

# AMERICA'S

# DIGITAL DIVIDE

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**U.S. CONGRESS JOINT ECONOMIC COMMITTEE**  
Ranking Member U.S. Senator Martin Heinrich



## America's Digital Divide

Our economy is increasingly becoming dependent on access to high-speed internet connections.<sup>1</sup> Access to the internet brings unprecedented economic opportunities for users, especially for people living in remote areas, for whom the internet opens a window to the world. The internet, and access to it, has changed our world in such a profound way that for many people, life without it is unimaginable.

While most Americans are able to connect to the internet in some form today, many Americans can't log on at the high speeds needed to realize the full potential of the internet. Americans living in remote, rural, and tribal communities, in particular, tend to have less access to the high-speed broadband internet connections that many newer technological innovations require. There are also affordability divides that prevent many individuals from getting online or accessing adequate speeds at home.

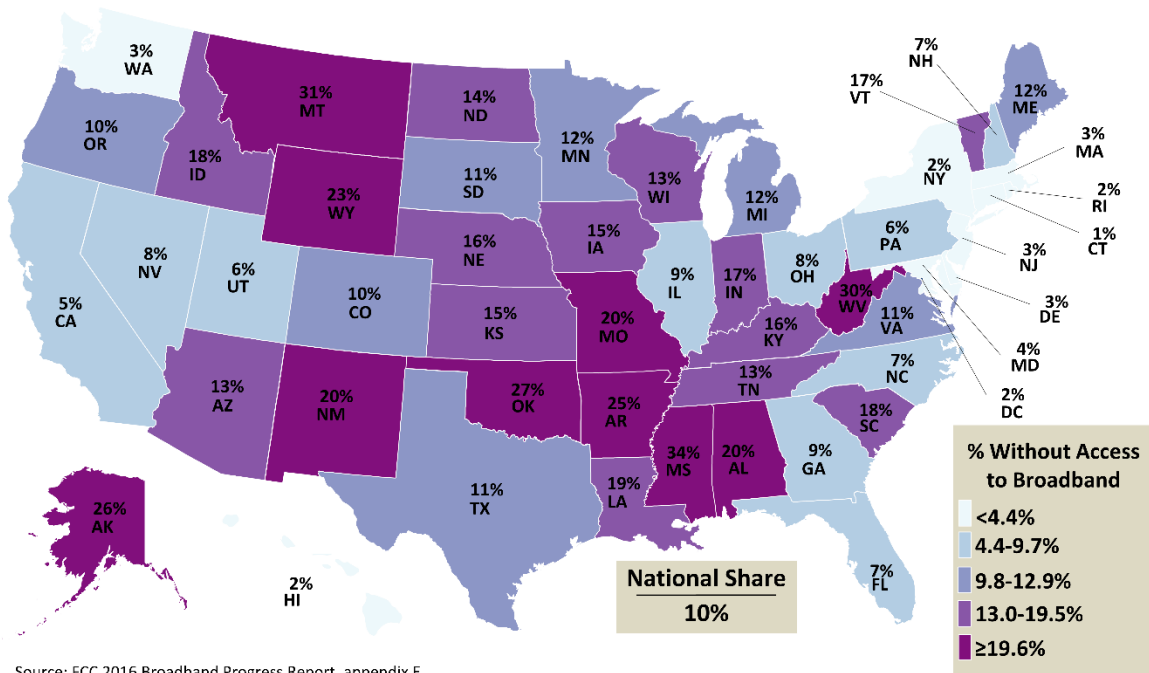
While broadband internet access has increased over time, there remains a digital divide in access to and adoption of high-speed internet. Closing this gap must be a priority, and will take a substantial federal investment to do.

