

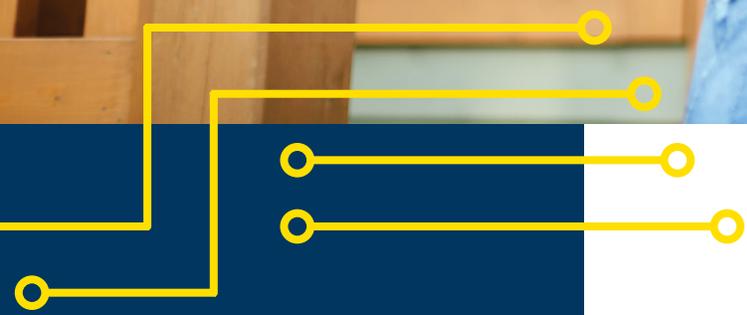
THE STATE OF BROADBAND

in Louisiana & Mississippi

AND WHAT POLICY MAKERS CAN DO ABOUT IT



**MISSISSIPPI CENTER FOR
PUBLIC POLICY**



Executive Summary

As COVID-19 continues to affect much of the world, people's daily activities have shifted online. But while urban areas generally have access to fast and affordable internet, many rural areas are left with fewer, often expensive and unreliable options. This gap is known as the digital divide.

This paper examines the digital divide in both Louisiana and Mississippi using data provided by the Federal Communications Commission (FCC) and the National Telecommunications and Information Administration (NTIA).^{1,2} It notes that while more than 90 percent of the urban population in both Louisiana and Mississippi have access to at least one provider of broadband internet, less than 65 percent of those in rural areas of both states have equivalent access.

The reasons for this disparity are complex, but the data reveals an interesting explanation: many people in Louisiana and Mississippi are not online because they don't believe they need to be.

Better availability and adoption of broadband internet will require multiple solutions. One of the most important will be led by technology created by the private sector. Technologies like fixed wireless internet, low-orbit satellites, and 5G offer the potential for reaching rural areas at lower costs than burying miles of fiber.

Taking advantage of these technologies will require policies that remove barriers to their expansion. Reducing costs and deployment times for technologies like 5G will lead to faster deployment making these technologies available to consumers more quickly.

This paper lays out the following solutions to for policy makers to speed up deployment and adoption.

1. **Work with the Federal Government on Broadband Mapping**

With the federal government not expected to complete their new maps until 2022, understanding what parts of the state most in need of high-speed internet is key for lawmakers.

2. **Reduce Costs and Application Times for 5G Infrastructure**

5G offers immediate wireless solution to areas without access, making it easier to install the equipment will speed up availability to consumers.

3. **Reduce Fees and Related Costs for Government Right of Ways**

Government fees often make it difficult to reach rural areas, reducing these fees will make rural areas more desirable for investment.

4. **Open State Infrastructure for Deployment**

States have access to key infrastructure in rural areas, partnering with the private sector can lead to deployment in once unreached areas.

5. **Pass "Dig Once" and "One-touch Make Ready" Policies**

Internet deployment costs can be greatly reduced when taking advantage of state construction.

6. **Standardize taxes and recurring fees**

Broadband equipment should be taxed at the same rate regardless of what kind of internet access it is providing.

7. **Work on education and adoption**

Partnering with civil society groups can increase adoption of the internet and spur greater investment in previously unserved areas.

When the history of this moment is written, new technologies and the changes they brought will be noted, not the government policy. That said, there are important policy levers lawmakers can pull to help close the digital divide without spending billions. This paper is a guide for lawmakers to understand which levers to pull and which to leave untouched in this area.

Introduction

Broadband internet has been described as the highway of tomorrow. As the COVID-19 pandemic has revealed, it is much more than a highway. It is a lifeline. Reliable high-speed internet has enabled access to critical services, such as health care via telemedicine; K-12 and university education via distance learning; and even continued economic productivity via remote working. All of these technologies existed prior to the COVID-19 pandemic, but physical distancing has greatly accelerated their growth and adoption³.

Yet millions of Americans do not or cannot access these technologies. This problem is known as the 'digital divide'.

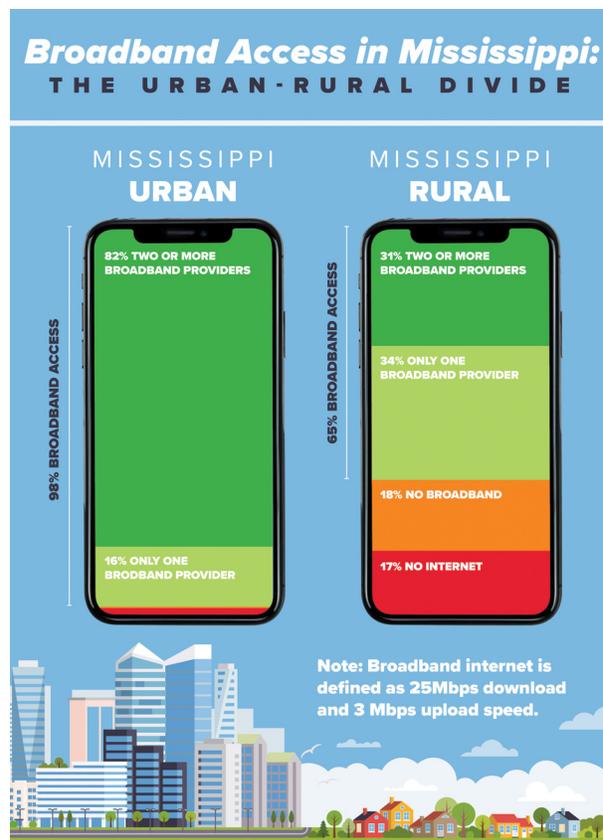
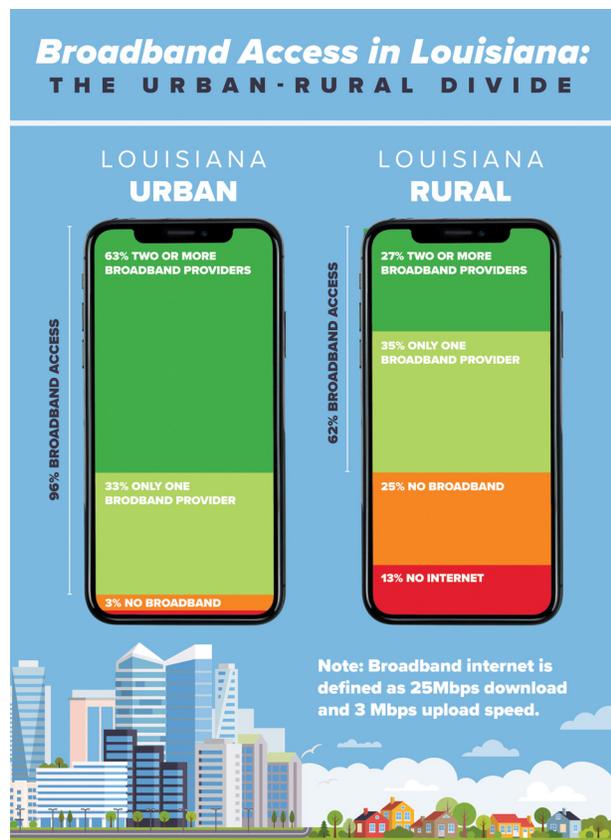
Larry Irving, former head of the National Telecommunications and Information Administration first coined the term digital divide. Although it traditionally describes those who cannot access the internet, today it better describes those who cannot take advantage of applications which require broadband-quality internet.

