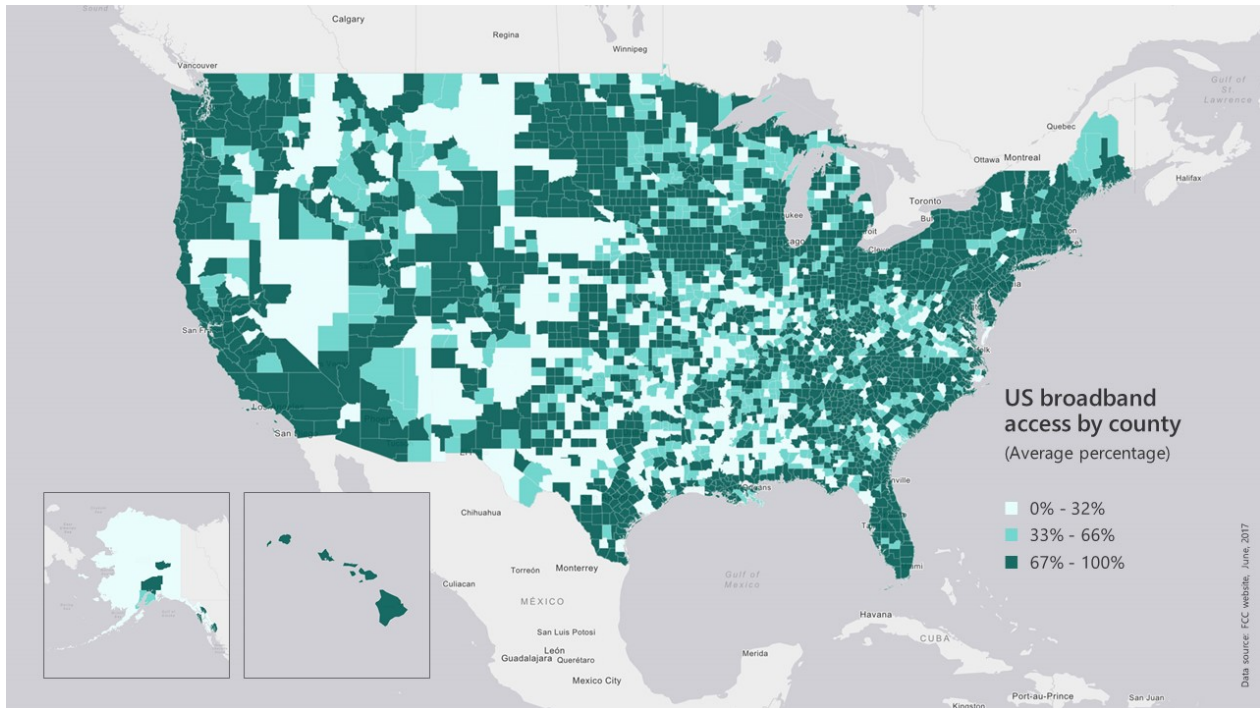


Broadband for a Country Man

Broadband and internet access issues for Americans in rural areas



The image above visualizes broadband access in America. Areas in America that are stereotypically known to be rural, like areas that contain ranching and farming, show more areas of 0%-32% broadband access (Smith).

Presented by: Zachery Rich

3 August 2021

Problem

The Coronavirus outbreak has shown many issues throughout the world that aren't health related. Two of those issues are broadband and internet connections for people living in rural areas. Due to living in what Texans call "hill country", I am used to dropped calls, loss of radio connection, and even going miles and miles with little to no internet. Throughout the west, many Americans experience these issues. The reason the Coronavirus has surfaced these issues is because of the use of telehealth conferences. According to the U.S. Dept. of Health and Human Services (HHS), telehealth can be defined as "the use of electronic information and telecommunication technologies to provide care when you and the doctor are not in the same place at the same time" (HHS). The main issue with telehealth is no physical diagnosis from doctors, only the ability to be diagnosed by symptoms. The other major issue with telehealth is the lack of internet or smart devices for many low-income and rural Americans. Places like libraries have always given other resources besides books, ebooks, and movies, they give internet access too. As shown in figure 1, libraries will rent or give free internet access to anyone who asks. But that poses two questions now, what about privacy for your telehealth, and what about those without library access?

