

# Wireline and Wireless Broadband Solutions Converge



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**N**ot long after the end of World War II, the earliest parts of our modern broadband networks were being deployed. Central to this effort was the development, manufacture and deployment of cables and associated interconnect products. Over time, the demand on networks has shifted from one-way broadcast of simple CATV channel lineups to bi-directional carriage of high-speed broadband data over both copper and fiber. To keep pace with demand, the quality and capability of copper cable and other communication products continues to increase while the industry seeks out promising advanced technologies to supplement the wireline network.

While traditional “hardline” cable still represents a notable portion of network investment by broadband service providers, fiber infrastructure has become the “go to” technology for new wireline deployments. Today fiber-centric manufacturers and their products significantly contribute to the growth of wired broadband networks.

As service providers build fiber networks to connect homes and businesses, they now must also provision capacity to enable fast, reliable backhaul of traffic from towers and other wireless access points. In the last decade broadband content over the airwaves has exploded. Wireless service providers continue to increase the amount of bandwidth available to consumers, allowing them instantaneous access to a plethora of information, including video and high-energy gaming. The ITU estimated that, at the end of 2021, there were 6.5B active mobile-broadband subscriptions worldwide, about five times its estimated number of fixed-wireline broadband subscribers.

With implementation of 5G, wireless broadband takes a major leap forward in its ability to deliver high bandwidth and lower latency for an improved user experience. This growth is facilitated through the granulation of wireless networks where even individual blocks within a neighborhood may have multiple antennas deployed to provide optimal coverage

and maximum capacity.

Service providers are recognizing the opportunity presented by the prospect of broadband services anytime and anywhere through the use and convergence of wired and wireless networks. As broadband providers pursue such a strategy, vendors that can provide expertise across both topologies are emerging as reliable partners in developing, delivering, and maintaining this converged network.

This even extends to mobile devices which may contain a half dozen or more antennas, and the latest automobiles that are enabled by hundreds of feet of on-board cable, countless sensors, and a small arsenal of antennas. Vendors simultaneously enmeshed in these technologies are proving to be true assets to broadband service providers planning the networks of tomorrow.

Regarding wireless deployments, service providers should seek partnership with these multidisciplinary vendors able to provide solutions that cross the boundaries between core and emerging technologies within the network. One example of a product successfully deployed and in growing demand in this space is the hybrid cable. These combine high-capacity fibers along with copper power cable into a single sheath for use on towers and similar applications providing a simple solution that reduces labor and allows for further densification of cell sites.

Perhaps just as important, suppliers that aggressively pursue the goals behind the United Nations’ Race to Zero carbon neutrality campaign are introducing innovations such as the world’s first upgradeable antenna, which may cut a service provider’s carbon footprint by 50% or more, thereby setting aggressive standards of sustainability for new technologies and solutions.

As broadband providers expand their footprint to include anywhere and anytime offerings on any device, their ability to do so quickly, efficiently, and sustainably will be enhanced by partnering with vendors that can bring strong experience and holistic views across all facets of the network.

**WHILE TRADITIONAL “HARDLINE” CABLE STILL REPRESENTS A NOTABLE PORTION OF NETWORK INVESTMENT BY BROADBAND SERVICE PROVIDERS, FIBER INFRASTRUCTURE HAS BECOME THE “GO TO”**