Although there is ambiguity in the precise definition of the

digital divide, we do know it's closing. In 1995 a little less than 1 percent of the world's population was online, about 44.4 million people⁴. In 2018, roughly half of the world's 7.5 billion people were online⁵. In 1998, just over 15 percent of Louisianans and 10 percent of Mississippians were online. Now nearly 80 percent of the population in each state is online.

This vast improvement in the connectivity of the world wouldn't be possible without substantial investment by the private sector in the building blocks of the internet. Even wireless mobile devices, responsible for a large amount of the world's connectivity, often require substantial investments in towers and cables to carry the data.

In the United States, \$1.6 trillion of private investment has been deployed to expand wireline, wireless and cable internet delivery since 1996⁶. With this level of investment, it's no wonder we have seen an explosion in both connectivity and speed. Average speeds were just 5 Megabits per second (Mbps) in 2009. As of September 2020, were more than 160 Mbps^{7,8}.





Increases in the number of people connected and the speeds at which they can connect has improved the quality of life for users, but that isn't the only significant benefit.

Even in the early days of the internet, commerce flourished. Businesses could reach more customers through websites such as eBay or their own webpages. But as the internet has gone mobile, entirely new economies have been created. The gig economy and companies like Uber couldn't function without connected mobile devices.

The internet is more than just commerce of course. COVID-19 has highlighted how crucial many of its other functions are. Physical distancing meant millions of people couldn't go into work, attend school or see their doctor. Due to the massive increase in connected Americans, these disruptions were not as bad as they would have been just 20 years prior. Approximately one in three Americans are engaged in telework⁹. Schools did their best to shift to online learning and keep students on track. Patients are interacting with their doctors via telehealth more than ever before. While these services will continue to grow with more internet access and digital literacy, it is nonetheless a great improvement from where Americans would have been in previous years.

But there are connectivity gaps, primarily in rural areas. Rural America has been particularly hard hit over recent decades as people, jobs and opportunities have migrated to urban centers. Now that the world relies on internet connections more than ever, these areas are at risk of falling further behind.

Since the pandemic started, lawmakers at all levels of government and across both political parties have become acutely aware of broadband connectivity issues. Much of the discussion around closing the digital divide has revolved around spending billions of dollars to provide internet service to unserved or underserved areas. But the government simply spending money on infrastructure will not close the digital divide.

The history of the internet and its expansion is far more than just the history of government involvement. Innovations in the communications sector have been breathtaking over the past 30 years. When Gordon Gekko took a call on his Motorola brick phone in Wall Street, the technology seemed extravagant. Today, hundreds of millions of people own smartphones that can browse the internet, take high-quality pictures and exchange emails. Just as private sector innovation has made mobile phones widely accessible, so can innovations like 5G, fixed wireless and low-orbit satellites make high-speed internet accessible to everyone.

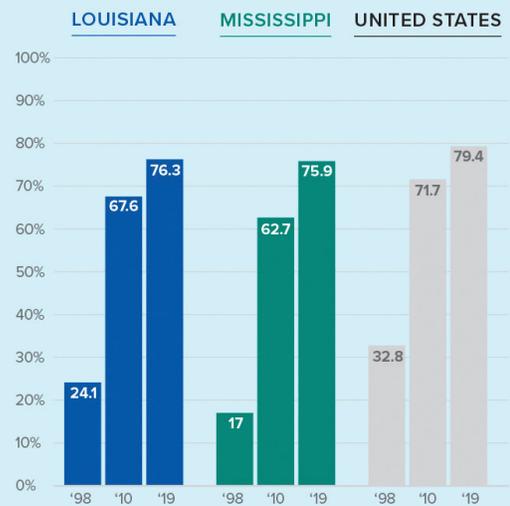
As indicated above, this paper is a guide to help lawmakers understand which levers to pull and which to leave untouched in this area. In the first section, the paper employs available government data to paint a picture of what parts of Louisiana and Mississippi have access to internet connections and who takes advantage of them. Subsequently, the paper will highlight some available technology to close the connection gap. Finally, it will examine the role government regulation plays in broadband and conclude with suggestions for state lawmakers to close the divide.

Mobile and Total Usage

Mobile Internet Use (2019)



Total Internet Use (1998-2019)



SOURCE: NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION

NTIA SURVEY DATA

While the FCC maps which geographic areas have access to connections. They also don't have sufficient information about how and why people are using the internet. The National Telecommunications and Information Administration (NTIA) has been conducting surveys on Americans' relationship to the internet since the late 1990s. This provides longitudinal data on connectivity, as well as socioeconomic data like age and income.¹¹

Home internet usage, while up nearly seven-fold from 1998, lags behind mobile internet usage by nearly 20 percent.

Almost 9 in 10 Americans accesses the internet via mobile compared to 7 in 10 via home internet.

Total internet usage, both mobile and home, correlates with income. As of November 2019, households earning over \$100,000 had a usage rate 21 percent higher than households earning less than \$25,000.

Age is also a major predictor of internet usage. Of people aged

15 to 65 in November 2019, more than 75 percent are online. Of those 65 and older, it was 64 percent.

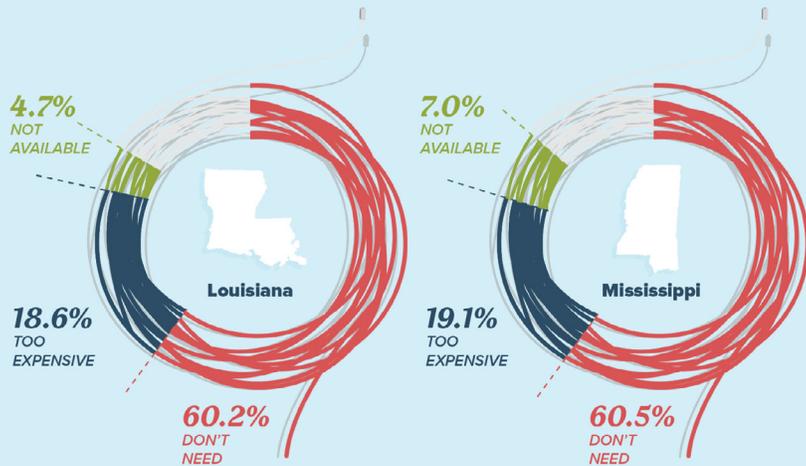
WHY AREN'T PEOPLE ONLINE?

