

EMPOWERING AND CONNECTING COMMUNITIES
THROUGH DIGITAL EQUITY AND INTERNET
ADOPTION

HEARING
BEFORE THE
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TECHNOLOGY
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HOUSE OF REPRESENTATIVES
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C O N T E N T S

	Page
Hon. Mike Doyle, a Representative in Congress from the Commonwealth of Pennsylvania, opening statement	1
Prepared statement	3
Hon. Robert E. Latta, a Representative in Congress from the State of Ohio, opening statement	4
Prepared statement	5
Hon. Greg Walden, a Representative in Congress from the State of Oregon, opening statement	7
Prepared statement	9
WITNESSES	
Angela Siefer, Executive Director, National Digital Inclusion Alliance	11
Prepared statement	13
Answers to submitted questions	95
Joshua Edmonds, Director of Digital Inclusion, City of Detroit, MI	16
Prepared statement	18
Rosalyn Layton, Visiting Scholar, American Enterprise Institute	26
Prepared statement	28
Gigi Sohn, Distinguished Fellow, Georgetown Law Institute for Technology Law and Policy	36
Prepared statement	38
Jeffrey R. Sural, Director, Broadband Infrastructure Office, North Carolina Department of Information Technology	52
Prepared statement	54
SUBMITTED MATERIAL	
Hon. Frank Pallone, Jr., a Representative in Congress from the State of New Jersey, prepared statement	85
Letter of January 29, 2020, by Clayton Banks, CEO, Silicon Harlem, to Mr. Pallon and Mr. Walden, submitted by Mr. Doyle	86
Letter of January 29, 2020, by Jenny A. Durkan, Mayor of Seattle, to Mr. Pallon and Mr. Walden, submitted by Mr. Doyle	87
Letter of January 29, 2020, by Andy Berke, Mayor of Chattanooga City, to Mr. Pallon and Mr. Walden, submitted by Mr. Doyle	90
Letter of January 27, 2020, by Executive Director, Digital Liberty Federal Affairs Manager, Americans for Tax Reform, to Mr. Doyle and Mr. Latta, submitted by Mr. Doyle	92

EMPOWERING AND CONNECTING COMMUNITIES THROUGH DIGITAL EQUITY AND INTERNET ADOPTION

WEDNESDAY, JANUARY 29, 2020

HOUSE OF REPRESENTATIVES
SUBCOMMITTEE ON COMMUNICATIONS AND TECHNOLOGY
COMMITTEE ON ENERGY AND COMMERCE,
Washington, DC.

The subcommittee met, pursuant to call, at 10:30 a.m., in the John D. Dingell Room 2123, Rayburn House Office Building, Hon. Mike Doyle (chairman of the subcommittee) presiding.

Members present: Representatives Doyle, McNerney, Loebsack, Veasey, Soto, O'Halleran, Matsui, Cárdenas,, Dingell, Latta, Shimkus, Olson, Long, Brooks, Walberg, and Walden (ex officio).

Staff present: A. J. Brown, Counsel; Parul Desai, FCC Detailee; Jennifer Epperson, Counsel; Waverly Gordon, Deputy Chief Counsel; Alex Hoehn-Saric, Chief Counsel, Communications and Technology; Jerry Leverich, Senior Counsel; Dan Miller, Senior Policy Analyst; Phil Murphy, Policy Coordinator; Alivia Roberts, Press Assistant; Jennifer Barblan, Minority Chief Counsel, Oversight and Investigation; William Clutterbuck, Minority Staff Assistant; Michael Engel, Minority Detailee, Communications and Technology; Peter Kielty, Minority General Counsel; Kate O'Connor, Minority Chief Counsel, Communications and Technology; Brannon Rains, Minority Legislative Clerk; and Evan Viau, Minority Professional Staff, Communications and Technology.

Mr. DOYLE. Well, good morning, everyone.

The Chair now recognizes himself for 5 minutes.

OPENING STATEMENT OF HON. MIKE DOYLE, A REPRESENTATIVE IN CONGRESS FROM THE COMMONWEALTH OF PENNSYLVANIA

Yes, you bang that gavel and everybody gets quiet. That's pretty neat. The Chair will now recognize himself for 5 minutes for an opening statement.

Good morning, and welcome to the Subcommittee on Communication and Technology's hearing on "Empowering and Connecting Communities Through Digital Equity and Internet Adoption."

I want to thank our witnesses for appearing before us today to discuss this very important topic. Today, we will hear about the challenges of internet adoption that go beyond the lack of access.

All too often, we talk about how many Americans don't have access to broadband and discuss the resources necessary to close that gap.

But the far more insidious threats are those who have broadband available to them but don't sign up or those that don't have the basic skills to use digital technologies.

Our witnesses today will discuss the range of challenges these folks face, the risks we face by leaving millions of people behind, and a range of potential solutions.

Among the principal barriers faced by these communities are affordability, digital literacy, and access to devices.

First off, internet access is expensive, and when cost-constrained consumers are forced to choose between mobile and home internet, they often go mobile only. Millions of them, though, forgo both.

Internet and mobile service can cost hundreds of dollars a month. That is the equivalent of a car payment. In effect, many of us are essentially buying our ISP a new car every five years.

This is a very serious challenge to adoption, particularly in households making less than \$35,000 a year. Adoption numbers are even lower in low-income rural communities. So finding ways to close the affordability gap is just one part of closing the digital divide.

Another key piece to this puzzle is digital literacy and training, and ensuring that people have the skills, understanding, and confidence to use technology and get connected.

Organizations like the National Digital Inclusion Alliance and their partners like Computer Reach, based in Pittsburgh, have long worked to provide digital literacy training and provide access to low cost-devices and technology.

These programs help engage communities and provide folks with pathways not just to get connected but to leverage that connectivity to educate and empower themselves and their family members.

So whether it's being able to apply for jobs, enabling kids to do homework, connecting seniors to telehealth services, or veterans to support communities, these digital inclusion programs are often essential for opening people's eyes to the importance of, and the opportunities presented by, getting online.

Increasingly, digital literacy isn't just the ability to use a computer, but it's a fluency in technology, and as we look at manufacturing sectors, jobs that used to be based entirely on manual tasks are being supplanted by interacting with digital tools and systems.

And employment in those sectors requires a level of basic fluency just to get your foot in the door. The same is true for many other industries that are evolving as technology changes the way people work.

In rural communities, where the adoption is low, these programs are particularly important. They can help up-skill the workforce with the basic tools to use digital technologies.

We see this in factories in Pittsburgh with robotics, but we also see it in rural America with precision agriculture.

While the nature of these industries hasn't changed, the tools people are using have, and we need to ensure that folks in our communities have the basic skills to use them.

I am not talking about high schoolers. I am talking about people who have done these jobs most of their lives but haven't needed to use or interact with these new technologies.

The same is true with telehealth services. For seniors who are homebound or who want to remain in their homes, these services are a lifeline.

But, for many of them, digital literacy and access to affordable devices remain a barrier to adoption of these new technologies.

We also see this problem manifest itself in schools with the homework gap. Our educators are working to integrate technology into the curriculum. But many students lack access to home internet.

When your teacher is assigning you homework that you—and you need to go online just to see what the assignment is or to complete it, lack of internet access is a cruel stumbling block.

We have all heard stories about children sitting in cars outside of fast food restaurants and libraries to get on wifi or parked in overlooks that can get a trickle of broadband.

We can't afford to let this generation fall behind. These children are our nation's future and we need to find ways to close the homework gap for them and for ourselves.

It is my hope that we can have a productive discussion about the challenges faced by all of our communities and come to some consensus on solutions that can help close the digital divide.

As I have said before, I stand ready to work with my colleagues on both sides of the aisle to come up with real solutions to address these challenges.

I thank you all for being here today. I really look forward to the testimony of our witnesses.

[The prepared statement of Mr. Doyle follows:]

PREPARED STATEMENT OF HON. MIKE DOYLE

Good morning and welcome to the Subcommittee on Communication and Technology's hearing on "Empowering and Connecting Communities Through Digital Equity and Internet Adoption." I'd like to thank our witnesses for appearing before us today to discuss this important topic.

Today, we will hear about the challenges of internet adoption that go beyond a lack of access. All too often, we talk about how many Americans don't have access to broadband and discuss the resources necessary to close that gap, but the far more insidious threats are those who have broadband available to them but don't sign up—and those that don't have the basic skills to use digital technologies.

Our witnesses today will discuss the range of challenges that these folks face, the risks we face by leaving millions of people behind, and a range of potential solutions.

Among the principal barriers faced by these communities are affordability, digital literacy, and access to devices.

First off, internet access is expensive, and when cost-constrained consumers are forced to choose between mobile and home internet, they often go mobile-only. Millions though, forgo both.

Internet and mobile service can cost hundreds of dollars a month. That's the equivalent of a car payment. In effect, many of us are essentially buying our ISP a new car every five years.

This is a very serious challenge to adoption, particularly in households making less than thirty-five thousand dollars a year. Adoption numbers are even lower in low-income rural communities.

Finding ways to close the affordability gap is just one part of closing the digital divide. Another key piece to this puzzle is digital literacy and training—and, ensuring that people have the skills, understanding, and confidence to use technology and get connected.

Organizations like the National Digital Inclusion Alliance and their partners like Computer Reach, based in Pittsburgh, have long worked to provide digital literacy training and provide access to low-cost devices and technology.

These programs help engage communities and provide folks with pathways—not just to get connected, but to leverage that connectivity to educate and empower themselves and their family members.

Whether it's being able to apply for jobs, enabling kids to do homework, connecting seniors to telehealth services or veterans to support communities, these digital inclusion programs are often essential for opening people's eyes to the importance of, and opportunities presented by, getting online.