### The state of access to high-speed internet

Access to high-speed internet has improved dramatically in recent years. Between the Federal Communication Commission's (FCC) 2015 and 2016 Broadband Progress reports, 21 million Americans gained access to broadband. There are still 34 million residents, though, that do not have at least one broadband provider in their community.<sup>2</sup>

Access varies widely, as well. While nearly all of Connecticut has access to high-speed internet, according to FCC data, more than one third of Mississippi's residents lack access. At local levels, the disparities get larger. In more than 200 counties, no one has access to broadband internet.<sup>3</sup>

## Residents Without Access to Broadband



Source: FCC 2016 Broadband Progress Report, appendix E

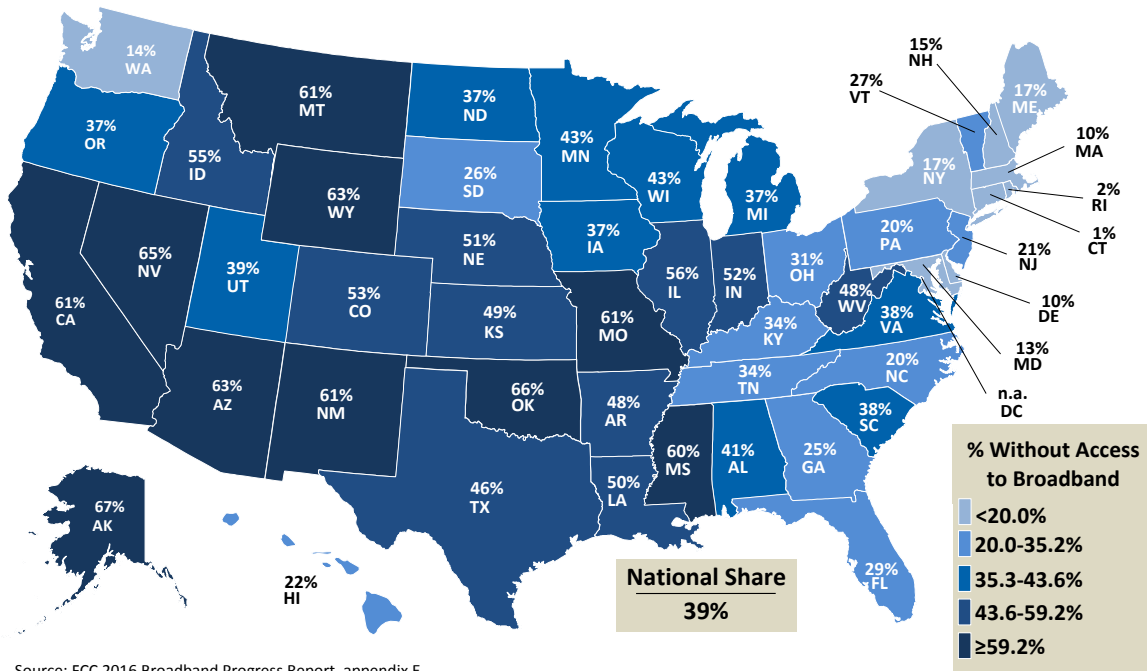
Note: Broadband is defined as fixed internet with download speeds of 25 Mbps or greater and upload speeds of 3 Mbps or greater; percent shown is the share of rural residents within the state that do not have access to at least one service provider that meets that definition; rural is defined based on 2010 census data.

### The urban-rural digital divide

The access problem is worse in rural America, where only 61 percent of residents have access to broadband internet.<sup>4</sup> This means that more than 23 million rural Americans cannot subscribe to a broadband connection in their home.<sup>5</sup> Access in rural areas varies drastically state to state, as well. In 15 states, the majority of rural residents do not have access to broadband.<sup>6</sup>

Among rural communities, those found in Indian Country are among those struggling the most to gain access to broadband. Communities in Indian Country are often in some of the most remote areas of the country, making the barriers to broadband access even bigger for the communities on these lands.<sup>7</sup> Compounding this, tribal communities often have trouble applying for federal grant programs that are intended to promote broadband access.<sup>8</sup> This results in low levels of access to broadband on tribal lands, with 7 in 10 rural tribal residents (1.3 million) lacking access to broadband.<sup>9</sup>

## Rural Residents Without Access to Broadband



Source: FCC 2016 Broadband Progress Report, appendix E

Note: Broadband is defined as fixed internet with download speeds of 25 Mbps or greater and upload speeds of 3 Mbps or greater; percent shown is the share of rural residents within the state that do not have access to at least one service provider that meets that definition; rural is defined based on 2010 census data.