The NTIA data gives us a good sense of the characteristics of who is online and how they are getting there. What about for those not online? It's typically been assumed that people aren't online due to lack of connections available to them. There is certainly a large portion of those living in rural areas who lack meaningful access to the internet. But survey data shows that many people across Louisiana and Mississippi don't see a need to be online. This lack of demand can lead to lower availability and higher costs.

This data was collected prior to the COVID-19 pandemic, which likely would change some of the results, but the data still provides important insights.

Sixty percent of Louisianans and Mississippians who are not online say the number one reason they aren't online is because they

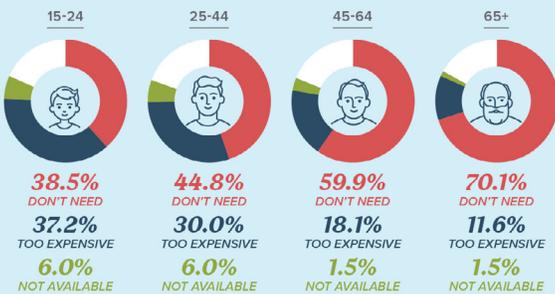
Why aren't people online?



By Income



By Age



don't need to be. This is consistent with national averages in the survey.

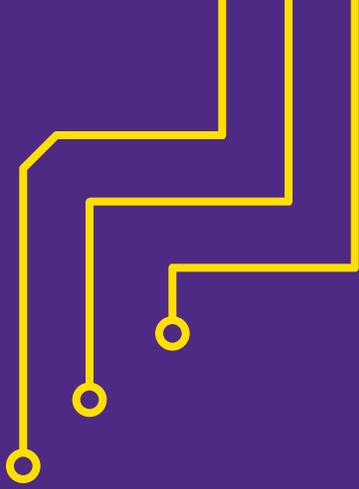
The survey answer of 'too expensive' is the second most common reason with between 18 percent and 19 percent of responses. More than 20 percent of those earning less than \$50,000 said internet was too expensive. This supports other data showing that internet use is at least somewhat correlated to higher incomes.

'Not available' trails a distant third with 4.7 percent in Louisiana, 7 percent in Mississippi and 3.2 percent nationally saying it's the primary reason they are not online.

Those who say they don't need' to be online tend to be older. More than 70 percent of those over the age of 65 say they don't need to be online. Just under 40 percent of those between the ages of 15 and 24 give the same reason. In other words, people's relationship to the internet is often linked to demographic factors.

This survey data provides key insights for policy makers. It shows that lack of need and cost are major factors for why people aren't connected, rather than only a lack of access. Furthermore, a lack of interest is likely driving a lack of availability. If a company knows that rural hard to reach areas aren't interested in paying for internet, they are unlikely to spend precious resources to reach them. Finally, while internet prices have decreased and mobile connections have made the internet more accessible than ever, poverty is likely a major factor in lack of connections in both Louisiana and Mississippi.

SOURCE: NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION



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POLICY MAKERS SHOULD CONSIDER THE ROLE OF TECHNOLOGY IN CLOSING THE DIGITAL DIVIDE

As lawmakers consider ways to make the internet available to all Americans, many believe this means fiber running to every home. But even if that were possible, low adoption rates and the cost of running these networks make it far from an ideal solution. Even if the areas without fiber connections were identified and subsidies given, the goal of universal connectivity would likely remain unrealized.

Mobile internet might have better success in bridging the digital divide. With over 85 percent of people using mobile internet across the country (a higher proportion than those using the internet at home,) built-in device connectivity seems to be a real selling point. While fiber is still the building block of our wireless networks, consumers have demonstrated a preference for wireless connectivity.

Look at how American leadership in the 4G revolution changed our relationship with technology. Not only did the American economy grow by billions¹², but tens millions of Americans now have access to high speed internet from devices in their pockets. The incredible growth in wireless internet was not driven by government spending, but rather demand from consumers for faster wireless internet for their new generation of smartphones. While government policy in freeing up spectrum was crucial, ultimately the private sector that facilitated this growth. Had the government decided to prefer wired connections, it's questionable whether America would have led in 4G technology.

With this example in mind, it is crucial for policy makers to be technologically neutral when it comes to closing the digital divide. One technology is unlikely to serve as a panacea, but a combination of these technologies could close the gap to the point that it scarcely exists anymore. Policy makers should familiarize themselves with these technologies and remove barriers to speed up their advancement.

5G

The fifth-generation mobile network, better known as 5G, is now available across America. While no network has completed its buildout and it is currently limited to major population centers, the areas in which it is available have seen speeds in excess of 100 Mbps — faster than many wired connections in homes across the country. This technology means lag-free video chatting and high-definition movie downloads in seconds, not minutes.

Wireless technology depends on a few factors to work effectively. Many base stations that send out 5G connections need to be connected to the internet through fiber. For policy makers, appropriate wire policy will have an important impact on wireless availability.

The other key resource is spectrum. Spectrum is simply the frequencies that wireless signals use to transmit. 5G requires certain spectrums in order to carry all the information back and forth with high speed and low latency.

One version of this technology relies on small cells, roughly the size of pizza boxes, to be deployed over relatively small urban areas. This is because the spectrum used to transmit at 5G speeds cannot travel over large distances and must go from small cell to small cell to reach devices.

