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# DELIVERING BROADBAND TO ALL AMERICANS

AN NCTA ISSUE BRIEF



## DELIVERING BROADBAND TO ALL AMERICANS

In the last two decades, American consumers have witnessed enormous advances in the power and reach of Internet networks and in the choice of services provided over those networks. The key ingredient for this expansion and growth has been the extraordinary level of private network investment by private companies, which has produced consistent increases in the capacity and speed of fixed and mobile broadband networks. Collectively, all U.S. broadband providers have invested \$1.5 trillion in capital over the last twenty years to build out infrastructure and robust broadband networks. Cable providers alone have invested more than \$250 billion over those twenty years, and their networks now span more than 1,700,000 miles in total and include more than 490,000 route miles of fiber-optic cable, enough to circle the globe 19 ½ times.

### TRACKING CABLE'S INVESTMENT IN INFRASTRUCTURE

SINCE 1996, CABLE HAS INVESTED **OVER \$250B** IN CAPITAL INFRASTRUCTURE

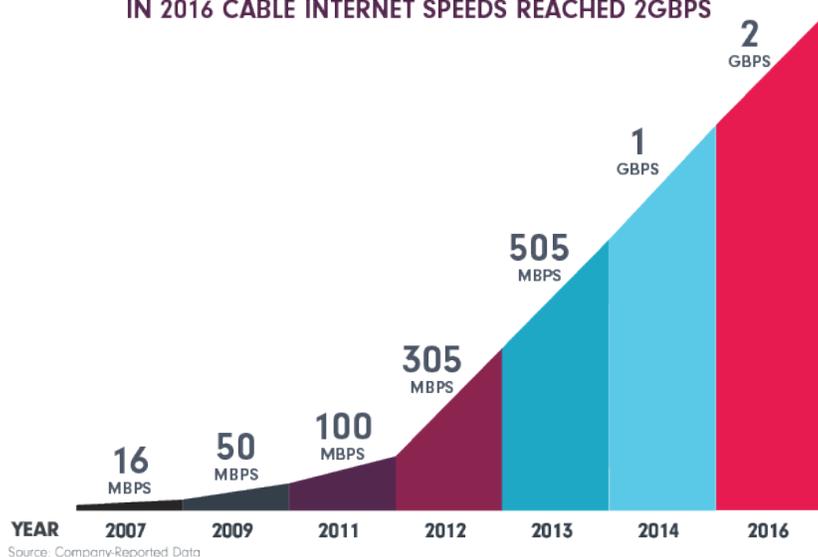


Cable's capital investments, which have exceeded \$16 billion in each of the last three years, enable cable broadband providers to double the capacity of their networks every 18-24 months and have resulted in a steady expansion in the geographic areas covered by those networks.

There also has been a steady improvement in the availability of high-speed broadband connections. In 2008, only about 16% of Americans had access to Internet service of 10 Mbps downstream. Today, over 95% of Americans can access a 10 Mbps downstream connection from at least one terrestrial ISP, 85 percent of U.S. homes are passed by providers offering broadband connections capable of 300 Mbps and faster speeds, and speeds keep growing.

## TRACKING CABLE'S TOP INTERNET SPEEDS

IN 2016 CABLE INTERNET SPEEDS REACHED 2GBPS



Moreover, current technology roadmaps demonstrate that these advances are ongoing and that continued private capital investment will produce even further gains in speed, capacity and reach as ISPs roll out new wired and wireless technologies.

Despite these achievements, there are still some parts of the country – most often in less dense, often geographically remote areas – where market forces alone have been insufficient to date to drive the deployment of terrestrial broadband networks. In this paper, we present our thoughts on the challenges we face as a nation in filling in broadband “gaps” in rural America, the shortcomings we have seen in traditional support mechanisms, and a blueprint for focusing public support mechanisms more directly on the goal of getting all Americans connected to the Internet.

### **THE CHALLENGE: CONNECTING ‘THE LAST 5 PERCENT’**

In contrast with traditional infrastructure, such as roads and bridges, which are nearly 100% government-funded, the steady growth of most broadband networks’ build-out has largely been supported by the ability of private companies to attract and deploy capital investment. For the vast majority of Americans, this has led to a remarkably rapid deployment of high-speed Internet access. But constructing a broadband network is a long-term, high-cost undertaking, and private companies making capital investments need to feel confident that their investment can generate returns necessary to justify the expense. That’s why, despite the unqualified success in the speed of buildout of broadband across America, some areas advance more rapidly than others.