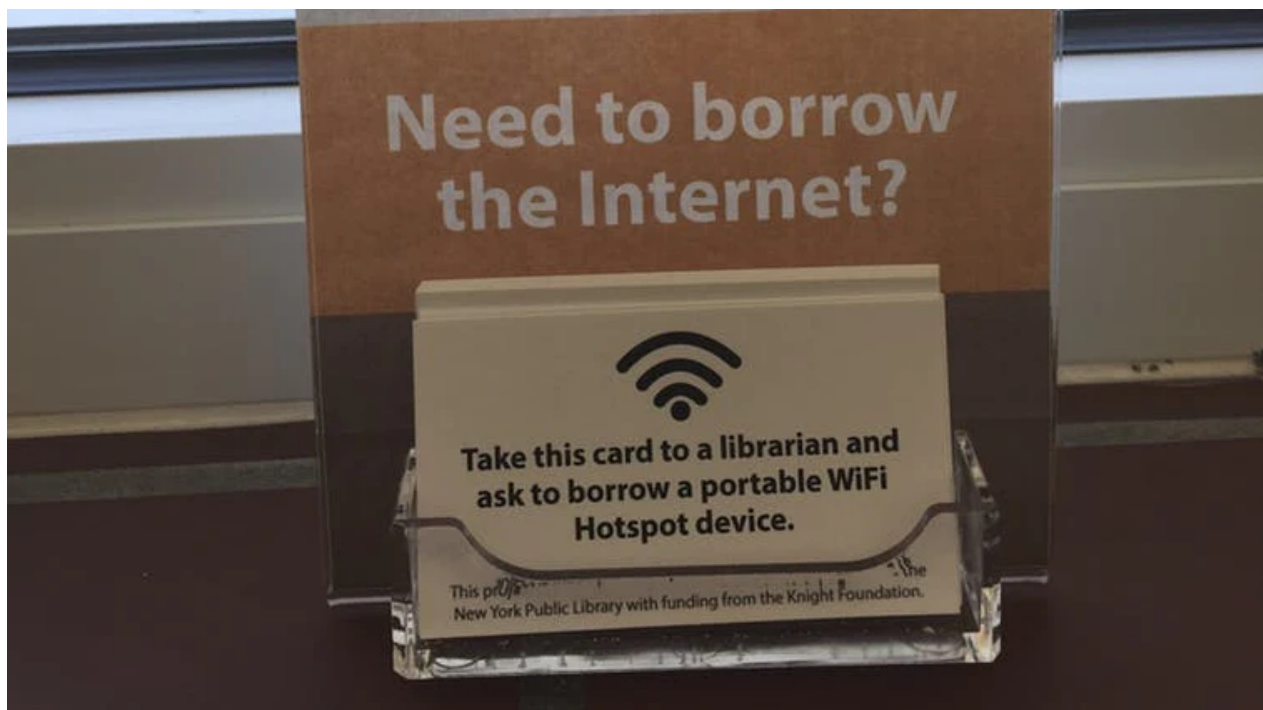


Figure 1: Internet access cards from the New York Public Library

The issue at hand is rural areas with no internet and no efficient way of getting to an area with internet access. With doctor offices and schools closed, how does a person with no internet carry on with their lives as they would normally? Their children get no education and if they get sick or injured, they have no way of getting better.

Solutions to these problems have started developing, at a high cost to the consumer. Satellite systems like SpaceX's Starlink have begun attempting to bring internet access to anyone

with a Starlink satellite dish around the world. That sounds nice right? Wrong. At first glance this is an amazing project that intends to bring the entire world up to speed, internet speed that is. There are many issues with this project at the moment. Internet access from Starlink can only be achieved on a clear day, so if it rains or even if it's cloudy, your internet speed is hampered or even removed entirely. On top of that, according to many Americans, this system is overpriced and not worth the price.



Figure 2: Starlink satellites shown flying above Earth visible in the night sky. A large Starlink satellite dish is shown on the ground. (Ralph)

Now, for those without internet access from where they are or are unable to afford unreliable and underwhelming satellite internet, and hopeless to find a doctor or school to send them and their kids to, what are they left to do besides wait? So far, nothing. Through the development of 5G from top phone companies, many new phone and internet antennas have been built in areas that originally had little to no connection. More affordable and with higher speeds, many Americans turn to companies like Verizon to grant internet access to those that don't have any.

