



SUSTAINING CAPITALISM

A series focused on nonpartisan reasoned solutions in the nation’s interest to the central challenges we face in order to provide prosperity for all Americans.



Broadband Access Connecting America

With most Americans dependent on reliable, high-quality, high-speed internet services to work, train, consult with doctors, or attend school from home, the COVID-19 pandemic vividly demonstrates that affordability and access barriers leave too many families behind. As America’s leaders in business and policy work toward a postpandemic economic recovery that delivers increasing prosperity for American families and preserves our nation’s economic leadership, they must also build toward a vision of a fully wired nation that meets the internet needs of all its citizens. Innovation and competition in information technology have been essential to delivering a higher quality of life and modern commerce, and they will be integral to lasting solutions that close two stubborn gaps that leave a minority of Americans behind.

First, millions of Americans—particularly in the least densely populated areas—lack access to reliable high-quality internet services that could connect them to essential educational, employment, and entrepreneurial opportunities. Second, large numbers of low-income Americans with physical access to such services cannot afford them at current market prices, leaving them “underserved,” with less economic opportunity than their higher-income peers. In too many areas, a lack of competition among providers contributes to underservice.

As needed internet speeds and associated hardware and technologies have advanced, closing these high-speed internet service gaps—increasing economic opportunity and strengthening businesses and communities—is essential. Policymakers must leverage the dynamism and innovation of the private market, increase competition in the provision of services, and invest wisely to close the gaps, boost deployment and affordability, and meet the universal service and critical technologies goals that have motivated nearly a century of federal telecommunications law.¹

Insights for what's ahead

RECOMMENDATIONS FOR ELIMINATING HIGH-SPEED INTERNET UNDERSERVICE IN THE US

- 1 Improve the effective targeting and lifetime value of federal investments by updating the Federal Communications Commission's definition for high-speed internet service to upload and download speeds of at least 100 Mbps ("100/100").
- 2 Federally fund the buildout of upgradable high-speed internet networks to jump-start private market provision in areas not currently served at broadband speeds, so all Americans have access to at least one provider offering at least 100/100.
- 3 Leverage existing and new public assets to advance private market provision by:
 - a Allowing private providers to expand existing high-speed community networks—like those serving schools and libraries—if it will not degrade their capacity;
 - b Allowing interested high-speed internet providers to coordinate network expansions or upgrades with publicly funded infrastructure construction projects; and
 - c Evaluating the inclusion of empty conduits or open-access "middle-mile" networks when private projects are not pursued.
- 4 Reform existing federal supports to improve affordability, including:
 - a Modernizing the FCC's Lifeline program by expanding eligibility to all fixed internet providers, reevaluating existing subsidy levels, and broadening the base of providers subject to Universal Service Fund fees to meet program goals.
 - b Expanding federal support for affordable high-speed internet access to recently unemployed workers.
- 5 Enhance competition among providers by:
 - a Preempting restrictions that prevent municipalities from offering high-speed internet service.
 - b Easing provider requirements for qualifying as eligible telecommunications carriers (ETC) and reducing the use of ETC requirements as a barrier to entry, thereby encouraging more providers to compete for federal contracts or participate in federal competitions.
- 6 Bolster transparency in internet markets by:
 - a Funding detailed Census Bureau surveys of individuals and businesses on why they use the internet, which devices they use, and what their options and costs are for internet services. The results of such surveys will deliver a comprehensive, up-to-date understanding of the state, and importance, of consumer connectivity and will better scope the extent and effects of underservice and guide investments.
 - b More aggressively promoting the FCC's "Broadband Facts" consumer label standard to help customers demand better service and spur competition among providers on clearer grounds.

