.”

Key Challenges/Concerns for 10G PON Deployment



Source: broadbandtrends

INDUSTRY ANALYSIS

government relations team continues to get a warm embrace by municipalities looking to offer a choice of broadband providers for their local residences and businesses,” French said. “We have an attractive funnel of additional markets that met our investment criteria, which will lead to franchise agreements in the coming quarters.”

With 17,000 new passings added in the third quarter, Shentel now passes 296,000 locations. The provider has settled on an aggressive broadband rollout that includes cable and hybrid fiber coaxial (HFC) cable, with a target of 730,000 broadband passings by 2026.

Shentel upgraded its Glo Fiber buildout projection target from 300,000 to 450,000 available addresses by 2026. “Over the next five years,

we plan to invest more than \$500 million building fiber to the home and connecting customers, including unserved homes,” French said.

Neighboring telco Lumos is also working closely with the communities where it has a presence, such as Botetourt County in Virginia. Lumos received funding for universal broadband coverage for homes and businesses from the Virginia Telecommunications Initiative (VATI) grant, which will allow the company to serve approximately 1,500 addresses.

Earlier, Lumos announced that more than 12,000 homes and businesses across five communities will get FTTH by the end of 2022. “Our ambition is to bring gig-speed fiber internet to as many communities as

possible across Virginia and beyond,” Lumos CEO Diego Anderson said.

Like Lumos and Shentel, Windstream partners with states and communities to expand FTTH into rural areas, such as Laurel County, Kentucky. Windstream announced it would provide fiber-based broadband to more than 8,980 residents there. The project will connect 6,640 customers in London and about 2,340 customers in the East Bernstadt area.

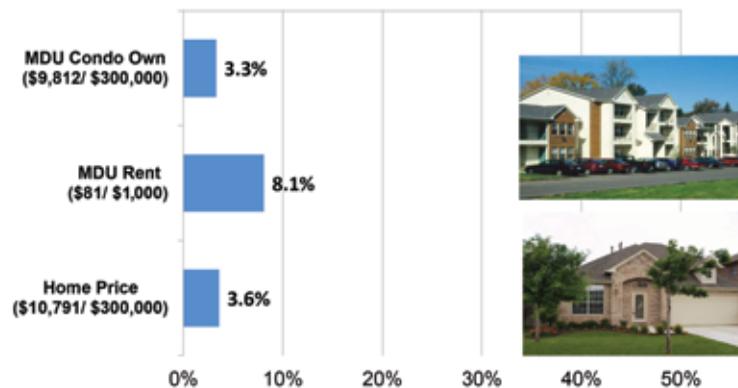
Windstream Kinetic Internet added 55,000 broadband subscribers in 2021 and delivered its 15th consecutive quarter of consumer broadband growth. Kinetic also extended its gigabit services by 523,000 locations and now reaches 1.1 million sites, or 20 percent, of its footprint.

FIBER ENHANCES REAL ESTATE VALUES

Residential and commercial real estate values can be enhanced by installing fiber into a community. According to recent RVA LLC research, fiber-based broadband continues to add value to real estate transactions.

Fiber-based broadband can increase the value of multiple-dwelling-unit condominiums by 3.4 percent, apartment prices by 8.1 percent, and single-family homes by 3.6 percent. The presence of fiber can also drive up the value of commercial real-estate prices. RVA estimates that office rental space that includes fiber leases for 7.6 percent more.

Fiber Adds To Home Value Discount Needed To Consider Similar Non-Fiber Broadband Home 2021 RVA Broadband Consumer Study



“When we announced our aggressive \$2 billion investment in fiber deployment, we knew our customers both wanted and needed this technology,” said Jeff Small, president of Kinetic. “Our network investments, supported by our best-of-breed customer service, are driving strong customer growth.”

CABLE RETURNS TO PRE-PANDEMIC GROWTH

After several quarters of unprecedented growth, it's clear the cable industry is returning to a slower growth rate. The two largest U.S. cable operators – Charter and Comcast – added more broadband subscribers during the fourth quarter, but it was far from the peaks during the COVID-19 pandemic.

Charter added about 190,000 broadband subscribers in the fourth quarter of 2021, falling below an expected 224,000 gain. For the year, Charter said it added about 2.2 million broadband customers in 2021, nearly double the 1.4 million it added in 2019.

During the UBS Global TMT Conference in December, Tom Rutledge, CEO of Charter, told investors that growth is getting back to pre-pandemic levels, adding that

the past two years have been disruptive for Charter and the industry. “We’re getting back on the plan in ’22 in terms of growing the business and growing the kinds of product sets we want to deploy,” he said. “The biggest growth opportunity, the biggest growth driver going forward starting in ’22, is mobile.”