My solution to this internet deficit is to be proposed to Hans Vestberg, CEO of the second largest U.S. telecommunications company, Verizon.

Solution

While top tier telecommunication companies like Verizon and AT&T already have satellites with access to the entire globe, they lack ground stations to connect to those satellites. To show the importance of these ground stations, in 2015 American Tower, a ground station realtor, bought 11,324 communication antennas from Verizon for \$5.056 billion dollars. That shows that each antenna station was bought for approximately \$446,000 each. As a competitor to telecom companies, SpaceX's Starlink is working with Microsoft Azure Orbital's ground stations

to bring satellite internet to the world.

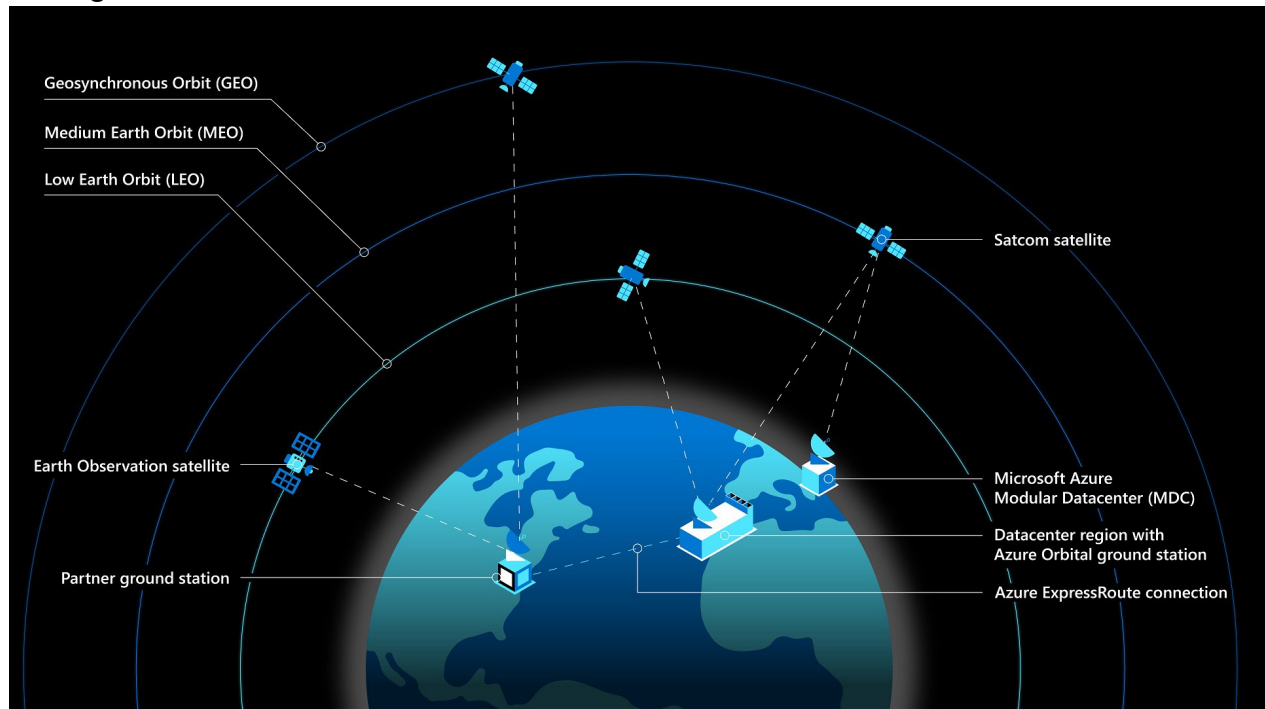


Figure 3: Diagram of satellite systems from Microsoft Azure Orbital.

The construction and deployment of Verizon or American Tower-owned ground stations would be cheaper on the company, easier deployment, and cheaper on the consumer. Federal stimuli have been developed to help the deployment of some of these ground stations already. With additional federal funding and a brief rise in consumer costs, it is possible for telecom companies like Verizon to deploy ground stations in rural America. With the deployment of new ground stations, broadband can be available in all of America.