THE COST OF UNDERSERVICE IN HIGH-SPEED INTERNET

As outlined in the Committee for Economic Development of The Conference Board's Solutions Brief, *Technology and Innovation Solutions Must Lead the Way to COVID-19 Recovery*, affordable access to high-speed internet had become essential for families to pursue many economic, educational, and quality of life improvements even before the pandemic. But COVID-19 has driven even more of everyday commerce, work, health care, and civic opportunities online. For example, early in the pandemic, the share of the labor force working remotely may have temporarily quadrupled. It remains elevated and is likely to continue above the prepandemic trend.² Surveys suggest that nearly three-quarters of K-12 students may have started the 2020-2021 academic year with at least some component of their education online.³ At the end of January, among families with children in school, 16 percent of those with annual household incomes below \$25,000 reported that internet is, at best, only sometimes available for educational purposes. By comparison, only 2 percent of families making more than \$75,000 a year reported similar challenges in internet availability.⁴ A similar divide is evident based on respondents' race or ethnicity, with Black families and Hispanic families roughly twice as likely as White families to report internet that is no better than sometimes available for educational purposes.

Past improvements in internet quality and access—driven by private development and competition—expanded economic opportunities for families and strengthened the pool of talented labor for employers. For example, a study from the Federal Reserve Board found a 4 percentage-point boost in labor force participation among married women once they began using high-speed internet service, with college-educated women with children showing the biggest gains.⁵ The findings suggest that expanded access to remote work options from improved internet service was a contributing factor.

Americans increasingly rely on the internet to find employment. By 2016, roughly 80 percent of job searchers were using the internet. High-speed internet connectivity may help reduce the duration of unemployment—and improve workers' wages—by making it easier for unemployed workers to find better paying and more stable jobs.⁶ Such improvements could be critical for the more than 9 million workers without nonfarm payroll jobs in December 2020 compared to a year prior. Faster internet service speeds are also associated with more opportunities to start new businesses.⁷

Some of the low-wage workers hit hardest by the pandemic potentially have the most to gain from high-speed internet access and quality, but they are the most likely to lack affordable access.⁸ In December 2020, employment levels among workers who had earned \$30,000 the previous year remained down roughly 14 percentage points, while employment for workers who had made at least \$85,000 in 2019 was above prepandemic levels.⁹ A 2016 FCC report found that only about half of adults with incomes less than \$30,000 had broadband at home—internet speeds of at least 25 Mbps for downloads and 3 Mbps for uploads—whereas broadband access for households with incomes above \$75,000 was nearly ubiquitous.¹⁰

Beyond the benefits to individuals, widespread high-speed internet adoption feeds the economic competitiveness and strength of the whole nation. Several studies have suggested that increased internet speeds in developed countries like the United States are associated with faster overall economic growth.¹¹ Broader access and more competition among providers are also associated with regional economic growth and lower unemployment.¹² That the gains are seen across advanced economies suggests that the US may fall behind other nations, and be less attractive for investment, if its internet services do not keep pace. According to a 2018 FCC report comparing average download speeds among 28 OECD nations, the US ranked 10th.¹³ OECD data suggest that the US is also 10th in its share of fixed broadband subscriptions with download speeds of at least 100 Mbps per 100 inhabitants.¹⁴

High-speed internet access increases economic opportunities through the development of talent as well. The internet had become increasingly important for accessing and delivering education and training opportunities even before the pandemic; roughly a sixth of postsecondary students engaged in at least some distance learning by the 2018-2019 school year.¹⁵ Greater access to online learning and training options can expand available career paths and reduce the cost of acquiring skills.¹⁶ Postsecondary institutions expect remote learning to be an increasing share of their business; more than 70 percent of colleges and universities expect to expand remote offerings over the next three years.¹⁷

High-speed internet is also increasingly important outside of work. Nearly half of Americans report using internet research to inform their important decisions.¹⁸ And even before COVID-19 pushed expansion of telehealth practices—including a more than doubling of telehealth visits in March 2020 compared to a year prior—roughly a fifth of Americans reported using remote health services.¹⁹

BY ANY REASONABLE DEFINITION, MILLIONS OF AMERICANS REMAIN UNDERSERVED

The existence of a “digital divide”—much less access to affordable high-speed internet services for lower-income households—is not controversial, but the scale of the challenge depends on how underservice is measured. The FCC reports that in 2018 fewer than 15 million people lived in census blocks where there were no broadband customers and where internet service providers either did not provide access or could not “without an extraordinary commitment of resources.”²⁰ This definition likely overstates access because it excludes people with no option for high-speed internet themselves who live near someone with access. One partial geographic analysis, if assumed to be nationally representative, suggests that the number of people without any current access to broadband services is closer to 42 million.²¹