Small cells are not the only future of 5G. Wireless carriers Sprint and T-Mobile recently merged into the newly formed





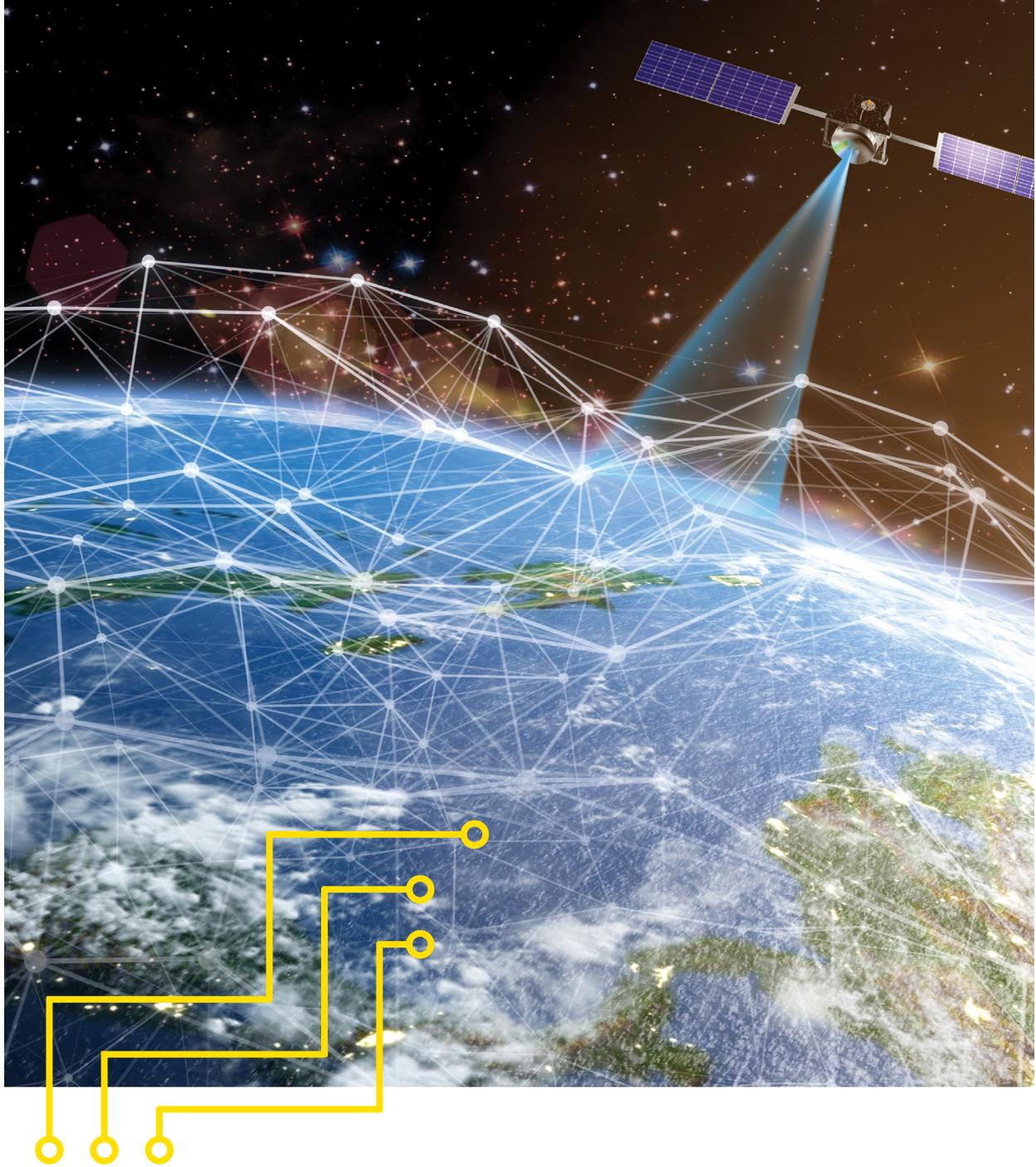
T-Mobile. The logic behind the merger was a combination of the spectrum holdings of both companies. Sprint held incredibly valuable parts of the 2.5 Gigahertz spectrum which is known as mid-band spectrum¹³. This mid-band provides a sweet spot in terms of both speed and latency, making it incredibly valuable for 5G. Meanwhile T-Mobile held low-band spectrum, which is helpful for broad coverage, although the speeds are not as fast. This combination of spectrums can lead to broad coverage at 5G speeds. In fact, as part of the merger conditions, T-Mobile agreed to cover 97 percent of the U.S. population with 5G in three years and cover 99 percent of the U.S. population with 5G in six years¹⁴.

This combination of 5G coverage will be crucial to connecting Americans in both rural and urban parts of the country. If the promised speeds and coverage materialize, many of those on small budgets will be able to connect their devices to lightning-fast networks without fear of running over data caps. Those in rural areas can likewise count on fast speeds without the expensive ‘last mile’ costs of running fiber cables to the home.

Fixed Wireless

Fixed wireless is another technology that may help solve the digital divide. It transmits internet from a wireless tower over spectrum to a receiver connected to the home. The receiver takes that signal to a modem, where it connects the rest of the home. A typical signal can cover homes up to about 5 miles away.¹⁵ Fixed wireless doesn’t require running cables to every home and the equipment isn’t expensive to install.

However, fixed wireless speeds currently top out at around 50 Mbps and service is susceptible to bad weather. But as 5G technology improves, the potential to deliver 5G quality speeds with fixed wireless connections will also improve. T-Mobile currently serves more than 50,000 rural customers with fixed wireless, while AT&T serves 800,000. Mississippi is also home to C-Spire, the largest privately held wireless carrier in the nation and sixth largest overall. Apart from their 5G service, C-Spire also offers fixed wireless internet to tens of thousands of consumers in Mississippi, helping to close a part of the digital divide caused by lack of access¹⁶.



Satellites

As 5G from low orbit satellites becomes a realistic possibility, no technology holds more promise for blanketing the United States with broadband. These satellites can theoretically beam down internet signals strong enough to penetrate the atmosphere and weather events, meaning no lost service because of bad weather (which can be a problem with satellite-based TV). Due to the spectrum utilized, these signals have low latency. This means meaning the time for data to be sent and decoded is small. High latency internet prevents applications like video chat or online gaming from functioning properly.

Companies like SpaceX are already testing this technology – in western Washington state, the Hoh Tribe was connected by one of these satellites¹⁷. SpaceX recently received nearly \$900 million in funding from the FCC to provide internet access to previously unserved areas, signaling confidence by the company and FCC that satellite will play a key role in closing the digital divide.¹⁸

Satellite connections may be the final frontier when it comes to reliable, high-quality internet across the globe. While it may seem like science fiction, satellites are already here.

ROLE OF GOVERNMENT IN REGULATION

As with 5G and other technological innovations, the private sector will no doubt be the driving force in closing the digital divide. Even so, government regulations can either significantly hinder or speed up deployment of crucial infrastructure to close the digital divide.

The government's role in communication goes back to the U.S. Postal Service, when the Constitution specifically granted the federal government the right to deliver mail. As mail was often sent across state lines, the Founders believed it was under the purview of federal government. This same mindset has applied to new communication technologies as well. Telegraph

and telephone lines cross not only state but also international borders. Likewise, radio waves and cellular communications don't stop at political boundaries.

States and even local governments also play a crucial role in telecommunications regulation, especially when it comes to physical infrastructure. They have jurisdiction over zoning and the placement of equipment, whether it's telephone wires, cell phone towers or small cells for 5G. Both entities have a role in crafting policies to make it easier for the private sector to close the digital divide.