Increasingly digital literacy isn't just the ability to use a computer, but it's fluency in technology. As we look at the manufacturing sector, jobs that used to be based entirely on manual tasks are being supplanted by interacting with digital tools and systems.

And employment in these sectors requires a level of base fluency just to get your foot in the door.

The same is true for so many other industries that are evolving as technology changes the way people work.

In rural communities, or where adoption is low, these programs are particularly important. They can help upskill the workforce with the basic tools to use digital technologies. We see this in factories in Pittsburgh with robotics, but we also see it in rural America with precision agriculture.

While the nature of these industries hasn't changed, the tools people are using have—and we need to ensure that folks in our communities have the basic skills to use them.

I'm not talking about high schoolers, I'm talking about the people who have done these jobs most of their lives but haven't needed to use or interact with these newer technologies.

The same is true for telehealth services. For seniors who are homebound, or who want to remain in their homes, these services are a lifeline. But for many of them, digital literacy and access to affordable devices remain a barrier to adoption of these new technologies.

We also see this problem manifest itself in schools—with the homework gap. Our educators are working to integrate technology into the curriculum, but many students lack access to home internet. When your teacher is assigning you homework that you need to go online just to see what the assignment is or to complete it, the lack of internet access is a cruel stumbling block.

We have all heard stories of children sitting in cars outside of fast food restaurants and libraries to get on wi-fi or parked in overlooks that can get a trickle of broadband. We can't afford to let this generation fall behind. These children are our nation's future, and we need to find ways to close the homework gap for them and for ourselves.

It is my hope that we can have a productive discussion about the challenges faced by all of our communities and come to some consensus on solutions that can help close the digital divide.

And as I have said before, I stand ready to work with my colleagues on both sides of the aisle to come up with real solutions to address these challenges.

Thank you and I look forward to the testimony of our witnesses.

And with that, it gives me great pleasure to recognize my good friend, Mr. Latta, the ranking member of the subcommittee, for his 5 minute opening statement.

**OPENING STATEMENT OF HON. ROBERT E. LATTA, A
REPRESENTATIVE IN CONGRESS FROM THE STATE OF OHIO**

Mr. LATTA. Well, thank you very much, Mr. Chairman, and thank you very much for holding today's hearing and thanks to our witnesses for appearing before us today. We really appreciate your time for being here.

One of the great stories that are a success out there that has provided a building block for internet adoption and its widespread deployment is the success of wifi.

As co-chair of the Wifi Caucus, I understand the role wifi has played in bringing internet connectivity into millions of homes across the country.

Under a light touch approach, the first set of flexible rules put in place in the early 2000s paved the way for an explosion of broadband expansion. This deregulatory framework helped democratize the internet so that millions can enjoy the benefit it brings.

Since then, hundreds of billions of dollars of investment have poured in and new networks have been built across the country. Many companies have made great strides over the last decade to connect millions of low-income households to high-speed broadband.

While this committee's efforts have, largely, focused on promoting broadband deployment, the private sector has recognized that there is a great value in connecting the unconnected not only for its own business interests but for the communities they serve.

Yet, some Americans remain unconnected. Over the last decade, we have focused on closing the remaining gaps in broadband deployment so that every American, no matter where they live, can have access to the internet.

While, unfortunately, too many remain without an option at all, some who have access to the internet still do not subscribe.

As I am sure we will hear today, there are a variety of reasons why some people choose not to adopt broadband service. We can debate these reasons and my hope is that the data and research can shed some light on that today.

But as we consider the potential for new federal programs and legislation, I urge caution that we are not focusing on a one-size-fits-all solution with the heavy hand from Washington.

Our focus should be on putting consumers first by allowing them the flexibility to choose an internet plan that meets their needs, if any plan at all.

I also asks that we carefully consider whether there is a need for an expanded federal role at a time when state and local governments continue to make strides in providing willing consumers with the tools to connect to the internet.

As we will hear today, many states are working hard to serve their communities in ways that the federal government could never do from Washington.

To the extent more action is needed, it would be helpful to hear what state programs have been successful providing options to consumers.

While everyone operates in a resource-constrained environment; we should better understand the existing problems and solutions operating today before simply throwing more money at a problem that we might not fully understand.

And with that, Mr. Chairman, I will yield back the balance of my time.

[The prepared statement of Mr. Latta follow:]

PREPARED STATEMENT OF HON. ROBERT E. LATTA

Good morning, and welcome to today's hearing on broadband adoption. Thank you to our witnesses for being here today.

One of the great success stories that has provided a building block for Internet adoption and its widespread deployment is the success of Wi-Fi. As Co-Chair of the Wi-Fi caucus, I understand the role Wi-Fi has played in bringing internet connectivity into millions of homes across the country. Under a light-touch approach, the first set of flexible rules put in place in the early 2000s paved the way for an explosion of broadband expansion. This deregulatory framework helped democratize the internet so that millions can enjoy the benefit it brings. Since then, hundreds of billions of dollars of investment have poured in, and new networks have been built across the country.

Many companies have made great strides over the last decade to connect millions of low-income households to high-speed broadband. While this Committee's efforts have largely focused on promoting broadband deployment, the private sector has recognized that there is great value in connecting the unconnected: not only for its own business interest, but for the communities they serve.

Yet, some Americans remain unconnected. Over the last decade, we have focused on closing the remaining gaps in broadband deployment so that every American—no matter where they live—can have access to the internet. While, unfortunately, too many remain without an option at all, some who have access to the internet still do not subscribe. As I am sure we will hear today, there are a variety of reasons why some people choose not to adopt broadband service.

We can debate these reasons—and; my hope is that the data and research can shed some light on that today—but as we consider the potential for new Federal programs or legislation, I urge caution that we are not forcing a one-size-fits-all solution with a heavy hand from Washington. Our focus should be on putting consumers first by allowing them the flexibility to choose an Internet plan that meets their needs—if any plan at all.

I also ask that we carefully consider whether there is a need for an expanded Federal role at a time when State and local governments continue to make strides in providing willing consumers with the tools to connect to the internet. As we will hear today, many States are working hard to serve their communities in ways that the Federal Government could never do from Washington. To the extent more action is needed, it would be helpful to hear what state programs have been successful at providing options to consumers. While everyone operates in a resource-constrained environment, we should better understand the existing problems and solutions operating today before simply throwing more money at a problem we may not fully understand.

I look forward to learning more about those efforts currently underway and what the data can show us. Thank you again to our witnesses, and I yield back the remainder of my time.

Mr. DOYLE. The gentleman yields back.

The Chair is now going to recognize Mr. McNerney before Mr. Pallone's 5 minutes. We will yield to you.

Mr. MCNERNEY. I thank the Chair for this.

This is truly a bipartisan issue, and I am looking forward to working with members on both sides of the aisle to make some progress here.

My district is close to Silicon Valley. But the economic opportunities are starkly different between my district and Silicon Valley, which is 40 miles away.

However, the seeds of opportunity are already being planted. For example, I recently visited a coding school and the startup incubator to see adults learning skills that are going to be able to provide them with tremendous economic opportunity.

It was truly amazing to see a darkened classroom with people working hard. The big shots walked in and they didn't even notice us. They didn't care we were there. They were interested in learning their coding skills. So that was impressive.

Also, the largest city in my district—Stockton, California—has, developed an AI strategy. So there are the seeds for improvement.

But the reality is that many of my constituents still lack the digital skills to get ahead or even to get by in today's economy.

Many don't even have broadband at home, even though they often live in an area that has broadband deployed nearby. As a result, there is a wealth of opportunity for my constituents that remains largely, untapped.

And this is the case for many communities across the country, rural and urban. That is why I introduced H.R. 4486, the Digital Equity Act—legislation that would create a federal grant program to close gaps in broadband adoption and digital literacy. We are long overdue for closing these gaps.

So I ask my colleagues on both sides of the aisle, both rural and urban districts, do you have constituents that are being left behind the digital divide?

If so, work with me to pass this legislation and open up economic opportunity and prosperity for every American.

With that, I am going to yield to the gentleman from New Mexico, Mr. Luján.

Mr. LUJÁN. Thank you, Mr. McNerney, and I want to thank the witnesses for testifying to Chairman Pallone and Doyle, Ranking Members Walden and Latta, for today's hearing on digital equity.

I want to focus on what FCC Commissioner Jessica Rosenworcel has called the cruelest part of the digital divide—the homework gap.

We know that seven in ten teachers assign homework that requires access to broadband. Unfortunately, we also know that millions of students lack access at home or in their communities.

As Mr. McNerney laid out, even if broadband is able to be connected to, it's unaffordable. It's unaffordable. It's out of reach. More students, though, who don't have any connectivity they find themselves in parking lots, at fast food restaurants, or high schools across the country, sometimes sitting on the sidewalk in the dark of night because that's the only place they can get access to free internet. Keep up with the homework.

If air travelers can have internet access at 30,000 feet flying across the world, why in the hell can't we connect on the ground to these rural communities? Nobody's been able to answer that question.

Let's close the gap. Let's find some answers and let's find a way to work together in a bipartisan way.

I yield back.

Mr. DOYLE. The gentleman yields back.

It's now my pleasure to recognize Mr. Walden, the ranking member of the full committee, for 5 minutes for his opening statement.

OPENING STATEMENT OF HON. GREG WALDEN, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF OREGON

Mr. WALDEN. Good morning, Mr. Chairman. Thank you for doing this hearing. I think it's really an important one. We are going to hear some interesting testimony from our witnesses. We all appreciate you being here and sharing your wisdom with us, how we can connect America better.