Current federal efforts to address underservice have largely focused on the access challenge—where market incentives have not induced providers to make the upfront investment to build network connections. While the fixed costs of expansion are high, many currently unserved markets may prove profitable after initial subsidized investments. But underservice extends beyond mere physical access to affordability. Making the fastest possible internet connection available to a household will not help if the household cannot afford the services. For the lowest-income households, researchers

have suggested a post-subsidy consumer price of between \$10 and \$20 per month would constitute affordability, while the average unsubsidized broadband package currently costs roughly \$50 per month.²² The American Community Survey suggests that roughly 20 million households—approximately 17 percent of all Americans—do not subscribe to high-speed internet services.²³ And whether owing to access, affordability, or choice, 157 million people do not, in practice, use internet at home at actual usage speeds that meet the current FCC standard of broadband, research by Microsoft suggests.²⁴

Underservice and provider competition

An alternative way of measuring the underserved population would consider competition among providers. Where two or more options for high-speed internet exist, market forces likely will drive better, more affordable options for the average consumer. However, many Americans with high-speed internet options do not benefit from direct competition. A 2017 study by the FCC found that most rural residents (63 percent) had either one provider option for fixed broadband or none.²⁵ Even in urban settings, roughly a quarter of people with access to fixed broadband had only one broadband provider option.

Because different users feel adequately “served” at different levels of high-speed internet connectivity and are prevented from accessing services at different price points, it can be difficult to infer the true level of underservice from current use alone. After all, non-use is likely to reflect self-selection, at least to some degree. In a 2019 Pew Research Center survey of non-users, a little less than a quarter attributed their lack of high-speed internet to lack of access or offerings slower than needed, while half of respondents reported that the cost of home broadband contributed, and roughly a fifth indicated affordability was the most important reason.²⁶ But that leaves a sizable minority of potentially underserved Americans who claim not to have high-speed internet by choice.²⁷ More than 4 in 10 respondents to the Pew survey without home broadband said that they were getting what they needed from their smartphones.²⁸ Strikingly, although many Americans primarily access the internet with smartphones, Americans with low incomes are much more likely to rely solely on smartphones for that purpose, while few high-income households eschew high-speed internet service.²⁹ With internet-connected smartphones typically less suited to some work, training, and school tasks or platforms with current technology, the pattern is notable for what it suggests about economic opportunity.

Because it is difficult to define and measure underservice, identifying specific numbers and characteristics can be challenging. The gap between FCC estimates of access versus other outside analyses motivated Congress to enact the Broadband Deployment Accuracy and Technological Availability Act (“Broadband DATA Act”) in March 2020 and provide \$65 million in the 2020 year-end legislative package to fund the FCC to collect and disseminate more granular broadband service availability data.³⁰ However, most surveys tell a consistent story about the characteristics of the underserved population.

Geographically, rural areas are much more likely to lack access to high-speed internet entirely. Using the FCC’s definition of connectedness, more than 11 million Americans in

rural areas lack access to broadband, compared to less than 4 million Americans in urban settings.³¹ There are also disparities in broadband access among rural populations, with one study finding that broadband access was 16 percentage points lower in majority-Black rural counties and 45 percentage points lower in majority-Native American rural counties than in majority-White rural counties.³² Moving beyond access to use, though a greater share of rural households are without high-speed internet—slightly more than a fifth of rural households, versus less than a sixth of urban ones, according to Census data—there are roughly three times as many nonhigh-speed internet users in urban areas as rural ones.

High-speed internet access and use vary strongly with income. According to FCC data, areas with high-speed fixed internet connections have median household incomes on average roughly 25 percent higher than areas that lack access. Areas with access also have lower rates of poverty—a relationship that holds across both rural and urban areas, and is not simply a product of lower average rural incomes.³³

Respondents to the 2019 Pew survey with annual household incomes below \$30,000 were 24 percentage points less likely to report having a high-speed home internet subscription than those in households with incomes greater than \$75,000. Likely related to income disparities, nearly all college graduates in the survey (97 percent) reported high-speed internet use at home, while those with only a high school education (84 percent) or who did not complete high school (65 percent) were much less likely to have home connections. Non-users also tended to be older. Adults under age 65 were more than 20 percent more likely to have high-speed internet at home than older Americans.³⁴

Across categories of geography, income, education, and age, the most economically vulnerable people and the most disadvantaged communities most commonly lack the modern requirement of high-speed internet service.