### Barriers to broadband access

Most internet infrastructure in the United States is privately owned and operated. Because of this, whether or not broadband is extended to a particular community is typically a result of a simple calculation: whether the company installing facilities to provide internet service is able to generate enough revenue on internet subscriptions to cover their upfront costs and earn a profit. This calculation tends to favor investment in urban and suburban areas, where people are tightly clustered. In rural areas, the cost to extend a broadband line out to a remote community from the closest internet backbone connection is typically higher. Adding to this problem, there are fewer people to potentially subscribe in remote and sparsely populated communities. The result is that communities that are farther from population centers and less dense are less likely to have access to broadband internet.<sup>10</sup>

Another part of this calculation is projected demand. Companies may not consider installing expensive infrastructure if they lack confidence that consumers will subscribe to and use internet service. This concern can bias against investment in rural, older, and lower-income communities, where subscription rates tend to be lower.<sup>11</sup>

## Disparities in access across households

Access is one piece of the equation, but not the entire story. There are many people that live in areas where broadband is available, but still do not have internet in their homes. Twenty three percent of Americans report not having broadband in their homes—more than twice the rate that do not have access.<sup>12</sup> The survey does not define a speed, though, so it is likely that many of these connections do not meet the FCC’s definition of broadband (which requires download speeds of 25 Mbps and upload speeds of 3 Mbps). For this reason, the actual share of Americans without broadband in their homes is likely even higher than 23 percent.

There is a sharp divide based on income, where less than half of households with incomes below \$20,000 have home broadband subscriptions, while 92 percent of households with incomes over \$75,000 report having one.<sup>13</sup> Relatedly, there is a wide gap in broadband adoption by education level, with 4 in 10 of people that never completed high school lacking a subscription in their homes, compared with less than 1 in 10 of those with a bachelor’s degree.

*Less than half of households with incomes below \$20,000 have home broadband subscriptions.*

Older Americans are also less likely to report having broadband in their homes. About one third of Americans over the age of 65 do not have broadband in their homes, compared to less than a fifth of people under the age of 65.<sup>14</sup> Among the senior population, age, education, and income all play a role in the likelihood of a person using the internet. For instance, twice as many Americans between the age of 65 and 69 have broadband in their homes compared with those 75 and above.<sup>15</sup>

While younger Americans more often have internet at home, nearly 12 million children do not live in homes with a broadband connection.<sup>16</sup> This limits their ability to complement their school-based education with online resources at home, creating a “homework gap” that potentially impacts their ability to complete assignments or access resources about college opportunities.<sup>17</sup>

Racial disparities exist as well. White residents (82 percent) are more likely to have broadband in their homes than black (70 percent), Hispanic (74 percent), or American Indian (65 percent) residents.<sup>18</sup> A large part of this is likely due to wide socio-economic divides that exist between these groups. For American Indians, the rural access divide likely plays a large factor as well. These disparities can exacerbate income, educational, and health gaps that we already see between Americans. Americans that do not have broadband in their homes have less access to educational, health, and career-related resources. Researchers have found that unemployed

individuals are more likely to find a new job quickly if they have internet in their home, likely due to the ability to access online job search resources.<sup>19</sup>

### **Barriers to internet adoption**

For those that have access to broadband but do not subscribe, there are likely several factors at play. About one third of those without any internet at home cite a lack of interest or desire as the primary reason for not being connected. Another third cite a lack of perceived usability of the internet—in other words, they do not know how to use the internet or a computer, are disabled, or are uncertain due to potential security concerns. For one in five Americans that do not use the internet, though, the price of internet or a lack of a computer in their home are the main barrier.<sup>20</sup>

Interest in, ability to use, and necessity of the internet will likely increase over time, as more schools and workplaces integrate computers into Americans' daily lives, and as consumers adopt and come to depend on internet connected devices. The price barrier may be tougher to overcome. Part of the high cost of broadband internet may be due to a lack of competition—in many areas of the country, households have only one or two choices for high-speed internet. The Council of Economic Advisers found a correlation between the number of providers and internet use.<sup>21</sup>

### **Congressional action**

To ensure that all Americans have access to resources that can help them thrive in a digital world, Congress must focus on ensuring that all Americans have access to broadband internet and work to close the divides in at-home internet adoption.

