Channel Partners™

Five Hot Cable Tech Trends to Watch

Cable providers continue to boost broadband speeds and add the next-generation capabilities that channel partners want to sell. Here are the hottest cable tech developments that are fueling the channel pipeline.

By Craig Leddy

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CRAIG LEDDY, a veteran cable industry writer, speaker and market analyst, is a contributing analyst for Channel Partners, Light Reading & Heavy Reading, which are Informa properties. Leddy founded Interactive TV Works, a media consultancy, to promote understanding of advanced digital services. He is a former editor of Cablevision Magazine, senior analyst for The Myers Group and contributing editor for Multichannel News. He teaches the popular How Cable Works industry courses, including the CTAM Advance Executive Education series. He also founded and hosts the Interactive Launch Competition, a leading case study contest for business students.

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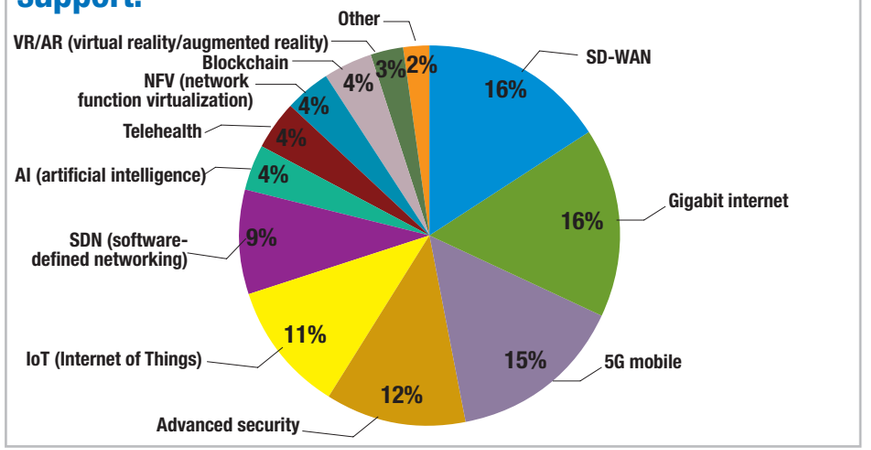
Five Hot Cable Tech Trends to Watch

CABLE COMPANIES CONTINUE TO SQUEEZE MORE CAPACITY and capability out of their broadband infrastructure, offering higher Internet speeds and new products for channel partners to sell to business customers. From Gigabit Internet and SD-WAN to 5G and the Internet of Things, cable is poised to play a role in the hottest tech trends rocking the telecom space. The large cable providers, including Comcast, Charter, Cox and Altice USA, as well as smaller companies such as Mediacom, WOW and CableOne, are exploring opportunities to provide next-generation technologies for business.

Channel partners appear to relish the opportunity too. In Channel Partners' recently released 2018 Cablecos & The Channel State of the Market Survey, partners in the sales and distribution chain showed interest in the technology advancements that are on cable's radar. SD-WAN and Gigabit Internet garnered the highest level of interest among the respondents. 5G mobile, which is viewed as an enabler of business services, also garnered attention—even though true 5G service currently is unavailable in the United States. Advanced security and IoT rounded out the top 5 next-gen technologies targeted for sales.

Please select the next-gen technologies that you could sell to your business customers if you received cableco support.



Source: Channel Partners' Cablecos & The Channel: State of the Market Survey, February 2018

With all of these potential services, cable providers are tasked with figuring out their role and the products that make the most sense for their delivery platforms and customer interests. The good news is that they have a rock-solid foundation on which to build. With a broadband infrastructure based on fiber, coaxial and wireless, cable offers multiple avenues to serve customers and layer on applications and as-a-service offerings. A cable company has the option to offer products itself, act as an aggregator to distribute multiple products or become an enabler of other companies' innovations. In each case, channel partners play a significant role through sales and distribution support.