RESPONDING TO THE CHALLENGE

With the growing need for affordable, high-speed internet service to access economic opportunity and a better quality of life, and with millions of Americans still underserved, the public and private sectors must work in tandem to connect communities, businesses, and families throughout the country at modern standards of information technology.

Competition and innovation in the private sector to deliver high-quality services will be paramount. Improvements in existing technologies and leveraging new technologies could substantially improve access and affordability. For example, if alternative delivery mechanisms like satellites in low earth orbit can become competitive on quality and cost in rural areas currently underserved by fixed internet providers, it would reduce the direct federal investment needed to increase access. If the quality and reliability of wireless internet service closes the gap with high-speed fixed connections, high-speed internet service could become affordable in some geographic areas. Policymakers should target outcomes, and not prescribe particular technologies, as they attack underservice in high-speed internet. Capitalizing on—rather than impeding—competition, innovation, and dynamism among providers is critical.

The components of a markets- and competition-driven program for boosting affordable access include:

Improve the effective targeting and lifetime value of federal investments by raising the FCC's standard for high-speed internet service to 100/100

Congress and the FCC already recognize that the principle of universal service—that all Americans should have affordable access to essential communications technologies, binding the nation together in community and commerce—is as applicable to high-speed internet in the early 21st century as it was to telephones in the 20th century.³⁵ But the definition of affordable, quality service must keep pace with the opportunities that information technology provides—particularly in education, training, work, and health applications. Otherwise, the disparities between the opportunities and standards of living enjoyed by the served and underserved will continue to widen.

The FCC's current standard for high-speed internet—unchanged since 2015 at minimum *advertised* download speeds of 25 Mbps and upload speeds of 3 Mbps—overstates actual US connectivity, and unfortunately encourages investment of public resources in substandard or soon to be outdated internet networks, while discouraging projects that would raise such functionally inadequate “service” to a more meaningful standard.³⁶

As internet applications have advanced, data burdens have increased—particularly through sharp increases in videoconferencing for employment or education. So average household usage has grown. Many families have had their connectivity unexpectedly stress-tested by a pandemic that has forced multiple members to participate in remote work or school simultaneously. Clearly, a more forward-looking measurement of high-speed internet service adequacy is well justified. Current FCC Commissioner Jessica Rosenworcel and former FCC Commissioner Tom Wheeler have both called for minimum download speeds of at least 100 Mbps and significant increases in the current upload speed standard.³⁷ Based on FCC data, roughly 90 percent of households live in areas with potential access to download speeds meeting that standard, though only 45 percent of households currently use that access.³⁸ In its most recent report on consumer fixed broadband performance, the FCC found that, in the fall of 2018, the weighted average advertised download speed was well above 100 Mbps among the internet service providers it measured.³⁹

Because the pace of innovation is uncertain, establishing an ambitious but achievable standard for high-speed internet service is challenging. Anticipating future needs risks building unneeded capacity or pricing some customers out of a tier of service higher than they need. But the quality of available internet (and the number of potential consumers with access to it) and the innovation that leverages that quality likely will feed on one another. Because the FCC standard influences federal investments and connectivity goals, an ambitious standard of internet quality—one that encourages networks to meet more intensive future needs—will motivate technological improvement and a stronger, more competitive economy and workforce.