Comcast added 212,000 broadband customers in the fourth quarter and benefitted from what it said was the highest level of customer retention. Brian



Tom Rutledge



Brian Roberts

Nearly 90 percent of all U.S. households are now able to get broadband, a sign that markets are well penetrated.

Roberts, CEO of Comcast, told investors during its fourth-quarter earnings call that though broadband adds were lower than in earlier periods, the cable MSO kept churn in check.

“Our net adds this quarter reflect the continuation of lower overall marketplace activity, particularly move activity compared [with] historical trends,” he said. “While this resulted in lower connect volumes, it also contributed to high levels of customer retention with broadband churn improving to the lowest rate for any fourth quarter on record.”

However, Roberts added, the company has plenty of opportunities to acquire more broadband subscribers. “We think we have a long runway for growth,” he said. “We still believe with about 50 percent penetration in our footprint, it leaves us with the long part of the field to keep going.”

As the large, Tier-1 cable operators experienced the return to normal subscriber addition patterns, regional operators went through transitions of their own. Regional operators Mediacom, Cable One and WOW! saw varying results during the third quarter.

Mediacom ended the third quarter with 1.46 million broadband customers but lost 2,000 subscribers in the third quarter. Cable One, which enhanced its footprint by acquiring Hargray, Cable Net America and ValueNet Fiber, reported that data revenues rose to \$220 million. About 110,000 residential data primary service units (PSUs) were acquired in the Hargray deal.

WOW!, which continues to emphasize its “broadband-first” strategy, ended the third quarter with 509,500 internet customers, up from 496,600 in the same quarter of last year.

At the RBC Global Technology, Internet, Media, and Telecom

Conference, Teresa Elder, CEO of WOW!, said that 2020 was an anomaly. “As people moved to work and school from home, it created a high point in terms of net adds across the industry,” she said. “We still think that 2019 was a better benchmark for 2021, and we saw some softness in the third quarter.”

BROADBAND MATURATION POINT

Though broadband additions rose sharply in 2020 – particularly in the cable industry – this trend is leveling off. During the third quarter of 2021, the broadband industry added only about 630,000 subscribers. According to LRG, this number was far lower than the gain of about 1.52 million subscribers in the third quarter of 2020. The research firm said the results were in line with the third quarter 2019 and third quarter 2018, when the industry added 615,000 and 600,000 subscribers, respectively.

Nearly 90 percent of all households are now able to get broadband, a sign that markets are well penetrated. “When you look at any service that’s in 87 percent of all households, that’s the sign of a mature business,” says Bruce Leichtman. “With that level of maturity comes the benefits but also the challenges for future growth.”

He adds 2020 was an anomaly, and now Wall Street is penalizing these large operators. “People forgot that 2020 was an aberration that pulled forward a lot of customers into many things, with broadband being one of them,” Leichtman says. “Oddly, some of these companies are being punished by Wall Street for not growing at the aberrational level of 2020.”

Heynen agreed that cable’s low-speed DSL acquisition is over. “The Q3 and Q4 cable net add numbers will

show that that the addressable market has been just about fully tapped,” he says. “That situation, combined with increased fiber and fixed wireless competition, is going to make it challenging for cable operators to continue to add new subscribers at the rates they have become accustomed to.”

CABLE UNFAZED BY FIBER THREAT

The largest telcos have been aggressively rolling out FTTH services in their territories, but the most significant cable MSOs – Charter and Comcast – remain unfazed.

Cable operators are moving forward with expanding DOCSIS 3.1 and testing DOCSIS 4.0 to further the lives of their cable plants. The cable industry is also pursuing an initiative to offer

10 Gbps symmetrical services. Charter has allocated about \$1 billion this year to fund various rural construction projects, including unserved areas that will benefit from the operator’s awards during the Rural Digital Opportunity Fund (RDOF) auction.

The company also plans to use the \$7.1 billion to \$7.3 billion tagged for cable capex in 2022 to support high-split upgrades on existing DOCSIS 3.1 networks to increase upstream capacity. Rutledge said Charter is developing a roadmap for DOCSIS 4.0, a new technology that will enable its existing HFC plant to support multi-gig symmetrical speeds. The MSO recently conducted DOCSIS 4.0 lab trials that delivered 8/6 Gbps speeds.

Rutledge said Charter has plenty of running room. “There’s plenty of

competition that’s continuing to grow, but even [in cases in which] someone builds a similar infrastructure to us, we’re still growing market share and our business everywhere we operate,” Rutledge said.