EXISTING STATE FRAMEWORKS

Louisiana

One of the most harmful regulatory structures to internet deployment is treating broadband like a utility. Although this paper will not wade into the net neutrality debate, utility-style regulation has been shown to decrease infrastructure investment¹⁹.

While broadband services don't formally come under the purview of the Louisiana Public Service Commission (LPSC), which regulates cable television, telephone and electricity, there is some overlap. One requirement mandates allowing telecommunication services access to telephone poles as long as there is spare capacity. Given that much of Louisiana is swampland, these poles often are key to getting fiber to homes and businesses. Regulation of rights of way, or who has access to various pieces of public infrastructure to run cables, is frequently discussed at the commission.

The LPSC also sets guidelines for the bundling and unbundling of services such as telephone, cable and internet and subsequent rate changes. There has been a push to put more internet regulation under the LPSC but so far, such calls have wisely been ignored. While the state government in Louisiana doesn't have an overly burdensome structure, the level of involvement from the LPSC does raise some concerns.

Utility style regulation of the internet is not the only mistake governments make in an attempt to expand access. Often local governments will start their own government-owned broadband networks (GONs). They usually end up with little to show for the investment and mountains of debt.

Louisiana has attempted to nip this problem in the bud with its Local Government Fair Competition Act. This law dictates the steps and procedures local governments must follow when deciding whether to create an internet service provider (ISP). It also prevents cross-subsidization of broadband from municipal power companies. This is an important taxpayer protection as many GONs rely on cross-subsidization to keep their internet business afloat, as seen with the Lafayette GON²⁰. Finally, when deciding on a provider, localities must adhere to antitrust laws, hold a public hearing on the topic, contract a consultant to conduct a feasibility study and share the results of said study in two further public hearings²¹.



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Mississippi

Mississippi takes an even lighter approach to regulation of the internet by their Public Service Commission, even going so far as to proactively fight off regulation. As Miss. Code Ann. 77-3-3 (d-iii) states, “Broadband services are not considered a public utility, and therefore are not subject to the jurisdiction of the Public Service Commission.” This light-touch regulation is a positive part of Mississippi law. As a result, many decisions on internet infrastructure are delegated to the local level.

In addition to a relatively friendly regulatory environment for broadband, the state treats broadband equipment expenses as business investments, exempting them from certain taxes.

This allows for lower capital costs for ISPs and the customers they serve. It also ensures that government sales tax charges on capital costs do not lead to a hidden “double tax” on broadband users when they pay sales tax on their broadband bill. In general, Mississippi’s current regulatory policies are friendly to the free market expansion of broadband.

LOCAL FRAMEWORKS

Franchise Fees

When Congress passed the Cable Communications Policy Act of 1984 it set out rules for the cable industry in regard to how they interacted with local governments.

The act requires that all cable operators obtain a cable franchise agreement, which is conferred by the local franchising authority (LFA), in order to provide service in a locality²². These LFAs could charge fees to cable operators as a way to cover the costs of making the rights of way available. These fees were capped at 5 percent of the operator’s gross annual revenue from providing cable services to the residents of the area.

The requirement to obtain a cable franchise agreement from a LFA is still in place, but both Congressional laws and FCC guidance has been updated since 1984.

The Cable Television Consumer Protection and Competition Act of 1992 prohibited exclusive LFA agreements with cable companies to prevent governments from stifling competition in the industry. In 1996 Congress further deregulated the industry, allowing telecommunications companies such as AT&T and Verizon to provide cable TV services.

Although LFAs have authority over the cable TV aspect of these networks, they lack authority over the broadband part of those networks²³. This has brought issues to the surface as many “cut the cord” and stop paying for cable TV services. And while franchise fees were originally designed to cover costs localities faced, today they mostly fund other programs.

To protect cable providers from being weighed down with costly and excessive agreements with from localities, the FCC implemented a rule to prevent the use of



in-kind charges in LFAs. Examples of in-kind charges include free or discounted cable services, consultation fees and costs to create public access channels, to name a few. These charges were ways for localities to work around the federally mandated 5 percent statutory cap. If a cable franchise agreement includes an in-kind contribution, it now counts against the 5 percent cap.

5G at the Local Level

New technologies, such as 5G, have introduced friction between local governments and telecommunications companies. 5G small cells, which are about the size of pizza boxes, must be placed in close proximity to the devices using the connection they provide. This means that hundreds, if not thousands, of such small cells often have to be placed in areas getting 5G coverage.

Cities such as Houston and Indianapolis have adopted friendly small cell deployment policies, leading to faster deployment from more providers. But as local franchise fees decline, some localities are attempting to use the installation of small cells to make up some of that lost revenue. These higher costs and regulatory hurdles have slowed 5G deployment.

Wanting to tackle the problem of the high cost of deployment, the FCC recently went through a rulemaking and instituted a “shot clock” that capped the amount of time a municipality has to decide on small cell applications. The new rule also caps costs²⁴. Municipalities now have 90 days to decide on new structures and 60 days for pre-existing structures. Costs are capped at \$500 for up to the first five small cells on an application, \$1000

