

# 2015: A Good Year For Fiber to the Home

Industry experts forecast an uptick in FTTH deployments for the coming year – and much more.

By Masha Zager / *Broadband Communities*

**W**hat's ahead for fiber to the home in 2015? **BROADBAND COMMUNITIES** asked seven experts to share their thoughts about what the coming year has in store. Despite their differing vantage points and varied expertise, there was a high degree of consensus in their views.

## 1 Fiber-to-the home deployments will increase in 2015.

“FTTH deployments will be strong in 2015 – second only to 2008 in terms of added FTTH homes marketed in the United States,” says Michael Render, president of market research firm RVA LLC. Render has tracked the growth of fiber to the home in North America since 2003 and keeps tabs on all types of deployers.

He points out, for historical context, that the first FTTH deployment peak occurred in 2008. (Nearly 4.4 million new FTTH homes were marketed in the year ending September 2008, according to Render's surveys.) With the onset of the recession, deployments began to decline and did not accelerate again until 2012. As 2015 begins, Render says, activity is increasing across the board. Large and small telcos, competitive providers such as Google (and several new entrants – stay tuned!), cable MSOs, municipalities and rural electric co-ops are all ramping up their fiber plans.



Render says competitive pressures are fueling this activity. In some cities, providers are vying to become the first to offer true FTTH. Consumers are clamoring for FTTH. “Gigabit” has become a marketing buzzword. In addition, new home construction is gathering steam, and many new developments will be primarily fiber fed.

What's driving that competitive pressure? Render's surveys confirm that consumers are willing to pay a premium for fiber-connected housing both because FTTH allows them to work from home and because “the in-home lifestyle is truly being transformed into an online-dominated experience.”

## 2 Cable companies and other new types of companies will deploy FTTH.

Cable companies are conducting trials of 10G-EPON, DOCSIS 3.1, DPoE, RFoG and other technologies to support higher bandwidths, trying to determine the “financial sweet spot” for each of them.

Several experts predict that FTTH deployments – dominated by telcos until recently – will become more diverse in the coming year. According to consultant Richard Holtz, CEO of InfiniSys Electronic Architects and a pioneer of fiber in multiple-dwelling-unit (MDU) properties, “The cable companies will follow Verizon’s lead and become true deployers of fiber to the unit – and not just in MDUs but across the board.”

Ric Johnsen, senior vice president of broadband for CommScope, which specializes in next-generation solutions for cable companies, confirms that major cable MSOs, which hope to stay ahead in the “arms race” that Google set off, have plans for FTTH. Ultimately, in Johnsen’s view, “[cable] operators will need to continue to push fiber deeper into their networks – all the way to the home – and they are investing in the infrastructure needed to accomplish this. ... These fiber projects will be seen initially in MDU deployments, then quickly turn to greenfield expansions.”

Somewhat more surprisingly, smaller cable companies are also developing fiber plans. Many small cable operators failed to keep pace with the larger operators in terms of technology, Johnsen says, but now they have a problem they must resolve – noise conflicts from LTE networks on shared frequencies. In some ways, FTTH is an easier choice for them than it is for the Tier-1 cable companies because their investment in their existing assets is

lower. Johnsen says, “If they’re going to upgrade one way or another, they shouldn’t go through the whole progression; they should just jump to where we need to be tomorrow.”

David Russell, solutions marketing director for Calix, which supplies FTTH equipment primarily to telephone companies and municipalities, also expects new types of players to enter the game. He points out that the FCC’s rural broadband experiment, whose first round is in progress, allows entities such as municipalities and electric co-ops to apply for Universal Service Fund support. Many winners of the FCC’s first reverse auction appear to be wireless ISPs, though whether they will use those awards to build fiber to the home is not clear as of this writing.

**3 However, the boom won’t start until late in 2015 – and it may pave the way for an even bigger boom in 2016.**

One reason for the delay is that there isn’t enough optical fiber to meet current demand. The lead time for fiber is now several months, as it was in 2011 when many broadband stimulus projects started building out at the same time. “The huge demand has overwhelmed cable capacity,” says Johnsen.

Another, perhaps more significant, reason for the delay is that the cable MSOs are still testing and evaluating several new high-bandwidth solutions. In some locations, cable companies are evaluating DOCSIS 3.1, the latest version of their classic broadband

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## Fiber to the home will become a differentiator for multifamily housing.

technology, over HFC networks. In more competitive locations, they have several all-fiber options, among them DOCSIS 3.1 with Radio Frequency over Glass (RFoG) and 10G-EPON with DOCSIS Provisioning over EPON (DPoE). Johnsen believes 2015 will be the biggest year for RFoG, which has been a niche technology until now. In 2015, he predicts, RFoG will become “the bridge it was intended to be,” allowing cable companies to build out fiber “while they get comfortable with PON.”

Because DOCSIS 3.1, 10G-EPON and DPoE are all new technologies, at least in terms of deployment in the field, and because cable companies have relatively little experience laying fiber in residential neighborhoods and MDUs, they are running pilot projects to determine “the financial sweet spot for return on investment.” Depending on the success of these projects, Johnsen expects to see many cable companies shift from HFC to PON in 2016 and beyond.

Cheri Beranek, president and CEO of outside-plant manufacturer Clearfield, agrees that “pilots and trials that are currently being conducted [by both telcos and cablecos] will first need to go through the corporate evaluation process, budgets developed and then released later in 2015,” and she confirms that fiber delays are impacting some projects.