We all know that the internet has truly transformed the lives of people throughout the world. It plays a central role in how Americans conduct business, how we interact, and how we make daily decisions. Under a light-touch regulatory framework, the internet has

really thrived, providing Americans access to numerous services, and serving as the single most important driver of economic growth and job creation.

While the internet has been, largely, adopted in a relatively short span of time if you think about human history and the enormous revolution the internet has brought; there are still millions of Americans who do not have access to the internet in their homes, as you're hearing from all of us, and especially those of us who represent these big sweeping wide open rural districts. But it's also an issue in urban cities as well.

In some cases, it's because high-speed broadband had not been deployed, an issue this Committee has focused on in a bipartisan way for many years.

And while we have made progress in promoting broadband deployment, particularly in rural areas, we all know there are many Americans who remain unconnected, even if they do have access to broadband service options.

Recognizing this issue, some companies have made important strides over the last decade to connect millions of low-income households to high-speed broadband.

For example, the Internet Essentials Program, developed by one service provider, offers high-speed broadband at an affordable price and they've seen great success. It has connected eight million people in over two million households; more than, I dare say, a federal program would likely achieve in the same period of time. It provides opportunity and access for low-income individuals.

We must make sure that our policies allow for continued experimentation in the marketplace with ways to promote broadband adoption as well.

It should be noted that where there are gaps in adoption, state and local governments have also been a big part of the team and have provided good work to support and reach out to their communities.

They have firsthand knowledge of the challenges that their communities face, and we work with their resources. They have to find creative solutions.

I am excited to have witnesses here today that can talk about some of the innovative work that's being done at the local level to address the adoption issue. I think it's an important one.

Let us not put the cart before the horse. In many parts of the country, especially frontier communities like those in eastern Oregon, broadband availability remains elusive.

Recently, we were in John Day, my staff and I, doing some meetings and it's in the really central part of my district in a pretty isolated area. I think the nearest stoplight is five hours away or something.

I am not making that up, by the way. They had really limited internet service and intermittent internet service, and just to put it in perspective, when we finished our meetings, we decided we better gas up before we left town, and we had to pay with cash because the internet was down and they wouldn't process credit cards.

More of an inconvenience, yes. Good thing we had cash. But it's no way to do business, and we have been working with USDA and others to get some money in there and figure out various problems.

It's only been a decade since broadband deployment has exploded into an everyday necessity, and without first addressing the lack of broadband availability, any federal resources put forward for broadband adoption could further enlarge the digital divide if not done carefully.

Obviously, we still have issues with mapping that various FCCs have wrangled with for decades and we are all trying to get it right.

To be sure, today's hearing will hopefully bring data to the discussion so we can get a better understanding of barriers to broadband adoption. I am happy we are following regular order and holding a hearing to examine the breadth of the issues on such an important topic.

So with that, Mr. Chairman, thanks for doing this. We look forward to working with you on this and other communications issues, going forward, and again, thanks to our witnesses and I yield back a full minute.

[The prepared statement of Mr. Walden follows:]

PREPARED STATEMENT OF HON. GREG WALDEN

Good morning, and welcome to today's hearing on broadband adoption and digital equity. I want to thank our witnesses for testifying before us today on this important issue.

The internet has truly transformed the lives of people throughout the world. It plays a central role in how Americans conduct business, interact, and make daily decisions. Under a light-touch regulatory framework, the internet has thrived, providing Americans access to numerous services, and serving as the single most important driver of economic growth and job creation.

While the internet has been largely adopted in a relatively short span of time, there are still millions of Americans who do not have access to the internet in their homes. In some cases, it is because high-speed broadband has not been deployed, an issue that this Committee has focused on for many years. And while we have made progress in promoting broadband deployment, particularly in rural areas, there are many Americans who remain unconnected, even if they do have access to broadband service options.

Recognizing this issue, companies have made great strides over the last decade to connect millions of low-income households to high-speed broadband. For example, the Internet Essentials program—developed by one service provider—offers high-speed broadband at an affordable price and has seen great success. It has connected eight million people in over two million households, more than a federal program could likely achieve in the same period of time, and provides opportunity and access for low-income individuals. We must make sure that our policies allow for continued experimentation with ways to promote broadband adoption.

It should be noted that where there are gaps in adoption, state and local governments have done a great job providing support and outreach to their communities. They have firsthand knowledge of the challenges their communities face and work with the resources they have to find creative solutions. I am excited to have witnesses here today that can talk about some of the innovative work that is being done at the local level to address the adoption issue.

But let us not put the cart before the horse. In many parts of the country, but especially frontier communities like Eastern Oregon, broadband availability remains elusive. John Day, for example, is so limited in internet service that during one of my visits last year, the whole town had been experiencing internet outages intermittently for a couple of weeks, and we had to pay with cash at the gas station because they couldn't process cards, making it hard to do business.

It's only been a decade since broadband deployment has exploded into an everyday necessity, and without first addressing the lack of broadband availability, any

Federal resources put forward for broadband adoption could further enlarge the digital divide if not done carefully.

To be sure, today's hearing will hopefully bring data to the discussion so we can get a better understanding of barriers to broadband adoption. I am happy that we are following regular orders and holding a hearing to examine the breadth of the issue on such an important topic.

I would like to thank the witnesses for being here, and I yield back.

Mr. DOYLE. I thank the gentleman. The gentleman yields back.

The Chair would like to remind Members that pursuant to committee rules, all members' written opening statements shall be made part of the record.

Now it gives me great pleasure to introduce our witnesses for today's hearing.

Ms. Angela Siefer, executive director, National Digital Inclusion Alliance—welcome.

Mr. Joshua Edmonds, director of Digital Inclusion, city of Detroit, Michigan. Welcome, sir.

Ms. Rosalyn Layton, visiting scholar, American Enterprise Institute—welcome.

Ms. Gigi Sohn, a regular here on our panels. Gigi, it's good to have you here. She is a distinguished fellow with Georgetown Law Institute for technology, law, and policy. Welcome.

And last but certainly not least, Mr. Jeffrey Sural, director of Broadband Infrastructure Office, North Carolina Department of Information Technology.

We want to thank all of you for joining us here today. We look forward to your testimony. I will be recognizing each of you for 5 minutes to provide your opening statements.

Before we begin, we have a—is the lighting system there to be seen. We have this lighting system that I want to tell you about. When you first start, you'll notice a green light and you can continue speaking, and you'll see the light turn yellow.

That means you have one minute to wrap up your opening statement, and when that light turns red, your chair falls down through a chute.

[Laughter.]

Mr. DOYLE. No, when your light turns red, you should—you should stop talking.

Anyway, so we are going to get started. So thank you very much and Ms. Siefer, you are now recognized for 5 minutes for your opening statement.

Your microphone.

STATEMENTS OF ANGELA SIEFER, EXECUTIVE DIRECTOR, NATIONAL DIGITAL INCLUSION ALLIANCE; JOSHUA EDMONDS, DIRECTOR OF DIGITAL INCLUSION, CITY OF DETROIT, MI; ROSALYN LAYTON, VISITING SCHOLAR, AMERICAN ENTERPRISE INSTITUTE; GIGI SOHN, DISTINGUISHED FELLOW, GEORGETOWN LAW INSTITUTE FOR TECHNOLOGY LAW AND POLICY; JEFFREY R. SURAL, DIRECTOR, BROADBAND INFRASTRUCTURE OFFICE, NORTH CAROLINA DEPARTMENT OF INFORMATION TECHNOLOGY

STATEMENT OF ANGELA SIEFER

Ms. SIEFER. You have to press the button. That wasn't part of the instructions.

[Laughter.]

Ms. SIEFER. Chairman Doyle, Ranking Member Latta, Ranking Member Walden, esteemed members of the committee, my name is Angela Siefer.

I am the executive director of the National Digital Inclusion Alliance. I am here representing NDIA and our affiliates, and Computer Reach in Pittsburgh also thanks you for us being here.

Twenty some years ago, I was in—I was a grad student in Toledo, Ohio, and we were—I was setting up computer labs. I was teaching people how to use Word. I was organizing meetings.

We thought of our work as bridging the digital divide. Our focus was on computers and computer training. In 1996, we were not concerned with internet access. If we had just two computers in the lab that were connected to the internet, we thought we were cutting edge.

Today, folks on the ground who are bridging the digital divide are facilitating access to home internet service, devices, and digital literacy training. They are nonprofit organizations, libraries, governments, housing authorities, and more. They are the heroes.

NDIA represents over 400 of these affiliated organizations in 41 states, the District of Columbia, and the U.S. Virgin Islands.

NDIA's positions are based on our affiliates' on-the-ground experience and research. I would like to address a few myths today.

Myth number one—there's a misstatement that's often repeated that the digital divide would be bridged if we just filled the rural broadband infrastructure gaps in the U.S.

According to the Census' latest American Community Survey, about 14 million urban households in major metro areas, as well as smaller cities and towns and four million rural households, still lack broadband subscriptions of any kind, including mobile data plans.

What did 60 percent of the unconnected urban households, have in common with more than half of the unconnected rural households? They all had household incomes below \$35,000. Households with incomes less than \$35,000 make up 28 percent of U.S. households, but they account for 60 percent of those without any broadband internet service.

We do need to address the lack of broadband infrastructure in rural areas. But it's just one barrier to individuals and communities being able to fully participate in society today.

The other common barriers, no matter where one lives, are the cost of internet service and devices, plus digital literacy skills.

Simplistically equating the digital divide with just one of these barriers increases the division in our country.

Myth number two—no worries, the excitement around 5G says that we will just—it will solve the digital divide. 5G will not solve the digital divide.

Current broadband technologies were not deployed to all neighborhoods unless local governments mandated such. There's no reason to think 5G will be any different.