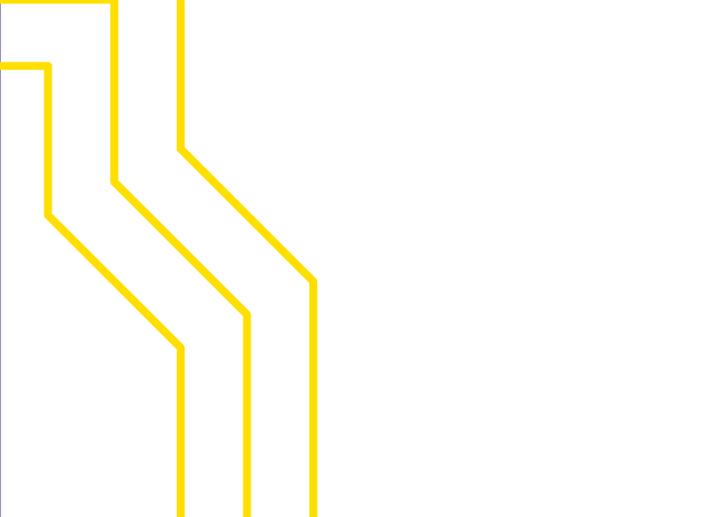
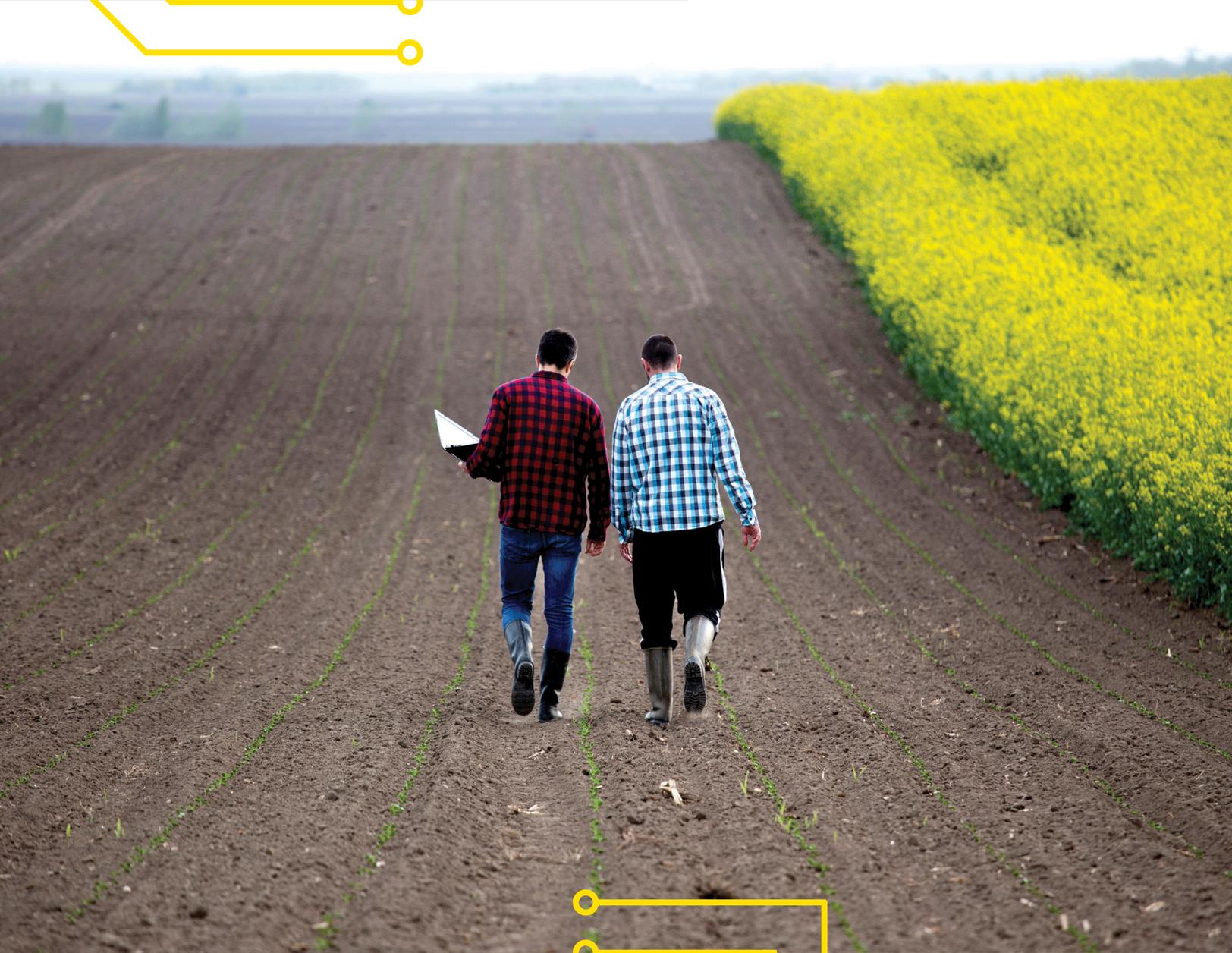
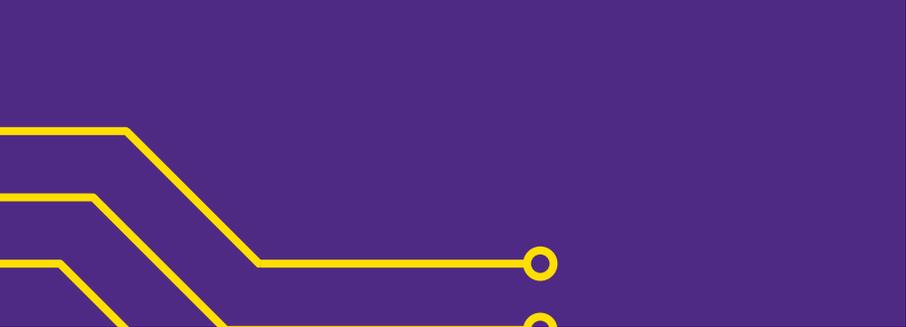
for non-recurring fees for new pole attachments, and \$100 for each small cell after the first five.

Although this order was challenged in court, the 9th Circuit Court of Appeals recently upheld the rule, meaning it will almost certainly remain in place. This rule will significantly reduce the costs of 5G deployment²⁵.

Costs are not the only factor contributing to deployment delays. Aesthetic concerns also play a major role and are often subject to fierce debate at city council meetings. While these concerns are often well addressed, another issue that has slowed the deployment of 5G at the local level is the question of how 5G might impact health.

Like electricity, radio and cell phones before it, 5G is subject to a variety of health claims, which tend toward conspiracy. One must only watch any random city council hearing about 5G to hear claims that 5G is responsible for everything from cancer to neurological diseases to COVID-19. It’s important that lawmakers know these claims are not supported by scientific studies. Health concerns should not override the real need to speed up 5G deployment to close the digital divide²⁶.

Local and state lawmakers should do all they can to lower the costs of 5G deployment. This means only allowing municipalities to charge for costs they incur for installation and shortening the approval process.



Seven Policy Recommendations for State Lawmakers

The dramatic improvements in connectivity over the last two-and-a-half decades have been driven by private, not government, investment. Understanding where to invest, much less how to run a complex internet network, is a task ill-suited to government. But state lawmakers can update their regulatory structure to remove barriers to infrastructure deployment. Every dollar not spent on infrastructure or compliance costs is more money that can be invested to improve service and reach new customers. States can also partner with private industry to collect better data on the digital divide and increase digital literacy skills to increase adoption. States should view their role as removing barriers and partnering with the private sector, rather than acting as a substitute for it.

1. Work with the Federal Government on Broadband Mapping.

Tackling a problem requires quality data to understand it first. The digital divide is no different.

This paper utilizes government data that provides some clues to the status of connections across Louisiana and Mississippi, but as discussed earlier, the data has flaws. Often, populous areas of a parish or county will have an abundance of internet or connectivity options while areas outside the population corridors do not. The data does not always reflect this.

The FCC is in the best position to collect this information as private companies can report without fear of giving up important information to their competitors. This data can then be aggregated and used by policy makers to address areas in their state most in need of connections. The federal Broadband DATA Act passed by Congress in 2020, mandates that the FCC work on improving their current maps but the FCC has suggested they won't be done until 2022.