Republicans like Mitch McConnell reject the distribution of federal funding to telecom companies to expand broadband. In 17 states, laws are already in place to prohibit government funded broadband, many of which are led by anti-competition companies like Comcast. This allows for a more rigid consumer cost rather than switching constantly to compete with other companies. Republicans that are in agreement with the new bipartisan infrastructure bill agree with Mitch McConnell that rural areas need better internet. McConnell just believes the government should not meddle with commercial issues.

While many people don't want government-funded broadband, states with rigid anti-competition companies higher their rates with no consequences due to the fact of their consumers having no other companies to turn to. With these prices inflating, like Comcast's prices by 16% from 2016 to 2020, many companies are pulling out of rural areas because customers cannot afford heightened prices. With broadband funded by new government infrastructure bills, companies can go back into rural areas without having to charge consumers so much.

Benefits

Telehealth And School

With the new ability in rural areas to access the internet due to additional telecom ground stations, consumers can now attend school themselves or enroll their children in online school. Since the closure of doctor's offices due to Covid-19, patients and doctors were forced into a Zoom-frenzy of appointments. Without access to the internet, this wouldn't be possible. Another issue not possible without the internet is school when all physical schools are closed or if there are none near you. Many rural Americans turn to homeschool to educate their children. One main school available to all Americans is Connections Academy. Although it is school from home, it is not your standard homeschooling. It has a rigid curriculum like other public schools. With no physical papers and entirely online, rural parents can enroll their children in school with this program.

With broadband, high internet speeds allow rural Americans that have internet access, but without broadband, they can't effectively hold video conferences. While some rural Americans already use technology, others without technology will soon adjust to the new digital age. The new digital age has essential societal needs all over the internet.

Job Creation

With new telecom towers being built and jobs now being available for people in rural areas, thousands of jobs are going to be created. From engineers and construction to teachers and doctors, telecom ground stations create a wide array of jobs. Engineers will work to deploy these new ground stations, construction workers will build the stations and roads leading to them, and jobs will be created due to newfound internet access.

Civil engineering jobs are in demand right now through companies like Tower Engineering Professionals. Those jobs will be needed more than ever to build the new towers. General jobs from teachers and doctors to internet technicians will also be created to help with the rise in consumers in the areas not currently covered by broadband. Those jobs would cover areas with new consumers as well the people in those newly covered areas will be accepting those positions. With the rise in new jobs, an income from external (to rural areas) sources, the economy in rural and small towns, which may speed up the equality from the current digital divide.

Conclusion

With the implementation of new ground stations in rural America with help from government stimulus, rural Americans could have all the digital activities as every other American. It could be telehealth appointments, schooling for their children, or research for local activities, recreational or something like an online almanac. This is a necessity to Americans with

the growing issue of the digital divide and its causes like digital illiteracy and a divide of production efficiency between standard farmers and commercial farming. Hans Vestburg, if Verizon were to deploy ground stations in rural America, you could help clear that digital divide.

Works Cited

Ralph, Eric. "SpaceX VP SAYS Starlink Is Almost Ready to Revolutionize in-Flight Internet." TESLARATI, 10 June 2021,
<https://www.teslarati.com/spacex-starlink-in-flight-internet-revolution/>

Rich, Todd, Veterans Affairs Human Resource Officer, San Antonio. Personal Interview. 24 July 2021

Smith, Brad. "A Rural Broadband Strategy: Connecting Rural America to New Opportunities." Microsoft On the Issues, Microsoft, 10 July 2017,
<https://blogs.microsoft.com/on-the-issues/2017/07/10/rural-broadband-strategy-connecting-rural-america-new-opportunities/>.

Strover, Sharon. "How to Fix the Rural Internet Problem." Industrial Equipment News (IEN) 18 Jan. 2018,
www.iem.com/product-development/news/20989231/how-to-fix-the-rural-internet-problem.

"What Is Telehealth?" Telehealth.HHS.gov, U.S. Dept. of Health and Human Services, 19 May 2021,
https://telehealth.hhs.gov/patients/understanding-telehealth/?gclid=Cj0KCCQjw6NmHBhD2ARIsAI3hrM2Noek3FOzpBwkMJrjiq7AuDV_VFSxUB4YHE7VW1dVgJDXoeYiulYIaArEgEALw_wcB.