Government Technology Insider

LUMEN

STRENGTHEN MIDDLE-MILE INFRASTRUCTURE TO DRIVE DIGITAL INCLUSION

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Technological advancements have enabled many aspects of Americans' lives to move online, from work and school to personal tasks, and even essential services such as healthcare. This shift delivers convenience, efficiency, and even the possibility of new services, but these benefits aren't accessible for everyone. Despite the perception that everyone has moved online, an estimated 42 million Americans do not have access to broadband internet. Digital inclusion—the efforts of federal, state, and local governments, along with industry partners, to deliver connectivity to underserved and unserved areas— has many moving parts that must all work together to ensure access to connectivity. Developing middle-mile network infrastructure is crucial to connecting people in these underserved and unserved communities.

Bringing broadband Internet to underserved areas requires coordination between last-mile connections and the networks that support them. While the cost of Internet and devices contributes to lack of access, the barrier for nearly 20 percent of Americans without broadband Internet is a lack of infrastructure to provide this essential service. In areas with no existing network infrastructure, state and local governments must dedicate time, resources, and labor to building out fiber and conduit that reach more remote citizens. Funding from grants and programs such as

the American Rescue Plan can support these efforts, but optimizing those resources to maximize the reach of newly built infrastructure poses a challenge.

However, not every middle-mile upgrade requires states and cities to start from scratch. In some cases, it's possible to work with industry partners to extend the reach of existing network infrastructure. Scott Pohlman, Director of Business Development, Higher Ed Practice at Lumen, shared that Lumen is using its extensive fiber footprint in North America to help drive digital inclusion efforts. "We have 450,000 route miles across the country of both fiber and conduit," Pohlman explained. "In some states, we're taking that empty conduit and pulling cable through it to provide fiber infrastructure. In other communities, we're providing fiber on our existing network in areas where we have excess capacity. Either way, there's no construction; those fibers are there, and we're making them available."

Taking advantage of existing fibers for new uses allows state and local governments to deliver connectivity faster and with fewer resources. In October 2023, the California Department of Technology announced its partnership with Lumen to build out 1,900 miles of network infrastructure by pulling new fiber utilizing through Lumen's existing conduit. Part of the state's Middle Mile Broadband Initiative will require new construction, but partnering to use existing resources will enable the state to bring middle-mile connectivity to "hundreds of California communities by the end of 2026."

It also lets governments use their funding more efficiently. Partnering with middle-mile infrastructure providers means that governments don't have to take on the expensive and resource-intensive work of building their own infrastructure. States can instead reallocate budget to development in areas with no existing infrastructure, as well as building out last-mile infrastructure and attending to network maintenance over time.

Expanding access to new and faster internet connections increases Americans' participation in today's economic and social communities. Broadband Internet access has become an essential factor in driving better health outcomes and economic growth, supporting education, and facilitating social experiences. "Digital inclusion is about delivering broadband or digital service, but it's also [providing] digital services to help serve constituents and enable cities, counties, states, and municipalities to advance the needs of their residents," said Steve Kalomas, Director of Business Development, SLED Infrastructure

Practice at Lumen. Middle-mile infrastructure provides the networks that connect last-mile activities, such as providing devices and Internet service at low or no cost, to broader online communities, helping governments to expand the reach of their services and meet constituent needs.

Technology will continue to develop at a rapid pace and the emergence of new tools such as generative AI will result in an ever-larger digital divide, fueling the growth of economic, educational, and other social disparities. Taking steps to both bridge the existing digital divide and slow its growth in the future is critical, and building a foundation of reliable middle-mile network infrastructure brings governments closer to that goal.