States can also play a role in improving this data. After all, they have local knowledge that a federal agency does not. Some states have even taken it upon themselves to create their own broadband maps²⁷. Georgia, for example, has worked on a state map that is soon to be completed.

This endeavor will enable state policy makers to obtain the information they need to make better decisions about broadband deployment. Louisiana and Mississippi should do likewise.

2. Reduce Costs and Application Times for 5G Infrastructure.

Previously this paper has already highlighted the promise of 5G in connecting more Americans with speeds that dwarf what most currently have access to. The FCC has removed some of the barriers with the 5G Fast Plan²⁸. This plan capped deployment fees on small cells and created a shot clock which limits the amount of time localities have to review infrastructure applications. But more can be done at the state and local level.

The rules set out by the 5G Fast Plan are only minimum standards on cost and deployment review time. States and localities may lower the costs and time of deployment as they see fit depending on the power states have over local governments in a given state. Localities are generally best situated to deal with aesthetic issues, which often cause the significant delays and pushback from local communities.

Addressing these issues is far from trivial. For example, San Jose, Calif. attempted to charge \$3500 per small cell and as a result had no deployment until 2018, though this would now be impermissible due to FCC rules²⁹. Larger cities know that higher fees may cause delays, they also know that 5G deployment will still happen due to their population density. But every dollar spent in urban areas many mean fewer funds are available to deploy this technology in less densely populated areas.

Of course, the future for 5G is not all small cells. Existing cell phone towers will also play a key role in the appropriate infrastructure as companies like T-Mobile expand their 5G network across the nation and place their equipment on existing structures. While the FCC is proceeding with its 5G upgrade order to streamline this process across the country³⁰, states can modernize their rules to allow 5G infrastructure to be installed more easily on existing structures.



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Allowing access to state infrastructure could be the difference between areas being connected or being left behind.”

3. Reduce Fees and Related Costs for Government Right of Ways.

Some of the largest costs faced by ISPs are not labor and materials, but fees paid to governments for the right of ways to deploy equipment. Louisiana charges \$5,000 to deploy cable in the right of way of a state highway. This cost is incurred even if the cables are simply going under the highway to reach across the street. If there are only a few businesses or homes on the other side, providing access might suddenly become an economic impossibility.

Other states likely have multiple right of way fees that are similar to Louisiana's highway fee. State lawmakers should work to identify these fees and either reduce them or end them entirely.

Other expenses, like pole attachment fees, may also drive up the cost of broadband deployment. Many of these costs are regulated by public service commissions or related bodies. Reducing the cost to attach infrastructure such as a small cell or cable to a utility pole as well as making poles available for attachment will likely lead to more infrastructure deployment.

4. Open State Infrastructure for Deployment.

States can go further than simply reducing fees on rights of ways. Another solution is to attach or connect through state infrastructure like roads and bridges. This infrastructure isn't usually available for private companies, but it is often the only infrastructure in rural areas and therefore perfect for reaching them. Service towers can be equipped with communications equipment that doesn't interfere with the signals of emergency dispatches or other state communications. Fixed wireless technology is well poised to take advantage of such opportunities. Allowing access to this kind of infrastructure could be the difference between areas being connected or being left behind.

5. Pass “Dig Once” and “One-touch Make Ready” Policies.

Even though government fees and barriers increase the cost for deployment, substantial expense still exists outside of those fees. Digging up roadways can cost tens of thousands of dollars, especially over larger areas. The average cost of laying fiber cable is \$27,000 per mile, and it's been estimated that 90 percent of that cost is excavation of a roadway³¹.

A “dig once” policy would allow for ISPs to lay nodes containing fiber cable underground during unrelated road construction. Minnesota and Utah are among the states which have implemented such policies with great success. Cities such as San Francisco have also implemented this policy and saved approximately \$50,000 of fiber laid using “dig once” policy³². Unfortunately, just 12 states have taken it up³³.



Similar to dig once, “one-touch make ready” policy allows utility poles to be made ready to host a variety of telecommunications equipment. One-touch make ready allows, companies to attach small cells, fiber, or fixed wireless without incurring costs to prepare the poles for the equipment.

Louisiana recently implemented a dig once policy through Senate Concurrent Resolution 35. This resolution urges and requests the Louisiana Department of Transportation and Development to implement a dig once policy. Since the resolution was only enacted in 2020, the results of the legislation aren’t yet known. The resolution also urged and requested the Department of Transportation and Development to determine what other assets are available for “broadband internet lines.” The Department shall give a report in March 2021 and the success of the resolution will be better understood at that time³⁴.

6. Standardize taxes and recurring fees.

It’s a standard economic principle that taxing a good or activity will result in a lower supply of it. This logic applies to broadband equipment. States have various approaches to taxing wireless, wireline and cable equipment. Equipment is often taxed at the sales tax rate. Thus, Louisiana has the highest broadband equipment tax rate in the nation at 10.02 percent. Others tax this equipment as a business input, meaning it’s taxed at a different rate, or not at all. For example, Mississippi taxes wireless and wireline equipment at 1.77 percent but cable at 7.07 percent³⁵. States should treat broadband equipment as a business input to lower taxes, or at a minimum, they should ensure that equipment is taxed at the same rate across the board.

Franchise fee agreements are also ripe for reform. Once used to cover the costs to local governments for installing cable, they are now used as a source of revenue. These costs make it less attractive for new entrants to lay cable and increases costs to consumers. Missouri has contemplated limiting these franchise fees to 5 percent of the first \$20 of a cable bill, rather than the entire bill³⁶. This would bring the fees more in line with costs to the localities, rather than simply being used as a revenue source.

7. Work on education and adoption.

Although it may seem strange to those of us who use the internet every day, the NTIA data reveals that many people are not online because they don’t choose to be. Other people who do have access aren’t online at home because of the cost. Lack of devices may also be a factor. This has become clear as many schools, during the COVID-19 pandemic, worked with parents to ensure students had devices to connect to the internet as well as a connection to use.

No doubt, it is not the job of government to provide a device to every resident. Nonprofit organizations can help address this need. Likewise, groups that serve senior citizens can be important partners for increasing digital literacy.

