New Year, More Fiber

Exciting new technologies are coming your way, and they all require lots more fiber.

By Heather Burnett Gold / *Fiber to the Home Council Americas*

My family has many holiday traditions that happen like clockwork every November and December. The technology world has its own post-holiday tradition: the annual CES in Las Vegas. It's the largest trade show in the world, and the products and services we'll see in our homes and at work tomorrow are on full display there, today.

Early in the show, I was pleased to participate with a group of FTTH Council members in a panel discussion about connectivity and how fiber empowers this future of innovation. As I walked around the show floor, I saw the emerging tech trends that will dominate 2017. Fiber will be essential to their performance and widespread consumer adoption.

The cloud and the internet of things (IoT). Devices that connect to the internet are becoming smaller and require less power. Many expect 2017 to bring the first batch of low-power, wide-area networks. These advances are expected to extend the reach of the IoT, connecting previously hard-to-reach devices and allowing a much larger assortment of objects to be embedded with chips. This could mean more devices in buildings, more smart sensors throughout cities and even more devices in rural areas for applications such as precision agriculture.

Though no single device will produce a large amount of data, the devices are expected to be deployed at a massive scale. Gartner estimates the average family home will have more than 500 smart devices by 2022, and Ericsson believes 50 billion devices will be connected to the internet by 2020 – 10 devices for every person online. Fiber must be placed deep within and throughout networks to ensure these devices work the way they are intended and stay reliably connected.

IoT will impact manufacturing and supply chains, increasing efficiency by controlling machines remotely, especially in hazardous or dangerous conditions. Where reliability is essential and conditions are too harsh for wireless buildings, in-building fiber is the best way to transmit data among machines.

Optical fibers can be the sensors used in IoT applications, particularly in activities that require sensitivity and high performance, such as monitoring electrical grid activity or providing physical security in pipelines and oil wells.

Artificial intelligence (AI). A wide range of "personal assistants" and other Siri-like "chatbots" were on display at CES. In 2017, AI software will learn better on its own and will appear in even more places. Analysts predict that even complicated tasks will be handed off to powerful machines. These advances depend on compiling and accessing – and learning from – the massive amounts of information that connected devices produce.

Fiber networks will be crucial to handling the coming data deluge: IDC expects annual worldwide data generation to reach 44 zettabytes by 2020.

Virtual, mixed and augmented reality. Oculus Rift, Magic Leap and Pokemon Go have broken out of the world of tech insiders and into the mainstream. At this year's CES, virtual-reality headsets, software and services were on display from more than 70 companies – almost twice as many as last year. It was amazing to see technologies that mix the world's physical and digital aspects. The virtual reality industry is clearly in its infancy and poised to take off. Equally clear is the need for robust fiber networks with abundant bandwidth to deliver full 360-degree video experiences.

5G wireless. 5G is the ultrafast, cutting-edge, underlying technology of many (if not most) technologies discussed and on display at CES. Many big technology players made 5G a centerpiece of their keynotes, talks and displays. Though fiber is not usually people's first thought in connection with wireless, it should be. The performance goals touted for 5G networks – high capacity, low latency, extreme reliability – depend on lots of fiber being in lots of places.

The annual CES left me energized for the FTTH industry. 2017 promises technological delights and leaps that will benefit everyone at home, at play and at work, and fiber will light the path for all of them. We at the FTTH Council look forward to pushing the industry forward in the New Year! ❖

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