In certain rural areas, lower-than-usual population density and often challenging geography means there are often higher risks associated with network investments. Many of the

major costs of building a broadband network scale proportionally with the distance required to reach end user locations, and a more densely populated area provides more potential customers per mile of network, meaning more potential revenue per mile of network. Often, those without access to high-speed Internet service live in areas with lower population density – or in geographically difficult to reach areas like mountainous regions or islands – so the last households to be connected are generally the most expensive to serve.

Because networks in these areas typically cost significantly more than those in densely populated areas but offer far less revenue in return, the potential return on the investment needed to build the network is often too low for a private enterprise to justify to its investors. When that happens, government subsidy programs can help bridge investment gaps, reducing the cost to the company to build the network and thereby making it profitable. The providers do, and should continue to be required to, invest their own money in the network to maintain it as they would any other, but meaningful help with construction costs to get over that hurdle to justify the investment is crucial to bringing high-speed Internet access to those currently without it.

In 2010, the National Broadband Plan noted this problem, observing that an “investment gap” of approximately \$24 billion was needed to provide an estimated seven million unserved households with 4 Mbps Internet connections, with close to 60 percent of that amount attributable to the last 250,000 homes of that seven million.<sup>1/</sup>



## EXISTING SUPPORT MECHANISMS: PAST CHALLENGES AND FUTURE OPPORTUNITIES

The challenge described above is by no means a new one. Both the Federal Communications Commission (“FCC”) and the Rural Utilities Service (“RUS”) have long had programs that subsidize rural telecommunications carriers, and in recent years those programs have been modified to support rural broadband networks.

<sup>1/</sup> Connecting America: The National Broadband Plan, <https://transition.fcc.gov/national-broadband-plan/national-broadband-plan.pdf> (“National Broadband Plan”) at 136-138.

The American Recovery and Reinvestment Act of 2009 (“2009 Stimulus Act”) gave funding to the National Telecommunications Information Administration (“NTIA”) for the Broadband Technology Opportunities Program (“BTOP”) and to RUS for the Broadband Initiatives Program (“BIP”) to expand broadband access in unserved or underserved communities, especially in rural areas. Since 2009, through this and its existing programs, RUS has dedicated nearly **\$11 billion** to broadband support. The BTOP devoted another **\$3.5 billion** in funding to spur broadband deployment. And the FCC’s universal service high-cost support programs added approximately **\$34 billion** more in subsidies in the same time frame – originally for voice communication and since November 2011, for broadband. Yet despite this heavy investment, the BTOP and BIP had limited success in encouraging or requiring providers to deploy broadband networks in areas where customers have no broadband service.

One significant obstacle to the success of broadband funding programs in the past has been the failure to ensure that funding actually goes to extend access in unserved areas. This problem has been further exacerbated by changing definitions of broadband that steer scarce resources away from those Americans most in need. Instead of concentrating their efforts on those with *no* access to broadband, programs have often allowed funding to flow towards improving speeds in already served areas.<sup>2/</sup> Funding also has been used in areas where unsubsidized providers already are offering service. Government subsidization of a competitor in a market that has attracted private investment not only is an inefficient use of scarce funding,<sup>3/</sup> but it also puts a thumb on the competitive scale which undermines future private efforts at building out broadband networks in high-cost areas.

Another recurring problem with past subsidy programs has been the lack of oversight of funding recipients by the agency charged with awarding the funding. For example, while RUS pledged that awards under the 2009 Stimulus Act would connect nearly 7 million Americans, by the end of fiscal year 2015 fewer than 300,000 rural households, businesses, schools, libraries, and other facilities were receiving new or improved broadband service. A 2015 investigation by Politico revealed that while RUS approved 320 projects,<sup>4/</sup> half of the projects that RUS approved never drew the full award amounts,<sup>5/</sup> and so they were forfeited.<sup>6/</sup> More than forty of the projects that RUS approved were never even started, leaving hundreds of thousands of residents in rural areas without the new or improved broadband connections they would have received. Moreover,

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<sup>2/</sup> Eisenach and Caves, Evaluating the Cost-Effectiveness of RUS Broadband Subsidies: Three Case Studies (Apr. 13, 2011), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1809002](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1809002).

<sup>3/</sup> RUS’s duplicative funding in the BIP program, for example, increased the predicted cost to make broadband available to every currently unserved household in the U.S. from the \$23.5 billion predicted by the National Broadband Plan – an estimate that assumed duplicative service was not funded – to \$87.2 billion. Eisenach and Caves, Evaluating the Cost-Effectiveness of RUS Broadband Subsidies: Three Case Studies (Apr. 13, 2011), [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1809002.8](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1809002.8)

<sup>4/</sup> USDA, RURAL UTILITIES SERVICE, BROADBAND INITIATIVES PROGRAM QUARTERLY REPORT AS OF 6/30/15 (2015), available at [http://www.rd.usda.gov/files/UTP\\_RUSBIPStatusReportJune2015.pdf](http://www.rd.usda.gov/files/UTP_RUSBIPStatusReportJune2015.pdf).