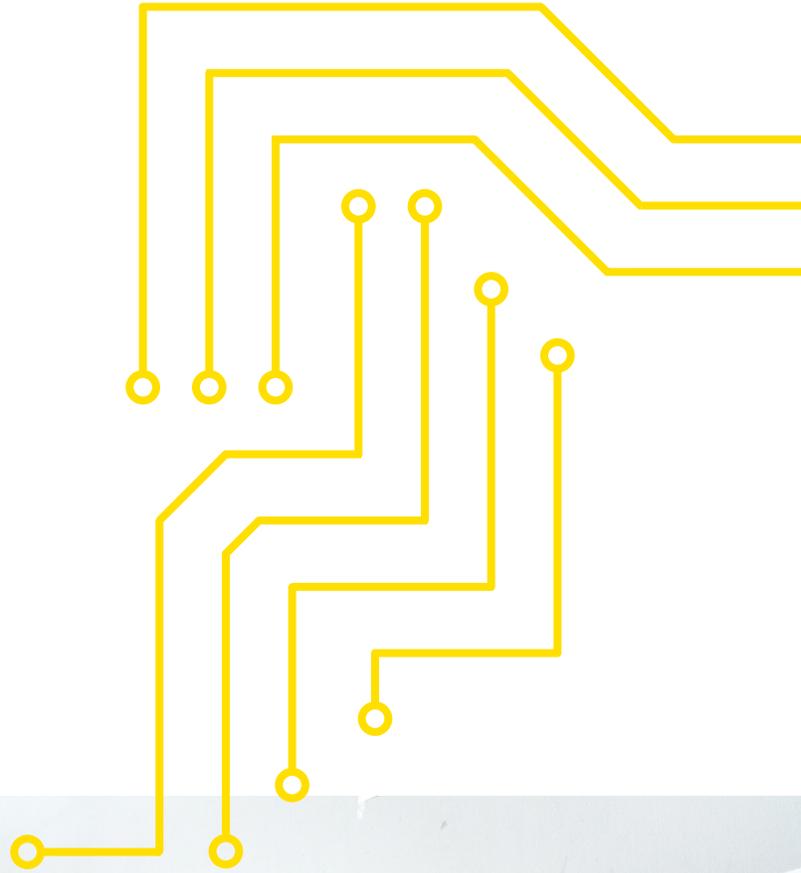
Increasing the adoption rate will not only get more people connected, it demonstrates demand in rural areas. This will, in turn, make it more profitable for companies to provide service in these areas, expanding deployment and creating a virtuous cycle. As in so many cases, knowledge is power.

Conclusion

COVID-19 has highlighted the need for internet connectivity. In fact, it is now a paramount concern for many lawmakers. This interest has created an opportunity to enact significant policy changes that can aid in closing the digital divide, but also increased the risk of costly and ineffective mistakes. Lawmakers need to understand the current regulatory environment for broadband deployment, the nature of the problem and what solutions are likely to work for their state. As diverse as this country is, no two states will close their digital divide in the same way.

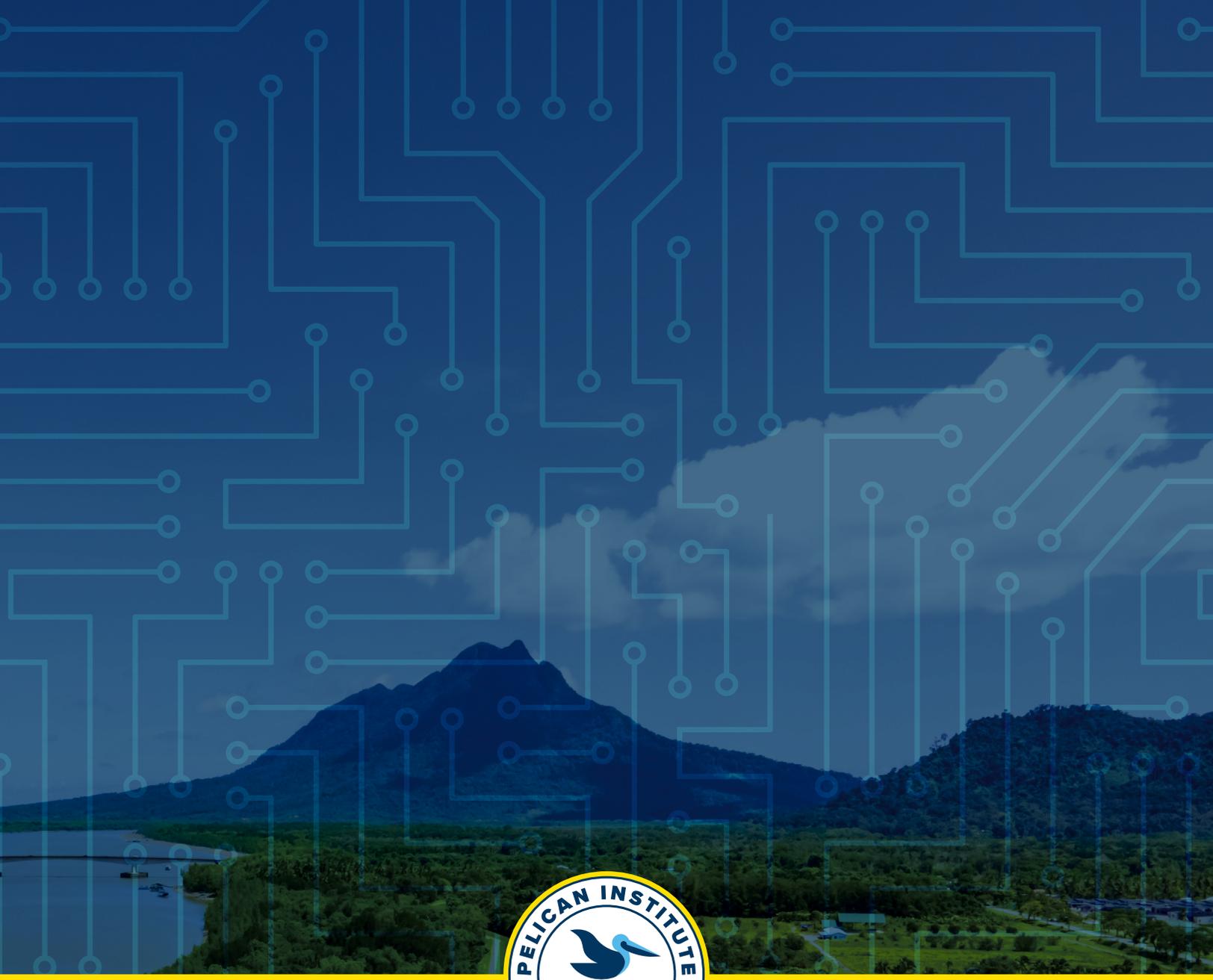
Policy makers should also take the time to understand which parts of their states lack connections and why. They should investigate barriers to deployment and remove them rather than attempting to supplant the private sector.

Getting broadband policy correct is more important than ever before, not only to deal with the short-term response to COVID-19, but also to make sure states are ready to compete and succeed in the increasingly digital economy.



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