Ensure all Americans have affordable access to high-speed internet

MAKE SURE BROADBAND NETWORKS REACH ALL AMERICANS

Invest in high-speed internet network infrastructure to jump-start private market provision in areas not currently served at broadband speeds. With a robust standard for high-speed internet, Congress should make networks meeting those standards available to all Americans. A 2017 report from the FCC’s Office of Strategic Planning and Policy Analysis estimated that the roughly 14 percent of residential and business locations that (then) lacked 25/3 Mbps networks could be reached with high-performance fiber networks—capable of surpassing the 100/100 standard—through investment and incentives costing roughly \$80 billion.⁴⁰ Other estimates are higher—and poor data on even current services and connections make estimation difficult.⁴¹ However, it is likely that a one-time investment on the order of \$100 billion—mostly as direct support for the buildout of upgradable high-speed networks, prioritized to areas not served at the current 25/3 Mbps standard for broadband speeds and modeled on the Broadband Technology Opportunities Program that was part of the 2009 American Recovery and Reinvestment Act—would give all Americans access to at least one provider offering at least 100/100.⁴² Federally funded projects could require that providers bidding on these projects provide an affordable option for high-speed internet for low-income households. That would directly benefit all Americans in the targeted communities, with spillover benefits for the nation as a whole. Additionally, the buildout of fixed high-speed internet would likely increase the feasibility and reach of advanced wireless technologies—like 5G and beyond—that require high-speed fixed internet as a base. Such a buildout program should be a priority to modernize American infrastructure and stimulate the post-COVID-19 economic recovery.

Leverage existing and new public assets to advance private market provision. Policymakers should also cost-effectively leverage existing assets and other infrastructure investments. Prepandemic, one report declared the “classroom connectivity gap” closed, with 99 percent of schools connected to fiber networks capable of very high internet speeds.⁴³ But the pandemic demonstrated that high-speed internet connections to schools have not reached some students in the communities surrounding those schools.⁴⁴ Where publicly subsidized or publicly owned high-speed internet connections have reached schools and other “anchor institutions” but access or provider competition is limited in the surrounding communities, private providers should be allowed to expand networks from the existing community nodes if services at those institutions will not be significantly degraded.⁴⁵

Additionally, large public investments in modern transportation infrastructure should be coordinated with high-speed internet providers who may wish to piggyback off the construction. Without such interest, policymakers should evaluate the return on investment of including empty conduits or—particularly near underserved, low-population-density areas—funding open-access networks that could ultimately ease later, private expansion of high-speed internet service.⁴⁶

INCREASE AFFORDABLE ACCESS TO HIGH-SPEED INTERNET BY REFORMING EXISTING FEDERAL SUPPORTS

Modernize the FCC’s Lifeline program. Bound by its roots in telephone service, Lifeline—the FCC’s major support for low-income access to communications technology—is ill-suited to modern needs, even after a 2016 order expanding its support to broadband.⁴⁷ Typically, Lifeline provides less than \$10 per month to high-need households, suffers from low participation, and generally subsidizes internet access indirectly through smartphones with typically slower internet speeds.⁴⁸ Support for affordable fixed internet service for low-income customers has typically been provided through private cross-subsidized, low-cost plans, often by cable companies or other providers that had not been eligible to provide Lifeline services.⁴⁹ However, the services offered by private carriers—with some exceptions—have typically lagged, and may not readily expand to, the higher speeds required for educational and job opportunities performed from home.

Broadly expanding Lifeline service eligibility to fixed internet providers—including those offering low-income assistance that is not currently federally subsidized—would likely increase competition and the quality of existing plans targeted to low-income households. Participants should be required to offer affordable high-speed internet service options above a minimum threshold gradually rising to 100/100. Such expansion would increase household participation and better fulfill connectivity and access goals.

Although the current benefit matches the 1980s subsidy adjusted for inflation, it may be inadequate today.⁵⁰ When Congress enacted funding in December 2020 to help recently unemployed workers and families with low incomes, it provided a monthly subsidy more than five times the typical Lifeline subsidy.⁵¹ With better information on connectivity and services coming under the Broadband DATA Act, Congress should review Lifeline subsidy levels soon.

With improved participation or expanded subsidies (or both), Congress will need to update the financing of the Lifeline program.⁵² The Universal Service Fund fees that subsidize programs like Lifeline are levied on revenues of telephone carriers (and other voice service providers)—with costs often passed through as fees on a shrinking base of users.⁵³ As subsidies for essential communications technologies are expanded to include the internet, the Universal Service Fund fees should be updated to draw from the broad array of internet providers, at the levels needed to finance programs like Lifeline.