Additionally, 5G as a broadband service requires 5G-capable devices. Low-income households struggling to pay for internet service will certainly not rush out to purchase a 5G-enabled device.

Myth number three—well-intentioned individuals have stated that if we can convince non-adopters of the value of the internet, they would certainly subscribe. Anyone who has resisted using the internet quickly realizes that the internet cannot be avoided when you apply for a job, register for classes, or even to find out what your Social Security benefits are.

The greatest barrier to broadband adoption is not relevance. It is a cost in digital literacy. Residential internet service in the U.S. is expensive.

On the low end; internet service generally runs \$65 to \$70 per month. That's a lot of money. Unfortunately, I can't provide more detail as to the cost of internet service because the data doesn't exist.

We need the FCC to begin collecting data on the cost of home internet service and make it publicly available.

In the U.S., digital literacy training is undervalued and underfunded. One-third of manufacturing workers lack proficient digital skills.

Half of all construction, transportation, and storage workers lack proficient digital skills. There is no funding dedicated to digital literacy training in the U.S.

It has been left up to local governments, libraries, and nonprofits to piece together resources to address the basic digital skills training that millions of Americans need to cross that digital divide.

Piecing together funding is the wrong strategy for a strong workforce. Now let me share some good news.

Digital inclusion solutions in the U.S. have been crafted from the ground up. NDIA's affiliates are providing guidance to low-income parents, connecting to their children's teachers, teaching seniors how to use their electronic health records, helping veterans learn digital skills to acquire a job, and enabling disabled adults to participate more fully in their communities.

We know that trust is an important factor. Technology can be quite intimidating. The most successful digital inclusion programs are rooted in the communities being served. What is missing?

Digital equity planning at the state level and financial support for that planning plus the implementation. A good first start would be to pass the Digital Equity Act.

We are also in need of increased awareness of the problem and the solutions. So thank you. This hearing is increasing awareness. You are increasing awareness.



TESTIMONY OF ANGELA SIEFER
Executive Director
NATIONAL DIGITAL INCLUSION ALLIANCE

Before the United States House of Representatives
Subcommittee on Communications and Technology
Committee on Energy and Commerce

On
"Empowering and Connecting Communities Through Digital Equity and Internet Adoption"

Washington DC
January 29, 2020

Chairman Doyle, thank you for the opportunity to be here today on behalf of the National Digital Inclusion Alliance and our affiliates including Pittsburgh's digital inclusion leader, Computer Reach.

Twenty some years ago, in Toledo, Ohio, I was a graduate student setting up computer labs, teaching people how to use Word to create a resume and organizing regional meetings of community technology centers. We thought of our work as "bridging the digital divide". Our focus was on access to computers and computer training. In 1996, we were not concerned with universal access to the internet. If we had just two computers in a lab connected to the internet, we congratulated ourselves for being cutting edge.

Today folks on the ground who are "bridging the digital divide" are facilitating access to home internet service, devices and digital literacy training. NDIA represents these heroes. They are nonprofit organizations, libraries, local governments, housing authorities and more. NDIA represents over 400 affiliated organizations in 41 states, the District of Columbia and the U.S. Virgin Islands.

NDIA's positions are based in our affiliates' on-the-ground experience and research. There are a few myths that I would like to address today.

Myth #1. A mis-statement that we hear repeated often is that the digital divide would be bridged if we filled the broadband infrastructure gaps in rural areas. According to the Census' latest American Community Survey, about fourteen million urban households (in major metro areas as well as smaller cities and towns) and 4 million rural households, still lacked broadband



subscriptions of any kind, including mobile data plans.¹ What did 60% of unconnected urban residents have in common with more than half of the unconnected rural households? They all had household incomes below \$35,000. Households with incomes less than \$35,000 make up 28% of all U.S. households but they account for 60% of those without any broadband internet service.²

We do need to address the lack of broadband infrastructure in rural areas. It is a serious problem. But, it is just one barrier to individuals and communities being able to fully participate in society today. The other common barriers, no matter where one lives, are the costs of internet service and devices, plus digital literacy skills. Simplistically equating "the digital divide" with just one of these barriers increases the division in our country.

Myth #2. The excitement around 5G has led to claims 5G will solve the digital divide. It will not. Current broadband technologies were not deployed to all neighborhoods (unless local governments mandated such) and there is no reason to think 5G will be any different. Additionally, 5G as a broadband service will require 5G capable devices. Low income households struggling to pay for internet service will certainly not rush out to purchase a 5G enabled device.

Myth #3. Well intentioned individuals have stated that if we could convince non-adopters of the value of the internet, they would subscribe. Anyone who has resisted using the internet realizes very quickly that the internet cannot be avoided when they try to apply for a job, register for classes or find out what their social security benefits will be. The greatest barrier to broadband adoption is not relevance. It is cost and digital literacy.

Residential internet service in the U.S. is expensive. On the low end, internet service generally runs \$65-70 per month³. That's a lot of money. Unfortunately I cannot provide any detail as to the cost of internet service because that data does not exist. We need the FCC to begin collecting systematic data on the cost of home internet service and make it publicly available.

In the U.S., digital literacy training is under-valued and thus under-funded. One-third of manufacturing workers lack proficient digital skills. Half of all construction, transportation and

¹ Of 18.1 million households with no broadband of any kind, 13.8 million were in what the Census calls urban areas, including six million in "principal cities" of metropolitan areas, other "urbanized" areas, and "urban clusters" in and around smaller cities and towns. Only about a fourth of U.S. households without broadband were in rural areas. (2018 American Community Survey 1-Year Estimates, Tables B28002, GCT2801 and S1101, United States)

² 2018 American Community Survey 1-Year Estimates, Table B28004 (United States). 38% of the households with no broadband at all had incomes below \$20,000. Another 23% had incomes between \$20,000 and \$35,000.

³ Refers to lowest monthly cost for non-promotional, standalone Internet service at any speed in most U.S. markets. Source: Ongoing NDIA research.



storage workers lack proficient digital skills.⁴ There is no funding for digital literacy training.⁵ It has been left up to local governments, libraries, and nonprofits to piece together resources to address the basic digital skills training that millions of Americans need to cross that digital divide. Piecing together funding is the wrong strategy for a strong workforce.

Now, let me share some good news. Digital inclusion solutions in the U.S. have been crafted from the ground up. NDIA's affiliates are providing guidance to low-income parents connecting to their children's teachers, teaching seniors how to use their electronic health records, helping veterans learn digital skills in order to acquire a job, and enabling disabled adults to participate more fully in their communities. We know that trust is an important factor. Technology can be quite intimidating. The most successful digital inclusion programs are rooted in the communities being served.

What is missing? Digital equity planning at the state level. And financial support for that planning plus the implementation. A good first start would be to pass the Digital Equity Act. We are also in need of increased awareness of the problem and the solutions.

So, thank you. This hearing is increasing awareness. You are increasing awareness.

⁴ National Skills Coalition analysis of OECD Survey of Adult Skills 2012-14 data. Proficient digital skills defined as: At this level, tasks typically require the use of both generic and specific technology applications. For example, a person might be presented with a new type of online form, and need to navigate across multiple pages and applications to answer the test question. The task may have multiple steps, and may require the use of tools (such as the "sort" function) to solve the problem. The person may have to identify the goal themselves, and engage in higher-level reasoning to solve the problem.

⁵ In 2018, combined expenditures for rural broadband infrastructure by USAC and USDA totalled more than \$3.3 billion dollars.

Mr. DOYLE. Thank you very much.

We now recognize Mr. Edmonds for 5 minutes for your opening statement.

STATEMENT OF JOSHUA EDMONDS

Mr. EDMONDS. Honorable Chairman, Ranking Member, and committee members, my name is Joshua Edmonds and on behalf of the city of Detroit, I would like to express a sincere thanks for the opportunity to discuss digital equity and internet adoption, two issues that are critical for the residents that I serve.

These issues transcend specific geographies and demographics and have a far-reaching impact on our great nations. Digital equity is a commitment for the least of us. It requires an honest assessment of what diverse populations need to achieve meaningful participation in a digital society.

At the core of any digital equity initiative is the understanding of the plight of older adults, veterans, low-income families, disabled residents, small business owners, and unemployed Americans, all seeking to engage in an increasingly digital world.

As the city of Detroit's director of digital inclusion and as a digital inclusion policy fellow within the Poverty Solutions Initiative at the University of Michigan, I am responsible for developing a digital equity strategy that will sustainably increase internet subscribers while placing emphasis on digital skill training and resident device acquisition.

I plays a vital role in implementing digital equity initiatives for a city where one in four residents still does not have broadband access of any kind.

Every American city has digital inequity of some type. Yet, none of us receive any federal funding beyond infrastructure to address the issue.

On the topic of digital protection, over 200,000 residents utilize Detroit public libraries' wifi networks, oftentimes in parking lots and after hours.

This example is not specific to Detroit. Many residents in underserved communities are unaware of how to protect themselves online. This is a problem with implications tied to our national security.

For Americans with disabilities, this year marks the 30th anniversary of the passing of the Americans with Disabilities Act.

Unfortunately, Americans with disabilities are less likely to have home broadband and technical devices. With more than 56 million Americans living with a disability, investments in digital equity would ensure Americans with disabilities are afforded the same opportunity to digitally engage in today's economy regardless of their geographic location.

On the topic of the census, due to our broadband challenges; the Associated Press listed Detroit as the toughest community to count in America. U.S. cities are at an increased risk of missing out on our share of the \$1.5 trillion in federal resources.

If the Federal Government is using the internet as a vehicle to determine population sizes to ultimately allocate funding, that same Federal Government should also provide resource for commu-

nities to boost broadband adoptions and to ensure an accurate count that's fair.