Adding to their hardware and software infrastructure is the new fuel for running cable services: data. Cable operations are awash in data that can be used in meaningful ways through artificial intelligence (AI) and machine learning (ML). Cable providers are applying those disciplines to support three vital functions: network performance, customer experience and customer insight. In effect, AI is helping cable run more reliably, improve customer care and better serve customers' interests.

Cable providers will continue to focus on the bread-and-butter services

that channel partners sell: connectivity, voice and Ethernet. Yet each of the major providers has a lab, division or top personnel that are exploring future capabilities. These technology initiatives also are supported by cross-industry efforts through CableLabs, the industry's technology consortium, and trade groups such as SCTE (Society of Cable Telecommunications Engineers).

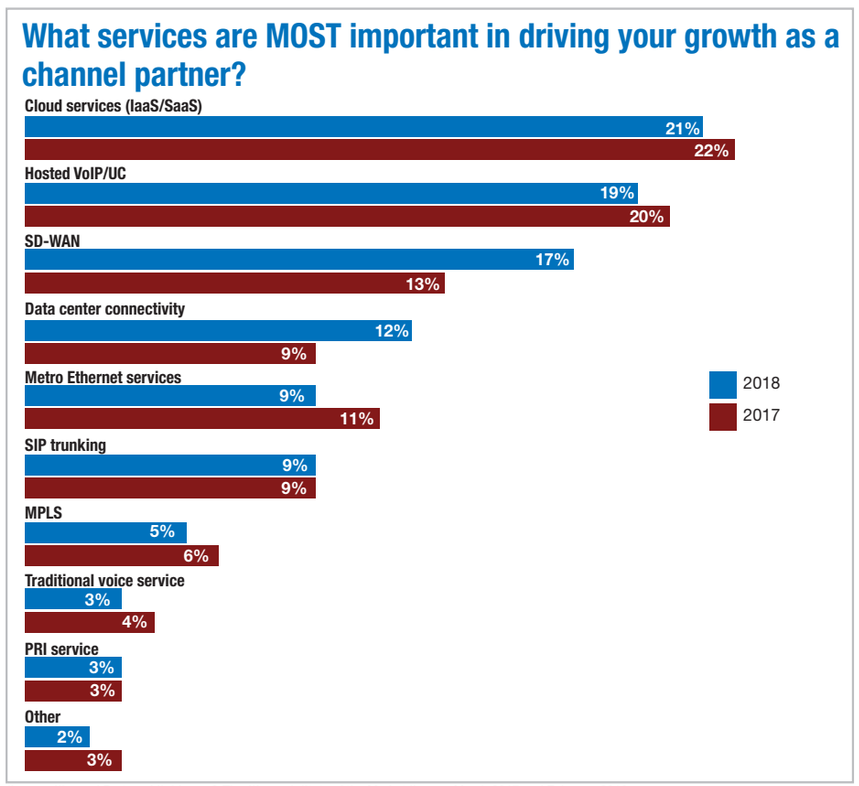
For channel partners, here are five hot cable technology trends to watch.

1. SD-WAN as a Service

It's got buzz, it's got promise, it's got … confusion. SD-WAN is the hottest technology in the telecom space, but there are many solutions and approaches. Plus, it's not that clear how quickly businesses will adopt it.

This puts cable providers in a strategic position to not only provide their own SD-WAN products but also enable other SD-WAN solutions and hybrid strategies that businesses might utilize. For enterprises with multiple business locations and needs, SD-WAN is unlikely to be a one-size-fits-all solution. They may utilize more than one solution and more than one type of connectivity for primary, alternative and redundant requirements. Cable has the flexibility to serve this unique aggregator role.

Channel partners are showing increased interest in offering SD-WAN products. When asked which services are most important to their growth, channel partners put cloud services (IaaS/SaaS) and hosted VoIP/UC at the top of the list, reflecting the importance of cloud connectivity and voice products. Interest in SD-WAN jumped from 13 percent in 2017 to 17 percent in 2018. Interest in data center connectivity, which has become increasingly important to large businesses, also rose.