<sup>5/</sup> Tony Romm, *Wired to Fail*, POLITICO (July 28, 2015; 5:32 PM), <http://www.politico.com/story/2015/07/broadband-coverage-rural-area-fund-mishandled-120601>.

<sup>6/</sup> USDA, RURAL UTILITIES SERVICE, BROADBAND INITIATIVES PROGRAM QUARTERLY REPORT AS OF 6/30/15 (2015), available at [http://www.rd.usda.gov/files/UTP\\_RUSBIPStatusReportJune2015.pdf](http://www.rd.usda.gov/files/UTP_RUSBIPStatusReportJune2015.pdf).

even where funding was spent, because RUS used a flawed means of determining which households were unserved when awarding funds, its means of assessing the cost-effectiveness of BIP projects was also flawed, resulting in projects being funded at dramatically high costs per household.<sup>7/</sup>

In contrast, recent efforts by the FCC have sought to address many of these concerns and now provide a solid foundation on which to complete the job of extending broadband to unserved Americans. With the adoption of the Connect America Fund (“CAF”) in 2011, the Commission for the first time explicitly conditioned the receipt of funding on the delivery of broadband service to a specified number of locations in particular geographies. Moreover, the CAF explicitly precludes any award of support in an area that is already served by an unsubsidized provider. Pursuant to these sound policy principles, the Commission has committed roughly \$30 billion over the next several years to companies that have committed to deliver broadband to locations throughout the United States that are currently unserved.<sup>8/</sup>

## **A BLUEPRINT FOR COMPLETING THE JOB OF DELIVERING BROADBAND TO ALL AMERICANS**

The current push to provide increased infrastructure funding is a perfect opportunity to fix many of these ongoing issues and build on recent successes to provide high-speed Internet access to any remaining unserved locations in the United States. We recommend that new strategies aimed at advancing investment and the further deployment of broadband infrastructure be based on the following principles:

### **1. Let the FCC quarterback broadband support programs**

Congress should make the FCC its point-agency on all future broadband subsidies. As the expert agency responsible for advancing universal service, the FCC is best positioned to ensure public support is used in a thoughtful and focused way to reach unserved households. Moreover, as history has shown, other agencies have been repeatedly proven to be ill-equipped to effectively establish, manage, and track the results of a program of this magnitude. In contrast, the FCC’s recent experience implementing the CAF program suggests that it understands the importance of targeting support to unserved areas, rather than supporting subsidized overbuilds, and that it will provide better oversight, reporting and accountability for new rural broadband support programs. To the extent other agencies, such as RUS, continue to support broadband through existing programs, Congress should require that those agencies engage in regular coordination with the FCC and adopt similar oversight, transparency and accountability procedures.

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<sup>7/</sup> Nick Schulz, *How Effective Was The 2009 Stimulus Program*, Forbes (July 5, 2011; 2:02 PM), <http://www.forbes.com/sites/nickschulz/2011/07/05/how-effective-was-the-2009-stimulus-program/#6cd5143a7aba>.

<sup>8/</sup> See <https://www.fcc.gov/reports-research/maps/caf-2-accepted-map/>, identifying areas where carriers accepted Phase II support from the CAF to provide broadband service.

## **2. Identify the problem areas before you spend money to fix them**

Congress can avoid repeating the mistake of allowing money to be spent on subsidies before it confirms exactly where those subsidies are needed. The 2009 stimulus programs distributed billions of dollars in funding before completion of the \$350 million broadband mapping project that also was required under the law. This approach resulted in wasteful spending in many areas that already had broadband.

A necessary step to focusing on unserved areas is validating where those areas are. Yet, despite the fact that the FCC requires broadband providers to submit detailed, census block-level data on the areas they serve, twice per year, the FCC has failed to update the National Broadband Map for several years to reflect the most recent deployment data. As a result, the existing version of the National Broadband Map is not a reliable indicator of the areas of the country served by broadband.

Before spending new money, the FCC should ensure that it has an up-to-date, user-friendly map documenting where broadband already is available and where government funding already has been committed. Ongoing efforts to map out the unserved areas as part of the FCC's National Broadband Map should be completed before funding begins, and the maps should be updated regularly using the data the FCC obtains from broadband providers about their deployment. This will ensure that the government does not waste money subsidizing redundant networks, at the expense of those in areas most in need.

Going forward, Congress should similarly direct the FCC to consider how the National Broadband Map can be improved to identify where a broadband service provider has received funding or a commitment of funding from any federal or state broadband funding program, so that funds can be targeted even more closely in the future to the areas with the greatest need for funding.