Strategic partnerships can really help reduce the digital divide. At the city, I also work directly with internet service providers in varying capacities.

While my role can be very challenging, most of the providers have been great partners. When the city recognized digital inclusion week this past October, Comcast was one of our first sponsors, with additional support from Verizon and AT&T.

This past holiday season, when working with Los Angeles-based social enterprise human IT and the Detroit Housing Commission, we were able to provide 75 families with three computers.

I made one phone call to Comcast asking for them to provide those same 75 families with six months of free internet. They obliged.

These are small examples of how local leadership has called on industry to fill in where the Federal Government is silent.

In Detroit, we have developed public-private partnerships without any government funding. But it is an unsustainable model. We need federal resources to continue our work.

If we were to receive federal funding, we could do more robust outreach and incentivize more localized funding from philanthropic organizations.

In conclusion, the city of Detroit has stories that are familiar to thousands of cities and towns across the United States that are starving for digital opportunities.

Thank you for the opportunity to be heard on a national level. I hope my testimony serves as a launch pad that will spur digital equity investment that gives American communities the footing needed to compete in the digital economy.

The digital divide is an indiscriminate issue that, ironically, connects all of us. We need leaders at all levels within all sectors to really work together on this issue.

I realize I have 40 seconds left so I can return that.

[Laughter.]

[The prepared statement of Mr. Edmonds follows:]

Written Testimony of Joshua D. Edmonds

Director of Digital Inclusion

City of Detroit

Before the United States House of Representatives

Committee on Energy and Commerce

Subcommittee on Communications and Technology

On

“Empowering and Connecting Communities through Digital Equity and Internet Adoption”

January 29, 2020

Honorable Chairman, Ranking member and Committee members:

On behalf of the City of Detroit, I would like to express a sincere thanks for the opportunity to discuss digital equity and internet adoption, two issues that are critical for the people that I serve. These issues transcend specific geographies and demographics, and have a far-reaching impact on our great nation as a whole.

Digital equity is a commitment for the least of us. It requires an honest assessment of what diverse populations need to achieve meaningful participation in a digital society. For some communities, that involves building infrastructure, other communities require additional support to ensure that residents can subscribe to reliable, affordable broadband plans. But at the core of any digital equity initiative is understanding the plight of older adults, veterans, low-income families, disabled residents, small business owners, and unemployed Americans all seeking to engage in a digital society. Local leaders are uniquely positioned to help galvanize the stakeholders that can help these populations and others take advantage of digital opportunities.

As the City of Detroit's Director of Digital Inclusion and a Digital Inclusion Policy Fellow with the Poverty Solutions Initiative at the University of Michigan, I am responsible for developing a digital equity strategy that will sustainably increase internet subscribers while placing an emphasis on digital skills training and resident device acquisition. I play a vital role in implementing digital equity initiatives for a city where one in four residents still do not have broadband access of any kind.¹ Cities like mine and across the nation do not receive any federal

¹ U.S. Census Bureau, 2017 American Community Survey 1-Year Estimates

funding to address this issue. Thus, it is imperative to examine why the digital divide goes beyond infrastructure and encompasses larger societal issues.

Cybersecurity

Over 200,000 residents utilize the City of Detroit's library system to access Wi-Fi networks. These residents include the low-income, school age children, and the elderly who are oftentimes relegated to searching for online connectivity in parking lots. This is alarming for a variety of reasons – including cybersecurity concerns that do not receive as much oxygen in conversations about broadband access. Referencing a report conducted by researchers at UC Berkeley, residents in underserved communities are largely unaware of cybercrimes, and cities are also largely unaware on how to better protect their residents.² Residents utilizing open and unprotected networks to access the internet is not just an internet access problem, but a problem of national security.

Financial Illiteracy

According to a recent report published by the Federal Reserve Bank, from 2012-2017, ~1,600 banks closed in both rural and urban counties. The large reason, online banking. The Federal Reserve Bank found that areas composed of residents with lower income, fewer years of education, and a greater proportion of African Americans, were the most affected.³ Those who are struggling with connectivity are most likely to suffer the impact. As banking continues to migrate online and digital equity remains unaddressed, financial illiteracy and digital illiteracy will continue to grow. Again, Americans in both rural and urban communities will be locked out of financial opportunities.

² <https://cltc.berkeley.edu/2019/04/15/improving-cybersecurity-awareness-in-underserved-populations/>

³ <https://www.federalreserve.gov/publications/november-2019-bank-branch-access-in-rural-communities.htm>

Tech-Enabled Workforce

According to a recent Department of Labor report, there are over 700,000 unfilled IT jobs in the U.S.⁴ Beyond searching and applying for jobs online, the demand for skilled tech workers is growing, while the pipelines remain predominately rooted in communities ripe with socioeconomic advantages. Investing in digital equity ensures economically distressed communities can gain access to digital literacy trainings and devices that will allow them to amass the digital familiarity needed to partake in existing workforce efforts. Our national goals to build our workforce depend on Americans having reliable, affordable broadband access.

Population

Broadband access does not only ensure that cities can compete, it ensures that they retain the talent and maintain the population that helps their communities to thrive. According to data provided by CityLab, Rust Belt cities, the Great Plains and the South have suffered significant population decline over an approximate 40-year span⁵. As rural, tribal and urban communities wrestle with losing talent, taxpayers and revenue, investments in digital equity could arm affected areas with the ability to grow their own talent by supporting localized digital inclusion programming that places an emphasis on both broadband access and tackling obstacles that keep residents from connecting to the digital world.

Healthcare

According to the American Hospital Association, telehealth represents the future of care delivery that increases residential access to physicians and specialists ensuring Americans have the care when they need it. 76% of U.S. hospitals provide telehealth services; however, one of the larger

⁴ <https://www.cnbc.com/2019/06/18/there-are-70000-open-tech-jobs-here-is-how-firms-are-hiring-for-them.html>

⁵ <https://www.citylab.com/equity/2019/05/economic-geography-talent-brain-drain-research-map-move/588673/>

issues is both broadband access and broadband adoption.⁶ Rural populations will continue to be at a disadvantage without access to telehealth opportunities. Given that the US has a significant aging population,⁷ the value in ensuring the US has appropriate digital equity investments could boost telehealth participation for residents most in need of care.

Census 2020

The U.S. Census Bureau has embarked on their first data collection that will be predominately conducted online. Citing the lack of residents with internet access, the Associated Press listed Detroit as the “toughest community” to count in America.⁸ Detroit, like other communities across the U.S. with pronounced digital inequity, risk missing out on our share of the \$1.5 trillion in federal resources. That has a direct impact on education, healthcare, infrastructure projects, and could potentially reduce Congressional representation. If the federal government is using the internet as a vehicle to determine population sizes to ultimately allocate funding, the federal government should also provide resources for communities to boost broadband adoption and to ensure an accurate count.

Americans with Disabilities

This year marks the 30th anniversary of the passing of the Americans with Disabilities Act. Unfortunately, according to a recent Pew Research Study, Americans with disabilities are less likely to have home broadband and technical devices.⁹ We can extrapolate that if these Americans do not have home broadband or a device, digital literacy is likely an obstacle to broadband adoption. With more than 56 million Americans living with a disability, investments

⁶ <https://www.aha.org/factsheet/telehealth>

⁷ <https://www.census.gov/newsroom/press-releases/2018/cb18-41-population-projections.html>

⁸ <https://apnews.com/9e753cf7f046bd5b436aacc54bf207a3>

⁹ <https://www.pewresearch.org/fact-tank/2017/04/07/disabled-americans-are-less-likely-to-use-technology/>

in digital equity would ensure Americans with disabilities are afforded the same opportunity to digitally engage in today's economy regardless of their geographic location.

Homework Gap

The homework gap is a harsh reality for school age children regardless of whether they live in Indigenous, rural, urban, or hard to reach communities. For the millions who do not have the requisite digital access to complete assignments, the homework is unforgiving and does not discriminate—their opportunities can be limited or eliminated without connectivity. In 2018, Common Sense Education¹⁰ conducted a national survey geared towards gathering information about the digital divide from teachers. Forty percent of teachers said that many of their students did not have adequate access to the internet or computer to complete schoolwork at home. Schools with more than three-quarters of students being students of color are more likely to say over 60% of their students do not have home access to the internet or a computer.¹¹ There is widespread agreement that investing in digital equity initiatives would help arm our children with the necessary footing needed to excel in the classroom by providing home-based support.

Broadband Access versus Adoption

In table 1.1, I listed each subcommittee representative, their respective district, and combined the Microsoft¹² and FCC data¹³ to address the myth that broadband availability guarantees broadband usage. The methodology Microsoft used to collect broadband usage comes from data Microsoft collected when rolling out national software updates. It is important to examine the

¹⁰ Common Sense is the nation's leading nonprofit organization dedicated to improving the lives of kids and families.

¹¹ <https://www.benton.org/headlines/homework-gap-teacher-perspectives-closing-digital-divide>

¹² <https://news.microsoft.com/rural-broadband/>

¹³ <https://www.fcc.gov/general/broadband-deployment-data-fcc-form-477>

disparity between broadband usage and availability, and make recommendations to support localized adoption programs that will reduce the differentials.