Source: Channel Partners' Cablecos & The Channel: State of the Market Survey, March 2017 and February 2018

Cable providers are eager to enlist channel partners in their SD-WAN rollouts. Comcast Business is deploying an SD-WAN product as part of its ActiveCore SDN architecture. The SD-WAN solution, based on Versa Networks' Cloud IP Platform, supports a variety of Internet connections, including Comcast's Metro Ethernet and coax utilizing DOCSIS 3.1 (D3.1). Charter Communications' Spectrum Enterprise is trialing a hybrid SD-WAN solution using Nuage Networks technology and leveraging its existing Ethernet footprint—it ranks as the fourth largest U.S. Ethernet provider. Cox Business is in trials with SD-WAN, and Altice Business has the technology on its product roadmap.

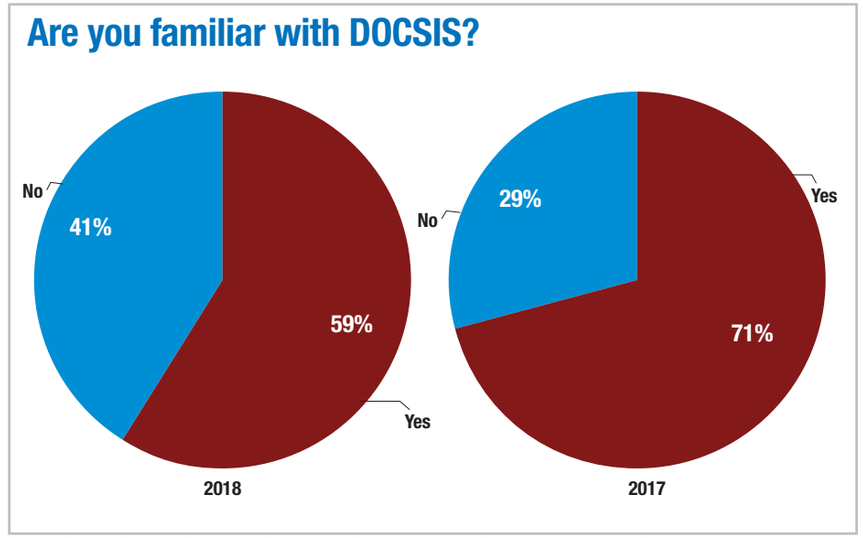
In addition to purchasing connectivity and SD-WAN, businesses likely will get the opportunity to layer on additional apps, or what get called VNFs (virtual network functions). Security and firewalls typically are included with an SD-WAN offering, but there are opportunities to add more advanced security protection, monitoring and management. During the 2017 Light Reading Future of Cable Business Services conference, cable executives listed various VNFs that are under consideration, including unified threat management, virtualized router, cloud-based Wi-Fi controller (Comcast already offers its xFI Wi-Fi management app) and multitenant control point.

2. Gigabit Coax

Cable loves fiber, and enterprise businesses love fiber. Cable providers continue to roll out fiber (more than 400,000 combined route miles, according to industry stats), light up buildings and take fiber deep into their networks to bring Gigabit speeds to customers. Fiber deep (or call it deep fiber if you prefer) will remain an integral strategy for cable residential and business services.

But good old coaxial cable passes far more residences and businesses. If only there was a way to enable Gigabit Internet speeds through all those existing coaxial cable connections.

There is: DOCSIS 3.1. DOCSIS, which stands for data over cable service interface specification, is one of the clunkiest pieces of cable jargon but also one of the most important. Cable modems and Internet transmission equipment run on DOCSIS. With the latest version, DOCSIS 3.1 (sometimes referred to as D3.1), cable providers can enable downstream speeds on the order of 10 Gigabits per second using cable's traditional hybrid fiber coaxial (HFC) delivery architecture.



Source: Channel Partners' Cablecos & The Channel: State of the Market Survey, March 2017 and February 2018

Cable providers large and small are rapidly rolling out D3.1 capability, with the notable exception of Altice USA, which is focusing primarily on an all-fiber upgrade. So far, providers are offering businesses downstream speeds in high Megabit-per-second ranges or up to 1 Gigabit per second.

