



## A Connected Future: The Importance of Communications Networks in America Background for NGA Ahead of the Curve Podcast

The world is rapidly changing as amazing new advanced and connected technologies are integrated into our society, transforming our way of life and altering how businesses and industries operate. From how we heat and cool our buildings to the cars we drive, we are witnessing what some have declared the “Fourth Industrial Revolution.”<sup>1</sup> Advanced communications networks are in many respects the foundational infrastructure supporting this revolution.

The growing prevalence of high-speed communications networks has led to an unprecedented degree of interconnectedness and accumulation of information; giving rise to new industries and ushering in an era of dynamic innovation. However, a significant portion of the U.S population lacks access to high-speed networks and therefore the opportunities and benefits they offer. Improving service holds the key to transforming whole industries and by extension our society. In regions with deficient connectivity, new infrastructure investments and policies to facilitate deployment are necessary to capture the beneficial network effects of ubiquitous connectivity. Given the diversity of needs, topography and markets across the country, no single best approach to deploying broadband exists. Governors can play a critical role in promoting the deployment of communications networks to build a more inclusive state and lay the foundation for future growth.

By 2016, 92 percent of the U.S. population had access to fixed broadband at speeds of 25 Mbps/3 Mbps – the threshold download/upload speeds determined by the FCC at which user can originate and receive high-quality voice, data, graphics, and video.<sup>2</sup> Concealed within this statistic is that 30 percent of Americans living in rural areas lack access to comparable service. Price may be a limiting factor as only 53 percent of Americans currently subscribe to fixed broadband services. The latest generation of mobile broadband, known as mobile long-term evolution (LTE or 4G LTE), now offers connectivity speeds of 10 Mbps/3 Mbps to 87 percent of the U.S. This gap means roughly 40 million Americans lack access to high-speed mobile LTE services. A recent push to roll out fifth generation (5G) mobile technology, which promises significantly greater speeds, is underway, but has faced permitting challenges.

The digital divide discussion often focuses on disparities between urban and rural areas, however, the digital divide of the urban unconnected is no less critical. One study found unconnected urban populations represent nearly 80 percent of total unconnected citizens in the U.S.<sup>3</sup> The benefits of overcoming connectivity divides are substantial. For example, in the transportation sector, the National Highway Traffic Safety Administration found that 94 percent of serious crashes are caused by human error and amounted to over 35,000 fatalities in 2015.<sup>4</sup> Estimates suggest that a high-penetration of autonomous and connected vehicles reliant on advanced communications networks could eliminate human error from crashes, reduce emissions by 40-90 percent, cut travel time by almost 40 percent, and reduce delays by roughly 20 percent, saving \$447 billion annually.<sup>5</sup> Additionally, estimates for the energy sector found that an interconnected “smart” electricity grid could generate \$1.8 trillion in revenue for the US over a 7 year period, directly save consumers \$40-\$100 annually, smooth and reduce electricity demand, and indirectly save consumers \$50 per year.<sup>6</sup>

The benefits of access to high-speed connectivity extend beyond the transportation and energy sectors, enabling innovation and the delivery of goods and services across the public and private sphere in an increasingly connected society. Consequently, investment in broadband infrastructure has a multiplier effect, exponentially enhancing social and economic welfare.

Several state policy strategies can facilitate the deployment of communications networks:

- ✓ Designate a point person/agency for broadband deployment in the state, and set goals for expansion;
- ✓ Engage stakeholders and identify state property for the development of communications networks;
- ✓ Meet broadband needs of underserved communities; and
- ✓ Encourage state agencies or utilities to assess infrastructure efficiencies.

These recommendations are explored in greater detail in the forthcoming **Energy Innovation and Transportation Innovation Road Maps** published by the **National Governors Association Center for Best Practice**.

<sup>1</sup> World Economic Forum, *The Fourth Industrial Revolution: What it Means, How to Respond*, Jan 14, 2016

<sup>2</sup> Federal Communications Commission, *2018 Broadband Development Report*, (Washington D.C. February 2018) [https://apps.fcc.gov/edocs\\_public/attachmatch/FCC-18-10A1.pdf](https://apps.fcc.gov/edocs_public/attachmatch/FCC-18-10A1.pdf)

<sup>3</sup> IHS Markit, *The Urban Unconnected* (June 2017) <http://worldwidefix.com/wp-content/uploads/2017/06/The-Urban-Unconnected-White-Paper-FINAL-1.pdf>

<sup>4</sup> NHTSA.gov, “Automated Vehicles for Safety,” National Highway Traffic Safety Administration, <https://www.nhtsa.gov/technology-innovation/automated-vehicles-safety> (accessed May 31, 2018).

<sup>5</sup> Deloitte, *Wireless Connectivity Fuels Industry Growth and Innovation in Energy, Health, Public Safety, and Transportation* (January 2017) [https://api.ctia.org/docs/default-source/default-document-library/deloitte\\_20170119878479664c467a6bc70ff0000ed09a9.pdf](https://api.ctia.org/docs/default-source/default-document-library/deloitte_20170119878479664c467a6bc70ff0000ed09a9.pdf)

<sup>6</sup> Deloitte, *Wireless Connectivity Fuels Industry Growth and Innovation in Energy, Health, Public Safety, and Transportation* (January 2017) [https://api.ctia.org/docs/default-source/default-document-library/deloitte\\_20170119878479664c467a6bc70ff0000ed09a9.pdf](https://api.ctia.org/docs/default-source/default-document-library/deloitte_20170119878479664c467a6bc70ff0000ed09a9.pdf)