The federal government already runs several programs intended to expand access to and adoption of broadband internet, including the FCC's Universal Service Fund and The Department of Agriculture's Rural Utility Service program. However, these programs have not yet completed the work of closing the digital divide.

Congress must prioritize rural broadband expansion in any national comprehensive infrastructure plan debated in the 115<sup>th</sup> Congress. It is unrealistic to expect the private sector to fully bear the costs of building out broadband infrastructure to many areas of the country where the cost calculation does not make sense for them. Congress must close this gap by taking on a portion of those costs. The 2010 National Broadband Plan estimated that \$24 billion of federal investment is necessary to bring all of rural America up to an adequate level of broadband service.<sup>22</sup>

Further, Congress needs to work on closing the gap in at-home internet usage. All Americans can benefit from having the internet in their homes, giving them better access to educational, health, and career-related resources. Bridging this gap will require improving competition to bring consumer costs down and expanding efforts to subsidize home broadband subscriptions.

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<sup>1</sup> Note: Unless otherwise stated, this report uses the terms high-speed internet and broadband to mean fixed internet connections that meet the FCC's definition of broadband (25 Mbps download speed, 3 Mbps upload).

<sup>2</sup> Federal Communications Commission. [2016 Broadband Progress Report](#). January 2016.

<sup>3</sup> JEC analysis of Federal Communications Commission. [2016 Broadband Progress Report](#). Appendix E data. January 2016. Note: this data may miss the fact that even though a neighborhood has a broadband provider, there may be homes or apartment buildings where the connections do not go within that neighborhood. Therefore, these figures may overestimate access.

<sup>4</sup> Federal Communications Commission. [2016 Broadband Progress Report](#). January 2016.

<sup>5</sup> Ibid.

<sup>6</sup> JEC analysis of Federal Communications Commission. [2016 Broadband Progress Report](#). Appendix E data. January 2016.

<sup>7</sup> Kruger, Lennard. "[Tribal Broadband: Status of Deployment and Federal Funding Programs](#)." Congressional Research Service. December 2016.

<sup>8</sup> U.S. Government Accountability Office. [Additional Coordination and Performance Measurement Needed for High-Speed Internet Access Programs on Tribal Lands](#). January 2016.

<sup>9</sup> Federal Communications Commission. [2016 Broadband Progress Report](#). January 2016.

<sup>10</sup> National Telecommunications and Information Administration. [Broadband Availability Beyond the Rural/Urban Divide](#). May 2013.

<sup>11</sup> Caumont, Andrea. "[Who's not online? 5 factors tied to the digital divide](#)." Pew Research Center. November 2013.

<sup>12</sup> JEC analysis of American Community Survey Data. 2015 1-year estimates. Table S2801.

<sup>13</sup> Ibid.

<sup>14</sup> JEC analysis of American Community Survey Data. 2015 1-year estimates. Table S2802.

<sup>15</sup> Smith, Aaron. "[Older Adults and Technology Use](#)." Pew Research Center. April 2014.

<sup>16</sup> JEC analysis of American Community Survey Data. 2015 1-year estimates. Table S2802.

<sup>17</sup> See Remarks of Federal Communications Commissioner Jessica Rosenworcel to the Hispanic Heritage Foundation, April 29, 2015, [https://apps.fcc.gov/edocs\\_public/attachmatch/DOC-333274A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/DOC-333274A1.pdf).

<sup>18</sup> Ibid.

<sup>19</sup> Council of Economic Advisers. "[The Digital Divide and Economic Benefits of Broadband](#)." March 2016.

<sup>20</sup> Zickuhr, Kathryn. "[Who's Not Online and Why?](#)" Pew Research Center. September 2013.

<sup>21</sup> Council of Economic Advisers. "[The Digital Divide and Economic Benefits of Broadband](#)." March 2016.

<sup>22</sup> Federal Communications Commission. [National Broadband Plan](#). March 2010.