Target support to the recently unemployed. Based on the research on the relationship between high-speed internet access and unemployment, workers need to maintain access to high-speed internet service during periods of unemployment. As high-speed service provides more training and work opportunities, unemployed Americans (who may be income ineligible for Lifeline subsidies) need incentives and assistance to keep themselves and their families connected—especially during periods of acute financial stress when they must choose which expenses to cut and which bills to prioritize.⁵⁴ Recognizing that high-speed internet connections are critical to furloughed or unemployed workers, Congress in December 2020 created an Emergency Broadband Benefit to reimburse high-speed internet providers that affordably serve furloughed or unemployed workers—typically at up to \$50 per month—for the remainder of the COVID-19 public health crisis.⁵⁵ Postcrisis, Congress should consider extending support

to unemployed workers on an ongoing basis—even if less generous than the Emergency Broadband Benefit. At a minimum, Congress should consider extending time-limited eligibility for the Lifeline subsidy—or a new federal benefit of similar generosity—to workers who have qualified for unemployment insurance benefits to support job search or retraining and avoid families’ suffering a disruption in access.

Improve market competition for high-speed internet provision

Although modern internet service has not reached all Americans, the lightly regulated private market for high-speed internet service has given most people rapid innovation and service quality improvement with constrained cost growth. But the high fixed costs and sole ownership of costly-to-duplicate network infrastructure increases high-speed internet market concentration in many US areas not typically considered underserved, harming consumers.⁵⁶ Alternative technologies for delivering high-speed internet service—especially upgrades in the quality and coverage of wireless options—may ensure robust competition in the future. But for now, a number of moderate, common-sense steps can improve competition in high-speed internet markets.

Allow municipalities to offer high-speed internet service options. More than 20 states have banned or restricted municipalities from offering high-speed internet services, fearing that municipally owned or supported broadband networks would cause unfair competition and reduce long-run investment.⁵⁷ However, municipal broadband ventures to date show that, in certain settings and under certain conditions, they can drive service improvements on quality, affordability, or access—including improvements from private providers.⁵⁸ While municipal provision is a second-best alternative, having the option for municipalities to contract for, provide, or induce entry can drive more competition and avoid monopolistic behavior—particularly in communities with only one provider currently positioned to offer high-speed internet service.

Expand the pool of eligible participants and providers. Many federal programs that expand access to high-speed internet began under earlier technology, when voice telecommunication service was the primary concern. Although Congress and the FCC have expanded the technologies and providers that are eligible to participate, a holistic update of requirements, reducing barriers to participation, could increase competition and give more underserved Americans access to multiple options for high-speed internet.⁵⁹ FCC Commissioner Michael O’Rielly has described the burden on providers to qualify as eligible telecommunications carriers (ETCs) as “time-consuming and resource-intensive.” Reducing that burden in favor of pertinent but more narrowly relevant requirements, or eliminating entirely the requirements in some competitions that bidding entities be ETCs, could encourage more providers to compete for federal contracts or participate in federal competitions.⁶⁰

Improve the information available to policymakers and consumers. The Broadband DATA Act could provide policymakers at all levels with a more accurate picture of the state of US connectivity, helping policymakers direct federal investments and evaluate initiatives to extend affordable high-speed internet access. The FCC must move rapidly to implement the Act’s directive. However, the Broadband DATA Act did not go far enough to collect information to assess the cost and affordability of available services. Policymakers and businesses would benefit from a more accurate and detailed

understanding of how Americans are using the internet in their daily lives. Congress should fund more-detailed surveys on business and household internet service options, prices, purposes, and required devices to deliver a comprehensive, up-to-date understanding of the state, and importance, of consumer connectivity. Additionally, the FCC should encourage high-speed internet service providers to communicate the terms of their products transparently and clearly. More-aggressive promotion of the “Broadband Facts” consumer label standard the FCC created in 2016, whether through incentives for adoption or other means, could help consumers to demand better service and spur competition among providers on clearer grounds.⁶¹

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