For a business customer, the only equipment required for the higher speed coax connection is a new 3.1 cable modem, which most likely includes an advanced Wi-Fi router to support ultra-high-speed wireless Internet service as well. Perhaps more important, a business probably already has coaxial cable passing by it, so enabling it for Gigabit Internet usually can be accomplished through a quicker installation process than with fiber. If the business isn't located in a fiber-lit building, fiber installation could involve a lengthy construction buildout.

Despite the advantages of DOCSIS, channel partners' familiarity with it is shockingly low. Respondents to the 2018 State of the Market Survey showed even less familiarity with DOCSIS than the survey takers in 2017. When asked if they were familiar with DOCSIS, more than 40 percent said no. The problem may not be with the channel partners as much as the clunky jargon

itself. Perhaps it's time to give DOCSIS 3.1 a rest and call it what it really is: Gigabit coax.

A related development to watch is full duplex DOCSIS (FDX), which enables symmetrical Gigabit speeds: multi-Gig downstream and upstream. FDX is tricky; it requires extensive modifications in cable's last-mile coaxial plant, including removing amplifiers, pulling fiber closer to the premise and adding echo cancellation technology so that modem communications don't interfere with each other. CableLabs is sorting through the technical challenges, and FDX probably will not be ready for widespread deployment for another two years. Some cable execs see business services as an FDX starting point.

3. 5G Small Cells

5G is viewed as an enabler of IoT, machine-to-machine services and other B2B services. But the next-generation mobile service is clouded by hype, conflicting agendas and questionable deployment timelines by the major mobile carriers. The following table shows the various 5G plans by the major U.S. mobile carriers, two of which, T-Mobile and Sprint, are proposing to merge.

Into this maelstrom, cable providers could migrate to 5G mobile services too, since Comcast now offers Xfinity Mobile and Charter's Spectrum Mobile is soon to follow, both of which rely on an MVNO (mobile virtual network operator) relationship with Verizon and the cable companies' extensive Wi-Fi networks. However, cable's greatest potential may lie in providing an important part of 5G infrastructure: small cells.

U.S. Mobile Carrier 5G Plans

VERIZON	Tested 5G in 11 markets in 2017 and plans 5G residential broadband in three to five markets this year.
AT&T	Plans 5G mobile based on the 3GPP New Radio standard in 12+ markets by late 2018. Deploying Gigabit LTE, called 5G Evolution, and trialing prestandard fixed 5G.
T-MOBILE	Plans to launch a nationwide 5G network starting in 2019, including use of 600MHz spectrum that it acquired in an FCC auction.
SPRINT	Plans to use its 2.5GHz spectrum and MIMO to offer "5G-like capabilities" in six markets in 2018 and launch 5G devices and services in 2019.

Sources: Heavy Reading, company statements, press reports

5G requires a comprehensive network of outdoor and indoor small cell devices to handle its millimeter wave communications, in somewhat the same vein as Wi-Fi's dependence on hot spots and wireless routers. Cable's wired infrastructure is well-suited for attaching and powering small cells to keep 5G traffic flowing. There are a number of business models for cable to provide small cell support, including offering it in an as-a-service fashion.

The first step is to determine the best way to deploy small cells in a 5G network, which Charter currently is exploring through trials. Cable providers could provide 5G support directly for the mobile carriers, in addition to their ongoing cell tower backhaul support. Eventually businesses will need to determine their local 5G small cell needs. Although it's early, it's not hard to envision that options for as-a-service offerings, support products, and managed and hosted services will materialize.

4. IoT Enablement

Cable has the ability to add IoT apps to its platforms, and it is doing so in such areas as home automation, tele-health and smart cities. As aggregators with powerful distribution outlets, cable providers also have the ability to enable other innovators' dreams. The secret sauce for cable's support is LoRa, a wireless protocol that's well-suited for low-power wide-area networks

(LPWANs) that can carry IoT commands over distances up to about 30 miles. CableLabs has issued an open-source LoRa, and Comcast has deployed LoRaWANs in more than 15 metropolitan markets.