In addition, she mentions a third reason for delay: uncertainty about the regulatory regime under which the FCC will govern broadband, especially for enforcement of net neutrality. “Lack of certainty is a bigger issue than what the final decision will be,” she says. “[The regulatory decision] needs to

happen so business plans can be put in place.”

### **4 Local competitive conditions will drive FTTH deployments and other network upgrades.**

In other words, cities with fiber will get more fiber.

Beranek says, “Incumbent providers are looking at the potential for churn. Tier 1 and 2 telcos and cable TV companies won’t go systemwide [with FTTH] ... but their investment in pockets will be broadened for competitive purposes.”

Holtz notes, “AT&T’s hand is going to be forced. ... AT&T will finally get serious about rolling out higher speeds across the entire portfolio [not just GigaPower cities]. I won’t predict the technology, but they’ll be more market protective. What’s driving it is the cable companies.”

### **5 FTTH will become a differentiator in MDUs.**

Because new construction today is heavily skewed toward MDUs, multifamily developers have an outsized impact on the growth of fiber to the home. Bryan Rader, CEO of Bandwidth Consulting and an adviser to many private cable operators, predicts the emergence of FTTH as a differentiator for MDUs. He says, “I believe that fiber to the home will continue to become a key infrastructure solution for many of the new MDU developments that target millennial renters. In particular, we already see developers planning to run fiber to each unit (depending on the design of the property) in an effort to deliver top-quality Internet services to future residents. Developers and property owners today, especially those that target college

students, see the need for unlimited bandwidth to their customers as a key amenity of their communities. FTTH will guarantee them the ability to do this and remain competitive in their markets.”

Owners of existing MDU properties may have to play catch-up. T.J. Stewart, a principal of MDU Netch who works with developers, owners and management companies to deploy FTTH in MDUs, predicts that residents will continue to adopt more bandwidth-intensive services and that their technology vocabularies will continue to increase – in other words, they’ll be looking for FTTH more explicitly than in the past. He says, “Legacy coaxial and twisted-pair outside-plant networks will continue to plague older properties trying to compete with new product in their submarkets. Properties that have fiber plants capitalized in their construction costs are at a competitive advantage over older inventory.”

### **6 Gigabit offerings will become more common.**

Despite the lack of must-have gigabit applications, a gigabit offering is a signal both to customers and to potential competitors that a network is ready for whatever comes along. Russell predicts, “There will be continued acceleration in the adoption of gigabit by network operators across the spectrum, from Tier 1s to new providers.” And Johnsen says of his cable company customers, “Gigabit is the magical number for them.”

### **7 Ramping up FTTH will force the development of faster, simpler deployment methods.**

Says Beranek, “The amount of labor and high level of skill required to achieve new fiber deployment [are] increasingly scarce, and it is possible that there will not be enough to go around.” She predicts the increased adoption of plug-and-play technologies to reduce the amount of splicing and connectorization

needed. In addition to plug-and-play, Beranek says, solutions to reduce up-front engineering time will be required. For example, using microduct and pushable fiber mitigates the need to pre-engineer fiber drops to the exact length and/or to establish space for slack storage. In another example, the use of small, below-grade cabinets that fit in accessways between roads and sidewalks can reduce both pre-engineering and permitting time.

Johnsen predicts the emergence of faster, simpler methods for deploying fiber inside MDUs. Despite the advances already made in this area, he says, this is a challenge that cable companies have “thrown over fence” to the vendor community.

Another opportunity to speed up deployment is in setting up home networks. Russell predicts that operators will begin to eliminate in-home wiring and use carrier-class Wi-Fi to distribute fiber bandwidth throughout customer premises. Carrier-class Wi-Fi depends on the 802.11ac Wi-Fi standard, which Calix and other vendors are building into residential gateways. But deriving the greatest benefit from 802.11ac technology requires that consumer electronics manufacturers build it into client devices – which is another of Russell’s predictions.

Holtz agrees that, by the third quarter of 2015, “we’ll see the cable companies and maybe the telephone companies get serious about the deployment of 802.11ac access points.” However, he warns, wireless connections cannot replace wired broadband for video streaming in high-density environments.

## 8 Bonus predictions.

Here are a handful of other predictions that didn’t quite fit into any of the above categories but were too interesting to pass over.

*Ric Johnsen, Commscope:* “With the increase in DOCSIS 3.1 trials, movement to a mid-frequency split

of 85 MHz will drive new solutions to the market [such as new RFoG micronodes and drop amplifiers] to give operators more interactive upstream capability.”

“The merger of Comcast and Time Warner Cable, if it goes through, will create a pause as they restructure, then accelerate the market in a new direction.”

*David Russell, Calix:* “There will be an acceleration of content available by subscription as a result of HBO’s new online service.”

*T.J. Stewart, MDU Netech:* “Cellular providers will look to load-shift [to Wi-Fi and ultimately wired broadband] whenever possible. While cell companies tout their 4G or LTE, they seem to be trying to keep bandwidth-intensive activities off them. This has to do with hardware and bandwidth

limitations at the tower, not the device, which most consumers are not aware of.”

*Richard Holtz, InfiniSys Electronic Architects:* “More multifamily owners will go to bulk Wi-Fi as Wi-Fi calling becomes a reality.”

“We’ll see more and more digital voice [VoLTE] as cellular operators convert from the methodologies in use today.”

“There will be more 100-percent digital cable networks – they need that bandwidth.”

“We’ll see a lot more car connections.”

“The Apple Watch will be a game changer.” ♦

*Masha Zager is the editor of BROADBAND COMMUNITIES. She predicts that 2015 is going to be an interesting year. Contact her at masha@bbcmag.com.*

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