Representative	District	Broadband Availability	Broadband Usage
Shimkus (R)	IL-15	70%	24%
Scalise (R)	LA-1	93%	39%
Olson (R)	TX-22	96%	60%
Kinzinger (R)	IL-16	94%	34%
Bilirakis (R)	FL-12	99%	61%
Johnson (R)	OH-6	74%	24%
Long (R)	MO-07	85%	24%
Flores (R)	TX-17	90%	47%
Brooks (R)	IN-05	92%	44%
Walberg (R)	MI-07	82%	32%
Gianforte (R)	MT-00	77%	30%
Walden (R)	OR-02	84%	41%
Latta (R)	OH-05	89%	31%
Pallone (D)	NJ-06	99%	70%
Doyle (D)	PA-18	96%	52%
McNerney (D)	CA-09	96%	43%
Clarke (D)	NY-09	100%	43%
Loebsack (D)	IA-02	87%	30%
Veasey (D)	TX-33	100%	35%
McEachin (D)	VA-04	90%	49%
Soto (D)	FL-09	98%	55%
O'Halleran (D)	AZ-01	54%	30%
Eshoo (D)	CA-18	100%	63%
DeGette (D)	CO-01	99%	53%
Butterfield (D)	NC-01	90%	34%
Matsui (D)	CA-06	98%	49%
Welch (D)	VT-00	86%	39%
Luján (D)	NM-03	70%	23%
Schrader (D)	OR-05	96%	55%
Cárdenas (D)	CA-29	100%	46%
Dingell (D)	MI-12	97%	50%

Table 1.1

Strategic Partnerships Can Help Reduce the Digital Divide

In my role at the City, I also work directly with internet service providers in varying capacities.

While my role can be very challenging, most of the providers have been great partners. When the City recognized Digital Inclusion Week this past October, Comcast was one of the first sponsors,

with additional support from Verizon and AT&T. This past holiday season, when working with Los Angeles based social enterprise, human I-T, and the Detroit Housing Commission, we were able to provide 75 families with free computers. I made one phone call to Comcast, and they agreed to provide 75 families six months of free internet access through their Internet Essentials program.

These are examples of how local leadership has called on industry to fill in where the federal government is silent. In Detroit, we have developed public-private partnerships without any government funding, but it is an unsustainable model. We need federal resources to continue our work. If we were to receive additional funding, we could do more robust outreach, and incentivize more localized funding from philanthropic organizations.

In conclusion, the City of Detroit has stories that are familiar to thousands of cities and towns across the US that are starving for digital opportunities. Thank you for the opportunity to be heard on a national level. I hope my testimony serves as a launch pad that will spur digital equity investments that give American communities the footing needed to compete in the digital economy.

Mr. DOYLE. You're to be commended, Mr. Edmonds. That's going to get you a long way in this committee.

[Laughter.]

Dr. Layton, you're recognized for 5 minutes.

STATEMENT OF ROSALYN LAYTON

Ms. LAYTON. Thank you, Mr. Doyle.

I wanted to say I am a native of Pittsburgh and I would like to make a shout-out to my friends and family in Da Burgh and I also want to say what I love seeing is a representative from Pittsburgh sitting next to the representative from Ohio.

Normally, never the twain shall meet, but it's after football season and it's wonderful to be here and present to the committee.

Mr. DOYLE. I didn't know you were from Pittsburgh. You can take all the time you like.

Ms. LAYTON. Thank you. Thank you.

[Laughter.]

Ms. LAYTON. Thank you. So let me begin by responding to some important points already made, and Mr. Edmonds, who—he highlights this problem of cyber crimes perpetuated against those he serves in Detroit and this demonstrates the danger of policy focusing solely on price and not other important factors such as security.

Now, consider the predicament of the European Union today. To meet regulators' low price requirements, broadband providers had to cost cut so severely that they ended up buying cheap unsafe Huawei equipment, and this effort to deliver low prices had put Europeans' privacy and security at risk.

Now, fortunately, in the U.S., the FCC recently adopted rules restricting subsidies for equipment that's deemed a security risk. Nevertheless, there's at least another \$20 billion annually in federal broadband funds, which are not scrutinized for security purposes, not to mention additional grants at the state and local levels.

Now, it's not only our network equipment that is vulnerable. Our national vulnerability database lists such commonplace items such as Lexmark printers and Lenovo laptops, as products which can compromise a user's security.

Now, that information may be listed in some federal database. But it's never communicated to the end retailer or consumer, which itself is a policy failure.

Now, security is worth paying for and it matters to all of us. Another casualty of the European policy is network investment. In the last two decades, the level of private network investment in Europe has been cut in half. It was once one-third of the world's total. But today, it's 15 percent.

Regulators have removed the incentive to invest, and unsurprisingly, the region is two years behind on 5G.

Now, thankfully, the U.S. has maintained a high level of private investment, which has generally increased year over year. Americans are less than five percent of the world's population, but they enjoy more than 25 percent of the world's privately provisioned network resources.

It's an amount that is approaching \$90 billion annually, almost \$2 trillion since 1996. This is a staggering success and it reflects a bipartisan consensus to focus on facilities-based competition.

Now, a myopic focus on low prices is not only misguided, it's also unsafe. Moreover, it does not address complex problems we are talking about today, which require multi-disciplinary approaches.

However, there is one maxim which can help us. People adopt services, not networks. The demand for broadband is what economists call derived demand.

Consumers adopt broadband for the services they get from the networks, not from the networks themselves. This is important because you can't fix with supply solutions what are inherently demand problems.

Now, in the testimony today, we are referencing many organizations such as NDIA, Pew, and John Horgan from the Technology Policy Institute, who note that the gaps in broadband adoption can be attributed to age, income, and education.

Now, closing these gaps is largely about empowering individuals, not favoring any one firm or technology.

Now, the single best thing we can do for internet adoption and inclusion is to support our current growing economy. It continues to deliver increased wages, employment, and opportunity.

When people have more money in their pockets, they can buy more of all goods and services, including broadband. Now, I am thrilled that we are in the midst of a blue-collar boom where wages are rising fastest for the poorest and youngest among us.

Moreover, we have a record level of employment for women and people of color. With historic tax cuts and deregulation, thousands of new opportunities have sprouted across the country. These empower people to seek new skills, better jobs, and ownership of a home, all of which are factors which increase the likelihood of adopting broadband.

Now, I lament that six million households are not online today because of cost. But the good news is that things are changing quickly for the better and the FCC has taken actions which have increased the availability of broadband and reduced deployment costs under the fantastic work of Chairman Ajit Pai.

These include \$1.5 billion in Connect American funds to 700 rural homes and businesses in 45 states, an additional \$5 billion for over 300,000 households, \$1 billion to Puerto Rico and the U.S. Virgin Islands, and my favorite accomplishment of all is cutting \$1 billion in costs by ending the reports that the FCC no longer uses.

In closing, I encourage the committee to allow the flourishing of the exciting bottom-up solutions we've heard today and it's important that this committee would also focus on the issues of national importance, notably, spectrum and security, which are intertwined with our global race to 5G.

And so I remind you to think about what needs to be done at the state and local level and not have an urge that every problem needs to be fixed by the Federal Government.

Thank you for this time today.

[The prepared statement of Ms. Layton follows:]



Statement before the House Energy and
Commerce Committee Subcommittee on Communications and Technology
On Empowering and Connecting Communities Through Digital Equity and Internet
Adoption

Testimony from Roslyn Layton

Roslyn Layton, PhD
Visiting Scholar

January 29, 2020

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Chairman Pallone, Ranking Member Walden, Subcommittee Chairman Doyle, Ranking Member Latta, and members of the subcommittee, thank you for the opportunity to testify today on internet adoption and digital inclusion. I am pleased to offer some highlights of the academic and empirical literature, some practical experience, and some policy recommendations on these topics. My comments are informed by my work as a researcher with the American Enterprise Institute (AEI) and the Center for Communication, Media, and Information Technologies (CMI) at Aalborg University in Denmark. At CMI we bring multidisciplinary perspectives and problem-based learning to our inquiries. CMI also partners with Ghana Telecom University College to host doctoral students and learn about these questions in emerging countries. I have written articles and book chapters about the policy challenges and solutions to digital adoption across countries.¹ I have also edited a book on gender and digital inclusion.² And I am honored to serve as the vice chair of the Program Committee of the Telecom Policy Research Conference.

The case of Denmark itself is instructive for this topic. Denmark is perhaps the world's leading digital nation as measured by access, use, and skills. Denmark has opted not for broadband subsidies and price regulation, instead allowing consumers and providers to determine their preferences, albeit with appropriate transparency disclosures. However, the government digitized all its services to force individuals and enterprise to adopt the internet. This also served to lower cost of service provision.³

Highlights from the Academic and Empirical Literature

The many articles on internet adoption can be boiled down to one important point: People adopt services, not networks.⁴ The demand for broadband is "derived demand": Consumers adopt broadband for the services they get from networks, not for the networks themselves. To maximize the value of broadband for its users, it is important then to allow the many facets of consumer demand to be manifested.

When a centralized authority mandates the parameters of broadband, it limits and reduces the preferences that individual consumers can express. Price controls and one-size-fits-all mandates deny consumers their freedom of choice and force them to pay for content, data, and features they do not necessarily recognize or value. Moreover, the hitherto shaping of the broadband market by speed requirements (an arbitrary parameter regulators selected because of its relative ease of measurement) has reduced consumers' ability to select and contract for their preferred features, such as quality, customer service, safety, durability, and flexible pricing.⁵

¹ For example, see Knud Erik Skouby and Idongesit Williams, eds., *The African Mobile Story* (Denmark: River Publishers, 2014); and Datis Khajeheian, Mike Friedrichsen, and Wilfried Mödinger, eds., *Competitiveness in Emerging Markets: Market Dynamics in the Age of Disruptive Technologies* (Berlin, Germany: Springer, 2018).

² Idongesit Williams, Olga Millward, and Roslyn Layton, eds., *Gender Gaps and the Social Inclusion Movement in ICT* (Hershey, PA: IGI Global, 2018).

