

We Are All Members of the Gigabit Society – or Are We?

The COVID-19 pandemic highlights how the U.S. broadband deficit remains a glaring and painful gap between haves and have-nots.

By Gary Bolton / *ADTRAN*

CCOVID-19 forced the United States into a stark reality. People are either full-fledged participants in the gigabit society – or they are not. Those without gigabit access today fall further behind, further widening an economic and social gap between urban and rural areas of the country.

People now work from home in unprecedented numbers. Education continues online, with classes in session from elementary school through college. To keep everyone safe, a telemedicine consult is now the first choice over an in-person office visit. Restaurants that viewed online ordering as a novelty in January now see it as a necessity.

Throughout the country, people certainly aren't experiencing business as usual but are getting along the best they can – assuming they have enough access to the basic utility of broadband.

Society has undergone a radical transformation of habits and practices that will likely remain even after the current health challenge is met. Education, business and health care all have embraced broadband service delivery at scale practically overnight. By and large, forward-looking network service providers leveraged investments in fiber and SDN/NFV to successfully meet surges in demand across those sectors no one would have imagined at the beginning of the year.

Remote work has always been an option for many, but stay-at-home orders pushed it

into practice for every organization or business capable of doing it. Companies have gone from weekly conference calls to multiple Zoom meetings daily. To meet demand, in a matter of days and weeks service providers scaled up server and broadband capacity they believed they would grow over months and years.

Education has always had a distance-learning component. Universities saw it as a complement to physical campuses, but few in the K–12 world – aside from the home-school community – viewed it as a mainstream component for teaching. School districts and higher education alike now participate in crash courses to deliver full curricula remotely, encountering challenges in scaling, security and methodologies.

Telemedicine, too, is being mainstreamed more rapidly than envisioned. Health care professionals want to drastically reduce risks for patients and themselves. Online visits between doctors and patients are now a first option rather than a novelty to work around an overbooked office or a trip to the ER. The mental-health community has had little choice but to adopt virtual visits, especially with patients in need of more counseling and support during these times.

THE BROADBAND DEFICIT

For those without gigabit access, the broadband deficit is now unmistakably a glaring and painful gap between haves and have-nots. Left

unaddressed, communities without gigabit access will be left further behind until they are nothing more than physical ghost towns matching their virtual status as families and businesses migrate toward better opportunities.

Providing more broadband connectivity through schools and libraries is admirable, but it is a stopgap measure that does not address underlying community economic development. Schools and libraries need local taxes for sustainable operations. Local taxes are paid by households and stable businesses with access to the fastest broadband available. Meanwhile, long-established firms want to stay where they are rather than pick up and move to a place with better connectivity.

High-speed broadband for all has been an aspirational goal for policymakers and tech wonks dating back to the 1990s, but to date has not been embraced with the same commitment as rural electrification was in 1936. Perhaps it is time to change that and finally recognize the necessity of fiber connectivity as the essential 21st-century utility for all communities.

Comparing fiber deployment to building roads and electrification can be useful and flawed at the same time. There is a significant front-end capital expense: the labor of pulling fiber through neighborhoods and over the countryside. Rural electrical co-ops that deployed fiber made the commitment to go with the largest amount possible, because the marginal cost of more glass – more broadband capacity – in the ground and on poles was insignificant compared to the labor necessary to put it there.

PUSHING FOR 'GIGAFICATION'

People know they need fiber and they are asking for it. Gigabit access is not a luxury service. Rural electrical co-ops interviewed for an ADTRAN white paper said once fiber deployment started, people began asking when it would arrive in their neighborhood, filling up waitlists. Their eagerness

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for broadband sometimes resulted in occasionally heated conversations because co-ops couldn't turn up service fast enough to meet member demands.

With fiber, communities gain economic on-ramps for future growth and meet the immediate needs of local businesses and households for education, remote work opportunities, e-commerce and enhanced medical care. Unlike roads, excess fiber can remain dark until needed, not requiring maintenance or repaving. Once available, adding a new user, be it in a new neighborhood development or a business park, is a matter of physically connecting the last few feet and plugging in electronics.

As Congress considers stimulus measures to bootstrap the economy back to health, American rural broadband infrastructure projects are among the obvious investments that provide both a short-term boost in local jobs, services and equipment purchases and a long-term benefit for the communities receiving them. It is time to push for the "gigafication" of the country, providing universal high-speed broadband access for all.

If not addressed, the gaps between gigabit have and have-not U.S. communities will grow wider in the months and years to come. Today's hasty COVID-19-driven patchwork fixes for K-12 distance education, remote work, telemedicine and e-commerce will evolve into solutions and best practices integrated into mainstream routines over the next three years. Schools will come to embrace the benefits of self-paced learning models for students, and "snow days" will become a relic as teachers leverage distance education.

The term "telemedicine" in vogue today should follow "VoIP" into limited usage, with online video access to doctors and other health care resources integrated into standard practices as a part of a holistic approach instead of a siloed novelty for most medical professionals. Screening patients remotely and collecting simple information prior to an online consult can save time for both doctors and patients while keeping all safe, reducing costs for insurance companies, and resulting in better outcomes for patients.

Remote work continues to demonstrate significant cost benefits for businesses, with increased productivity, happier employees and the potential for reduced office-space overhead. Predictions of a wholesale workplace transformation might be overstated because of cultural, organizational and management issues, but all businesses now realize remote work and e-commerce online ordering are necessities rather than indulgences.

Without gigabit networks, rural communities are left out in the cold, unable to reap the many efficiency gains, cost savings, quality-of-life improvements and economic opportunities ubiquitous high-speed connectivity delivers. It is past time for the United States to dedicate substantial investment in rural broadband to prevent the demise of rural communities. ❖

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