In turn, Comcast has launched machineQ, a support service that is providing LoRaWAN and network and sensor optimization for IoT providers that are offering everything from water management and smart streetlights to soil monitoring and rodent control. Similarly, Cox Communications has unveiled Cox2M, offering services to monitor and track commercial assets and inventory, including vehicles and power lines. Cox believes that Cox2M's service line can be used for many types of industries, including transportation, cities and campuses, energy companies and utilities, agriculture, retail and real estate. Meanwhile, Altice USA may benefit through Altice Labs, the Altice global conglomerate's development lab that is heavily focused on IoT and next-generation networks.

Whether cable's IoT services and enablement efforts provide sales opportunities for channel partners remains to be seen. But if the IoT trend takes off the way that many prognosticators think it will, cable providers may need support from indirect sales channels. At the least, the growing community of IoT companies expands the customer base that requires cable's broadband capabilities.

5. Hosted UC

Voice products remain a top priority for channel partners. But what is the future of voice in a world where companies increasingly operate as virtual organizations and rely upon mobile devices?

The answer may lie in unified communications applications that tie together a company's wired, wireless and business applications into a seamless platform. UC is a decades-old concept, and most current phone products and telecom systems include it in various ways. But there appears to be room for additional applications that can modernize and simplify it. SD-WAN platforms are viewed as a potential way to add UC support across private, broadband and wireless services and offer it as unified communications as a service (UCaaS).

UC dovetails with the concept of cloud or team collaboration. Increasingly, businesses that operate on a virtual basis need personnel to unite, share information, collaborate on tasks, get training or integrate business applications such as Salesforce. UC can involve various features, including unified voice and email services, videoconferencing, chat, presence, screen share and whiteboard sharing. To fulfill those needs, UC applications require a high degree of reliability, responsiveness and security.

Today most cable providers offer managed and hosted voice services based on PBX, PRI and SIP and that include UC features. Last year, Spectrum Enterprise expanded the availability of its Hosted Voice PBX product, described as "a full-featured, unified communications solution that helps to create a flexible work environment." Comcast Business offers Business VoiceEdge, including UC that can be enhanced with a Voice Mobility package for seamless communications. Cox Business recently added UC features to its IP Centrex hosted voice solution. Altice USA offers hosted voice plus UC and hosted contact center solutions. By serving as aggregators of multiple services and software, cable providers are well-positioned to give businesses the unified support that they need now and in the future.

Conclusion

Cable providers have made tremendous headway in business services by leveraging their infrastructure to grow broadband capabilities and product lines. The five tech trends identified in this report demonstrate the ways in which the industry continues to increase its business and technology opportunities. With cable facing pressures in the pay TV sector, business services and the channel have increased in importance. As their capabilities grow, cable providers are sure to be looking to embrace more innovations and potential products and services. These trends may be only the beginning of what's to come.

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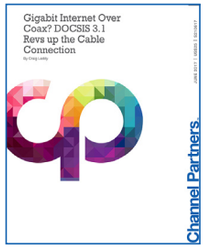

Gigabit Internet Over Coax? DOCSIS 3.1 Revs Up the Cable Connection

The advent of DOCSIS 3.1 is making gigabit internet speeds available over cable as well as fiber. And as the technology prepares to enter the business arena, channel partners should be learning what it can do and how their cable partners plan to use it. This report examines how DOCSIS 3.1 will help businesses better prepare for richer cloud solutions, more video applications, virtualization and the IoT, as well as help channel partners move up-market.

Coax or Fiber: Which Is Right for Your Customer?

When customers have a choice between coaxial cable and fiber, partners need to take a few critical factors into consideration before making a recommendation.

Cablecos & The Channel: State of the Cable Market 2018

Cable providers continue to work with their partners to drive up-market, delivering a wider variety of services to ever-larger companies, our eighth annual State of the Market Survey shows. SD-WAN and Gigabit Ethernet are taking off, and survey respondents like having access to multiple cablecos through one agent agreement. In this report, partners tell us what cablecos are doing well and make suggestions for what they might do differently.