³ Joseph Kane and Roslyn Layton, "Alternative Approaches to Broadband Policy: Lessons on Deregulation from Denmark" (working paper, Mercatus Center, Arlington, VA, March 22, 2017), <https://www.mercatus.org/publications/technology-and-innovation/alternative-approaches-broadband-policy>.

⁴ Justin Hurwitz and Roslyn Layton, "Debatable Premises in Telecom Policy," *John Marshall Journal of Information Technology & Privacy Law* 31, no. 4 (2015), <https://repository.jmls.edu/jitpl/vol31/iss4/1/>.

⁵ Layton and Howell, "How Title II Harms Consumers and Innovators," AEI, July 14, 2017, <https://www.aei.org/research-products/report/how-title-ii-harms-consumers-and-innovators/>.

To realize digital inclusion, policy should therefore focus more on demand than supply. Consumers have a diverse set of needs, and not everyone wants to be included in the same way. In editing the book *Gender Gaps and the Social Inclusion Movement in ICT*, I learned there is no one right policy for “digital inclusion.” There are different needs and approaches, and in a free society, policy should allow individuals to express their preferences.

In the hearing memo, Chairman Pallone highlighted the National Telecommunications and Information Administration (NTIA) survey.⁶ The report notes that the US has 100 million households online, itself a bipartisan policy success that should be recognized. Importantly in the last decade, the cost of computing equipment being a barrier has fallen from 21 to 4 percent as a reason for not being online. Interestingly, 16.2 million households are not online because of lack of need or interest, a number that has increased significantly in the past decade.⁷ An additional six million households report that cost of internet access is the barrier to internet adoption. This is important because for two-thirds of the people not online, making the internet available or faster will not help them access it.

Pew offers valuable research on internet adoption and has followed the issue closely for 15 years, noting nine out of 10 Americans using the internet regularly.⁸ Gaps that remain can be attributed to age, income, education, and community type. These factors do not presuppose that one network or mode is preferable. Moreover, closing these gaps is largely about empowering individuals, not favoring any one firm or technology.

Indeed, the single best thing we can do for internet adoption and inclusion is to support the framework for our current growing economy, which continues to deliver increased wages, employment, and opportunity. To the extent that people have more money in their pockets, they can buy more of all goods and services, including broadband. As an economic matter, broadband takes up a decreasing share of people’s income, so it makes little sense to reduce the cost of broadband versus addressing the other areas that take up a greater portion of income. Americans spend more on housing, transportation, education, food, clothing, and even discretionary travel than on broadband. It is illogical to attack a single line item in the monthly budget that accounts for less than \$100, when the smarter approach would be to reduce the cost of the items costing hundreds, if not, thousands of dollars per month.

Nevertheless, despite the data showing that US has some of the lowest prices per unit cost to connect online and some of the lowest entry level prices anywhere in the world, some believe that the price of broadband is too high.⁹ This is likely the unintended consequence of the historical broadband policy which has favored the interest of Silicon Valley to minimize their data transit costs. The practical effect of this policy is that the end users pays 100 percent of the last mile access cost while the content provide provides little to nothing.

In a free multisided market, content providers would play a greater role to support last mile network

⁶ Rafi Goldberg, “Unplugged: NTIA Survey Finds Some Americans Still Avoid Home Internet Use,” US Department of Commerce, National Telecommunications and Information Administration, April 15, 2019, <https://www.ntia.gov/blog/2019/unplugged-ntia-survey-finds-some-americans-still-avoid-home-internet-use>.

⁷ “The proportion of offline households citing lack of need or interest has increased from 39 percent in 2009 to 58 percent in 2017.” Goldberg, “Unplugged.”

⁸ Pew Research Center, “Internet/Broadband Fact Sheet,” June 12, 2019,

<https://www.pewresearch.org/internet/fact-sheet/internet-broadband/>.

⁹ <https://www.mercatus.org/publications/technology-and-innovation/innovation-investment-and-competition-broadband-and-impact>

cost, and individuals would practice more discretion to the content they access. Ideally we would see different cost sharing models depending on supply and demand. In any case, moving to more decentralized model, should allow greater cost sharing among the largest parties that use the network, more diversity in connectivity options, and a better fit for consumers' preferences and budget.

John Horrigan, a leading researcher on broadband adoption, notes:

Even with the availability of low-cost offers, it remains a challenge to encourage the remaining disconnected people to sign up for broadband service. And we still have limited understanding of how newly-connected low-income people use the internet and how it affects their lives.¹⁰

This underscores that policy meant merely to promote low-cost solutions does not address individual needs.

The national discussion on privacy also underscores that many are overwhelmed by being online, so this offers an important counterpoint in the rush to dictate inclusion with a predetermined set of factors. The notion of a privacy right—indeed, a right to not be online—could explain why some among the 16 million households offline do not believe the internet is useful. It appears that for some, being offline is a choice, and it raises an important question of whether such a freedom is honored in the digital society.

Moreover, important research from the Organisation for Economic Co-operation and Development (OECD) shows there is not a linear relationship between the presence of information technology in the home and classroom and student performance.¹¹ There is no evidence that higher broadband speeds are required for improved student performance. Mr. Pallone's citation that three million school-age children without internet access at home is concerning; however these children are likely suffering from a variety of challenges, such as lack of parent availability, a stable living situation, and so forth.¹² It is misguided use of broadband policy to think that subsidized internet will itself remedy education performance, when larger systematic factors need to be addressed and, in so doing, would likely resolve the connectivity issue.

Practical Experience with Broadband Adoption

I mentioned that content providers could play a greater role to support network deployment, and indeed, advertising-supported broadband is a possibility. Afterall advertising is what supports the millions of services on the internet itself. Moreover, broadband providers have tried many ways to reduce the cost of their services to end users, particularly with free and discounted offers to compete in the marketplace. This marketing should be welcomed and encouraged. Consumers love such programs, but sometimes these programs do not meet the aesthetic preferences of self-appointed consumer

¹⁰ John B. Horrigan, *Reaching the Unconnected: Benefits for Kids and Schoolwork Drive Broadband Subscriptions, but Digital Skills Training Opens Doors to Household Internet Use for Jobs and Learning*, Technology Policy Institute, August 2019, 2, https://techpolicyinstitute.org/wp-content/uploads/2019/08/Horrigan_Reaching-the-Unconnected.pdf.

¹¹ Bronwyn Howell, "Do More Computers and Software Really Make Students Better Learners?," AEIdeas, September 22, 2015, <https://www.aei.org/technology-and-innovation/computers-software-really-make-students-better-learners/>.

¹² Naomi Schaefer Riley's work provides valuable insight and explanation to the complex issue of child welfare. See American Enterprise Institute, "Naomi Schaefer Riley," <https://www.aei.org/profile/naomi-riley/>.

advocates and regulatory elites who may block these diversity-enhancing market developments.¹³ My empirical research demonstrates how the poor are harmed when policy restricts pricing flexibility.¹⁴

Indeed, T-Mobile's Binge On and Music Freedom were wildly popular, prompting millions of customers to switch. But the response of the 2015 Federal Communications Commission (FCC) and the California legislature was to shut down programs that consumers love. MetroPCS was one of the first firms to offer 4G wireless service. In 2010, after analyzing its customer behavior and making engineering enhancements in its network, MetroPCS developed an attractively priced 4G plan with free YouTube for low-income rural residents. But the plan was ultimately torpedoed by consumer advocates who complained to the FCC.¹⁵ MetroPCS, unable to compete with such a regulatory straitjacket, was ultimately acquired, reducing the number of mobile operators.

This regulatory discrimination extends to many welfare-enhancing activities such as health care providers subsidizing the cost of prenatal videos and mobile operators daring to enter the highly concentrated online advertising industry. This ideological prejudice, in which regulators, not consumers, decide the broadband products we get to have, costs our economy about \$30–\$40 billion annually,¹⁶ an amount equal to four times what we spend on the Universal Service Fund each year. We could have closed the digital divide years ago, had our regulatory policy not prioritized aesthetic purity (and some content provider profits) over the welfare of the poor.¹⁷

Consider that before broadband, Netflix sent a DVD by the US Postal Service. The customer paid for a subscription, and Netflix paid the postage. Now that Netflix is online, the customer still pays the subscription fee, but Netflix sends the postal fee to the broadband provider. The broadband provider thus must collect that fee from the entire subscriber base, whether or not they subscribe to Netflix. Netflix has grown its customer base without meaningfully having to increase its delivery costs. Indeed, video from such leading firms as Netflix and YouTube accounts for 20 percent of all downstream traffic in the US.¹⁸ However, these firms do not meaningfully participate in defraying the cost of last mile broadband networks.

¹³ Marvin Ammori, "T-Mobile Is Likely Violating Net Neutrality," Slate, December 15, 2015, http://www.slate.com/articles/technology/future_tense/2015/12/t_mobile_s_binge_on_program_likely_violates_net_neutrality.html.

¹⁴ Roslyn Layton and Silvia Elaluf-Calderwood, "Zero Rating: Do Hard Rules Protect or Harm Consumers and Competition? Evidence from Chile, Netherlands and Slovenia," August 15, 2015, <https://ssrn.com/abstract=2587542>. Additional discussion at Howell, Bronwyn E. and Layton, Roslyn, Evaluating the Consequences of Zero-Rating: Guidance for Regulators and Adjudicators (August 2016). TPRC 44: The 44th Research Conference on Communication, Information and Internet Policy 2016. <https://ssrn.com/abstract=2757391>

¹⁵ Brent Skorup, "If You're Reliant on the Internet, You Loathe Net Neutrality," RealClearMarkets, February 12, 2014, https://www.realclearmarkets.com/articles/2014/02/12/if_youre_reliant_on_the_internet_you_loathe_net_neutrality_100893.html.