Michael Cavanagh, CFO of Comcast, said that he looks to “a constantly evolving playbook” to respond to emerging fiber broadband providers. “We’re growing penetration where we compete against both fiber and non-fiber,” he said.

Regional cable operator WOW! asserts that customers want options. “Our HFC network, which has fiber deep into the network, can meet customer needs today and in the future with DOCSIS 4.0,” Elder said. “We can offer 1 Gbps speeds and are testing 10 Gbps in the lab.”

Heynen says that though cable has had the upper hand with speed over copper-based DSL, fiber competition drives some cable operators to put in more fiber in areas with greater competition. “We have already seen a decent number of Tier-2 and Tier-3 operators in North America opt for the complete replacement of their HFC networks with full fiber,” he said. “Though we certainly don’t expect to see a wholesale cutover among any Tier-1 cable operators, we believe this year will see an increase in fiber overbuilding in some of the more competitive markets to maintain the perception of parity with fiber competitors.”

REGIONAL CABLE FIBERIZES

Tier-1 cable companies may be more cautious about changing their widely deployed HFC assets to all fiber, but several regional operators are moving on the fiber opportunity. For instance, ADTRAN, which has relationships with regional and Tier-1 cable operators, is seeing more regional cable operators migrate to FTTH.

“Except for the large cable MSOs that are sweating their HFC assets, cable MSOs have made a choice when they go into a greenfield market or are protecting their existing customer base: They are deciding to put in fiber,”

BROADBAND, SMART TECHNOLOGY ADD MDU VALUE, BUT SPEEDS LAG

As the COVID-19 crisis took hold in 2020, multifamily property owners immediately saw a rise in teleworking, online learning and emerging innovative home technology that required faster broadband. In its multi-dwelling unit survey, *The Way of the Future for Multifamily Housing: High-speed Internet and Smart Technology*, XFINITY found that 92 percent of property owners and managers “believe” they are meeting their tenants’ internet requirements.

Although more than eight in 10 respondents agree that internet speeds met resident expectations, only three in 10 said their properties have an internet speed of 500 Mbps or more. Only 86 percent of respondents said the internet speeds available at their property or properties met resident expectations.

Survey respondents reported the average internet speed available at their properties:

- Less than 50 Mbps: 4 percent
- 50–249 Mbps: 17 percent
- 250–499 Mbps: 44 percent
- 500–999 Mbps: 25 percent
- 1 Gbps or more: 6 percent

Residents expect always-on internet connections, and XFINITY says internet quality of experience can “break the residential experience.” Resident complaints about Wi-Fi performance have become commonplace.

Broadband is also a foundation for innovative home technology. More than nine in 10 survey participants (93 percent) say adoption is essential to keeping current residents satisfied and attracting new residents, up from four in five (78 percent) in 2019.

says Kurt Raaflaub, head of strategic solutions marketing for ADTRAN. “They looked at the cost per home and realized fiber networks do not cost a lot to maintain like coax.”

After completing the acquisition of WOW!’s Cleveland and Columbus, Ohio, cable assets, Atlantic Broadband announced plans to invest \$82 million to extend its reach to 70,000 homes and businesses via FTTH in New Hampshire and West Virginia. The first customer activations are expected in early 2022.

Cable One, now known as Sparklight, is also making moves into FTTH. Following its purchase of Hargray Communications in 2020, the cable MSO created Clearwave Fiber. Executive Chairman Michael Gottdenker and CEO David Armistead, both from Hargray, will lead Clearwave. “This strategic investment will help accelerate the

Though cable has had the upper hand with speed over copper-based DSL, fiber competition drives some cable operators to put in more fiber in areas with greater competition.

deployment of fiber-based broadband services to a range of markets, including underserved areas of the country,” said Gottdenker.

WOW! will leverage its HFC network to address current customer needs, but Elder indicated it would conduct targeted FTTH builds. “We already have some FTTH in some of our planned communities,” Elder said. “When we think about greenfield, we’ll look at FTTH, but the good news is we don’t need to overbuild our network to be competitive.” ❖

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BROADBAND & CONSULTING SERVICES

Our Team Is Expanding To Meet Your Broadband Needs

FINLEY

BROADBAND

Finley recently announced the addition of Tim Arbeiter, former Director of Broadband Development of the State of Missouri, as their new leader of the Broadband Consulting Group within the company’s already dynamic team of communications engineers and experts.

Finley can quickly engage with your leadership to understand your broadband needs, find solutions and identify funding or partners. We are with you from start to finish becoming a trusted advisor guiding communities, counties, regions, and providers seeking to invest new resources to connect more Americans to superior high-speed internet. Learn more by visiting our website. >>>

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