

# A Rural Broadband Strategy: Connecting Rural America to New Opportunities

Today, 23.4 million Americans in rural communities lack broadband internet access. The time is right to set a clear and ambitious but achievable goal: to eliminate the rural broadband gap within the next five years. Microsoft believes the U.S. can bring broadband coverage to rural areas within this time frame, based on a strategic approach that combines private sector capital investments in new technologies and affordable public sector support.

## A New Approach: TV White Spaces

New directional findings by The Boston Consulting Group suggest that a combination of technologies can substantially reduce the total cost of extending broadband coverage. Specifically, a technology model that uses a combination of the TV white spaces spectrum, fixed wireless, and satellite coverage can reduce the initial capital and operating costs by roughly 80 percent compared to the cost of using fiber cables alone; and by approximately 50 percent compared to the cost of current fixed wireless technology.

## Microsoft's Rural Airband Initiative

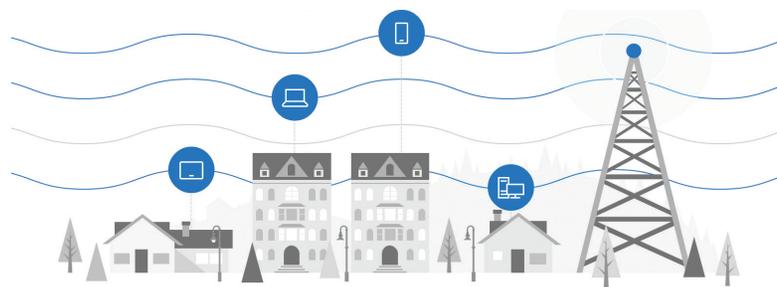
At Microsoft, we are prepared to invest ourselves and serve as a catalyst for broader market adoption of this new model. We are committed to three elements on a five-year basis:

- 1. Direct projects with partners:** Microsoft will invest in partnerships with telecommunications companies with the goal of bringing broadband connectivity to two million people in rural America by July 4, 2022. We and our partners will have 12 projects up and running in 12 states in the next 12 months. Our goal is not to enter the telecommunications business ourselves or even to profit directly from these projects. We will invest in the upfront capital projects needed to expand broadband coverage, seek a revenue share from operators to recoup our investment, and then use these revenue proceeds to invest in additional projects to expand coverage further.
- 2. Digital skills training for people of all ages:** Working through Microsoft Philanthropies, our Rural Airband Initiative will invest in helping to train people of all ages in these rural communities on the latest technology so they can use this new connectivity to improve education, healthcare, agriculture, and transform their businesses. Our first partnership under the Rural Airband Initiative will be a multi-year partnership with National 4-H Council—engaging America's largest youth development organization, 4-H, to provide digital literacy skills training to youth, as well as teen-led learning programs in rural communities.
- 3. Stimulating investment by others through technology licensing:** Our ultimate goal is to help serve as a catalyst for market investments by others in order to reach additional rural communities. We therefore are launching a new technology program to stimulate investment through royalty-free access to at least 39 patents and sample source code related to technology we've developed to better enable broadband connectivity through the use of TV white spaces spectrum in rural areas.

## A Vital Role for the Public Sector

While we believe the private sector can play the leading role in closing the rural broadband gap, the public sector also has a vital role to play. In particular, three related governmental measures are needed:

- 1. Use of Spectrum:** The FCC needs to ensure the continued use of the spectrum needed for this mixed technology model. Specifically, it will be important for the FCC to ensure that at least three channels below 700 MHz – the so-called TV white spaces – are available for wireless use on an unlicensed basis in every market in the country, with additional TV white spaces available in smaller markets and rural areas.
- 2. Infrastructure Investments:** In addition, federal and state infrastructure investments should include targeted funds on a matching basis for the capital investments that will best expand coverage into rural areas that currently lack broadband access today. These funds should be made available for use by multiple technologies on the basis of the most cost-effective available, including TV White Spaces, fixed wireless, and satellite usage.
- 3. Data Collection:** Finally, there is a need for improved data collection about rural broadband coverage. The FCC can help by accelerating its work to collect and report publicly on the state of broadband coverage in rural counties, thereby aiding policy makers and the private sector in making targeted investments.



## Rural America: On the Wrong Side of the Digital Divide

In urban America, we have thankfully become accustomed to ongoing capital investments to expand broadband capacity in areas that already have broadband coverage. But the time has come to expand this coverage to the rural areas that lack it entirely. As a country, we should not settle for an outcome that leaves behind over 23 million people living in rural America. To the contrary, we can and should bring the benefits of broadband coverage to every corner of the nation.

## The Rural Broadband Gap

While the majority of Americans take broadband for granted, 23.4 million people living in rural areas of our nation lack an adequate internet connection, which means they are unable to take advantage of the economic and educational opportunities enjoyed by their urban neighbors. Real progress to close the rural broadband gap has plateaued in recent years. High costs, the absence of new and alternative technologies, and market and regulatory conditions have all hampered efforts to expand coverage. This is now changing, thanks to recent advancements in technology, newly adopted standards, business model innovations and a growing demand for a broad range of cloud services.

## The Benefits of Broadband and Cloud Computing

Advancements in technology are rapidly transforming how we work, communicate, access information and educate our children. Powered by cloud computing, these new capabilities are driving economic growth and innovations that weren't possible a decade ago. Whether it is connecting small businesses to new markets, improving healthcare, creating new opportunities in education or supporting innovation in agriculture, cloud computing brings real social and economic opportunity. But today, millions living in rural communities across America lack the critical connection to the wealth of opportunities that the cloud presents: a broadband internet connection.

## The Right Technology in the Right Places

TV white spaces is expected to provide the best approach to reach approximately 80 percent of the underserved rural population, particularly in areas with a population density between two and 200 people per square mile. Satellite coverage is expected to be the most cost-effective solution for most areas with a population density of less than two people per square mile, and fixed wireless for most areas with a density greater than 200 people per square mile. This mixed model for expanding broadband coverage will likely bring the total national cost of closing the rural broadband gap to roughly \$10 billion.