## **3. Make delivery of broadband to unserved households the priority**

Congress must focus all its efforts on those who currently have no high-speed Internet access at all. As the FCC has made clear, any money that the government spends in areas that already are served is wasteful spending because it does nothing to fill these gaps and bring broadband to people that do not have it today. We hope Congress and the new administration will adopt a zero tolerance policy for subsidizing networks in areas where they already exist across all federal broadband support programs. Only by ensuring that money goes to construct facilities in unserved areas will the government be able to deliver universal broadband access.

Similarly, we should be wary of proposals that would rewrite performance thresholds to redefine today's served households as unserved and instead we should ensure that everyone is served before some receive upgrades. The FCC should examine which areas have "broadband" service available by reference to a common, rather than aspirational, speed. In this way, the Commission can ensure that the "unserved areas" qualifying for funding are those areas that truly have no meaningful broadband service. History tells us that when speeds are set at a higher level, the result is that funds are used to upgrade areas that already have an acceptable level of broadband, while the areas that are most difficult to serve remain unserved. Requiring the FCC

to examine this threshold speed periodically would ensure that funding continues to focus on bringing a modern level of broadband service to all areas of the country.

**4. Embrace alternative technologies in remote areas to promote technology neutrality and fiscal responsibility**

Some geographic areas are so remote or so sparsely populated that constructing wired broadband networks will not be an efficient investment of public funding. Making wired broadband available to 100 percent of homes is a laudable goal, but rather than blindly following an uneconomic policy of building wired access to every home, school, and business in the United States, an efficient subsidy program should also take advantage of wireless and satellite Internet access options where wired service is not economically feasible. While some have argued that these options are too expensive for many Americans, a consumer-driven voucher program supporting the consumer purchase of service by certain unserved households could provide immediate relief to those looking to connect to the Internet. Similar vouchers or coupons could also be made available to households which lie just outside existing broadband networks, to be used to pay for their individual line extension connections.

**5. Provide equal opportunities for all qualified broadband providers**

While awarding contracts through competitive bidding is a common practice in business, historically it has been absent from many FCC and RUS broadband subsidy programs, which have provided preferential access to incumbent telephone companies. Going forward, Congress should make sure that funding is available to all qualified broadband providers regardless of the delivery technologies that they use and whether they are an eligible telecommunications carrier or not under the Connect America Fund. The FCC recently has implemented competitive bidding in the CAF program, and in the future, this should be a mandatory element of every federal broadband subsidy program. Competitive bidding between as many capable providers as possible is crucial to ensuring the best return on the taxpayers' investment in these subsidy programs.

**6. Demand accountability in spending public monies to ensure that subsidies achieve their intended results**

The lack of accountability in federal support programs for broadband has been a matter of longstanding concern.<sup>9/</sup> Any broadband funding program must provide for accountability and transparency sufficient to enable the public to have confidence that its money is achieving the intended results. In particular, government agencies involved in broadband funding should require all funding recipients to satisfy, and report on their progress towards reaching, build-out requirements. Such agencies also should be required to maintain easily accessible websites that show who is receiving public money, how much they are receiving, when they received it, what

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<sup>9/</sup> See, e.g., OIG AUDIT REPORT 09601-4-TE, RURAL UTILITIES SERVICE BROADBAND GRANT AND LOAN PROGRAMS, U.S. DEPARTMENT OF AGRICULTURE, OFFICE OF INSPECTOR GENERAL, SOUTHWEST REGION (Sept. 2005); OIG AUDIT REPORT No. 09601-8-TE, RURAL UTILITIES SERVICE BROADBAND LOAN AND LOAN GUARANTEE PROGRAM, AUDIT REPORT, U.S. DEPARTMENT OF AGRICULTURE, OFFICE OF INSPECTOR GENERAL (Mar. 2009).

they are required to do with it, and where they are required to use it, and should track whether the providers receiving funding are accomplishing the required goals with the taxpayers' money.

## **CONCLUSION**

It is often said that broadband access changes lives, and that the type of connection to the world offered by high-speed Internet access is unparalleled. With broadband Internet, Americans have access to loved ones, to health care, to education, and to entertainment in ways that are otherwise impossible. The economic benefits of increasing broadband access, both to individual Americans and to the country at large, are beyond dispute.

The goal of ensuring that all Americans have an opportunity to enjoy high-speed Internet access has seen bipartisan support for nearly a decade. With the current focus on infrastructure investment, Congress has an opportunity to achieve that goal by learning from the mistakes of prior efforts and instituting reforms of the entire broadband construction regulatory arena. It can do so by focusing funding on efficient efforts that will provide high-speed Internet access to those who currently have none, to increase opportunities for providers to compete to serve these in-need consumers.