¹⁶ George S. Ford, "Net Neutrality, Reclassification and Investment: A Counterfactual Analysis," Phoenix Center for Advanced Legal & Economic Public Policy Studies, April 25, 2017, <http://www.phoenix-center.org/perspectives/Perspective17-02Final.pdf>.

¹⁷ <https://arstechnica.com/information-technology/2017/05/a-trump-fcc-advisors-proposal-for-bringing-free-internet-to-poor-people/>

¹⁸ Sandvine, "The Global Internet Phenomena Report," 2019 <https://www.sandvine.com/global-internet-phenomena-report-2019>

Data from the International Telecommunications Union on internet penetration provide additional insight. India's telecom regulator boasts of having the most restrictive internet traffic rules and price controls.¹⁹ Unsurprisingly, only one in three Indians is online today. Indeed, if India allowed the pricing flexibility practiced in other emerging countries, there could be as many as 400 million more Indian internet users today, and the country's gross domestic product would get a significant bump.

It is helpful that we study some market success stories. Comcast has taken the research on broadband adoption to heart, incorporating devices and skill training into its first-time internet adoption program. Comcast's Internet Essentials (IE) added eight million new users in eight years, better results than any government program. This was done without subsidies. Notably, Comcast is redoubling its commitment to IE without any regulatory mandate to do so.²⁰

It is encouraging to see states and cities taking a proactive approach. For example, some two dozen states have already adopted model codes for 5G and small cell deployment.²¹ This is crucial to speed deployment and support competition by multiple providers. Moreover, the process to find local partners and join complementary assets should be encouraged. This is the essence of innovation, and such cooperation is essential for developing the apps and services for 5G.

Naturally cities and states want to improve their residents' welfare. However, the notion of "digital inclusion" should not be the justification to add costs to network deployment—for example digital inclusion fee on broadband providers. Frequently this is done as a way for financially stressed cities to find new sources of revenue. This fee creates the same distortion as taxes on communication service, making it more expensive for the end user and reducing the resources for deployment.²² When cities do this, they also reduce the resources that can be deployed in rural areas.

Moreover, some states and localities attempt an end run around federal policy defined by Congress—for example, with partisan litigation efforts brought by states to either remove or reinstate FCC policy.²³ These efforts are costly and counterproductive and distract resources away from the six million individuals we ostensibly want to help.

Policy Recommendations

¹⁹ Roslyn Layton, "Why Does California Want to Adopt India's Failed Internet Regulation?," *Forbes*, July 13, 2018, <https://www.forbes.com/sites/roslynlayton/2018/07/13/why-does-california-want-to-adopt-indias-failed-internet-regulation/#42673ff4541a>.

²⁰ Roslyn Layton, "8 Million Low Income Households Connected in 8 Years—Policy Takeaways from Comcast's Internet Essentials," *Forbes*, August 7, 2019, <https://www.forbes.com/sites/roslynlayton/2019/08/07/8-million-low-income-households-connected-in-8-years-policy-takeaways-from-comcasts-internet-essentials/>.

²¹ Heather Morton, "Mobile 5G and Small Cell 2019 Legislation," National Conference of State Legislatures, July 17, 2019, <https://www.ncsl.org/research/telecommunications-and-information-technology/mobile-5g-and-small-cell-2019-legislation.aspx>.

²² Roslyn Layton, "Where Are the Silicon Valley Firms When It Comes to Digital Inclusion in San Jose?," *Forbes*, November 16, 2018, <https://www.forbes.com/sites/roslynlayton/2018/11/16/where-are-the-silicon-valley-firms-when-it-comes-to-digital-inclusion-in-san-jose/>.

²³ Roslyn Layton, "Never-Ending Net Neutrality Litigation Means Lawyers Always Win," *AEIdeas*, October 9, 2019, <https://www.aei.org/technology-and-innovation/never-ending-net-neutrality-litigation-means-lawyers-always-win/>.

Traditional modes of broadband subsidies, however well-intentioned, are ineffective and unsustainable. The surcharge on the Universal Service Fund, just one component of the many federal broadband subsidy programs, has risen from 3 percent in 1998 to 24.4 percent today.²⁴ This is a growing tax levied on a declining service that falls hardest on the poorest people. The Lifeline program needs revolutionary, not evolutionary change.²⁵ Rather than throw more good money after bad, we should improve existing programs. Fortunately, the FCC is reversing this trend and deserves the right to try.

Under FCC Chairman Ajit Pai's leadership, the FCC is on the right track to close the digital divide, and these efforts should continue. This includes but is not limited to the Connect America Fund (CAF) Phase II reverse auction, the first time use of an innovative model in which operators bid for connect an area by lowest cost.²⁶ This program attempts to focus funds on areas with little to no network build-out, not displace existing investment.²⁷ In the EU, providing subsidies to areas with existing networks is a violation of state aid rules.²⁸ CAF II has allowed \$1.5 billion to be distributed to connect more than 713,000 homes and businesses nationwide. The auction was also open to all network types and through intermodal, competitive bidding, the FCC reduced \$3.5 billion from the \$5 billion expected to connect these unserved areas.²⁹ I also welcome the proposed \$20.4 billion Rural Digital Opportunity Fund in applying the lessons of the reverse auction to expand broadband in unserved rural areas.³⁰

Also laudable are the FCC's efforts to improve wireline³¹ and wireless network regulation³² so that these networks can be built more quickly and with less money³³ and that the transition to modern broadband networks can be accelerated.³⁴ The FCC is also combatting abuse by franchising authorities, practices which increases the cost of cable to end users and reduce deployment.³⁵

²⁴ Daniel Lyons, "Universal Service Fund Budget Cap Promotes Efficiency, Sustainability," AEIdeas, August 19, 2019, <https://www.aei.org/technology-and-innovation/telecommunications/universal-service-fund-budget-cap-promotes-efficiency-sustainability/>.

²⁵ <https://www.aei.org/technology-and-innovation/paternalism-and-prediction-errors-revisiting-lifelines-minimum-service-standards/>

²⁶ <https://www.fcc.gov/document/connect-america-auction-expand-broadband-713176-rural-locations>

²⁷ Federal Communications Commission, "Connect America Fund (CAF)," February 2, 2017,

<https://www.fcc.gov/general/connect-america-fund-caf>.

²⁸ Roslyn Layton, "Municipal Broadband: A Wolf in Sheep's Clothing?," AEIdeas, November 7, 2013,

<https://www.aei.org/technology-and-innovation/telecommunications/municipal-broadband-wolf-sheeps-clothing/>.

²⁹ Ajit Pai, statement before the Subcommittee on Financial Services and General Government, Committee on Appropriations, US Senate, May 7, 2019, <https://docs.fcc.gov/public/attachments/DOC-357354A1.pdf>.

³⁰ Federal Communications Commission, "FCC Fact Sheet: Rural Digital Opportunity Fund," January 9, 2020,

<https://docs.fcc.gov/public/attachments/DOC-361785A1.pdf>.

³¹ <https://www.fcc.gov/document/accelerating-wireline-broadband-infrastructure-deployment>

³² <https://www.fcc.gov/document/wireless-infrastructure-nprm-and-noi>

³³ Roslyn Layton, "The FCC Fast-Track 5G Wireless. Now It Proposes the Same for Cable.," AEIdeas, July 15, 2019,

<https://www.aei.org/technology-and-innovation/telecommunications/the-fcc-fast-tracked-5g-wireless-now-it-proposes-the-same-for-cable/>

³⁴ <https://docs.fcc.gov/public/attachments/DOC-347790A1.pdf>

³⁵ Roslyn Layton, "How Local Government Gets in the Way of Better, Faster, and Cheaper Broadband," AEIdeas, February 27, 2019, <https://www.aei.org/technology-and-innovation/telecommunications/how-local-government-gets-in-the-way-of-better-faster-cheaper-broadband/>.

Under then Chairman Upton and Sub-Committee Chairman Walden in 2014, the Energy & Commerce Committee led an effort to modernize the Communications Act in 2014,³⁶ an important and overdue effort that came to an abrupt halt. Yet this work must still be done as the exigence of regulatory siloes deters competition and innovation in a world in which communications, content, and computing have converged. That we fail to realize individual preferences for internet adoption and inclusion likely reflects that regulatory frameworks from the last century persist. Consider that telephone regulation is 86 years old and still on the books; cable, 36 years; mobile wireless, 25 years. To realize greater digital adoption and inclusion, we must update our outdated laws to reflect the dynamic competition in the marketplace³⁷ and modernize obsolete regulatory structures.³⁸ This is the kind of bold work that this Commission should do, not doubling-down on outdated policies written in the age of the rotary phone.

One area where Congress must act is spectrum, and only Congress has the power to solve the problem. We connect to the internet increasingly and wirelessly. While the US has made important strides in 5G, we still need major spectrum reform. The US government sits on most of the frequencies, and an audit of federal spectrum is needed to develop a 21st century approach to the resource. Only Congress can authorize auctions, appropriate audit funds, and enable the agency reforms needed so that the US is on the same page to win the global 5G race.³⁹ While the US has many advantages, it lacks sufficient mid-band spectrum, particularly the C-band, the frequencies which 23 nations have already prioritized for 5G and where standards for devices will be harmonized globally. The window of opportunity for the US is closing on this front, and it is critical that this committee encourage the FCC to conduct a speedy public auction for the C-band. This is also the fastest way to get 5G to rural areas.⁴⁰

I also encourage this committee to consider the role of satellite broadband.⁴¹ New high throughput satellites offer 100 Mbps, making this technology a contender for rural and urban use. This demands immediate attention as the Chinese are already closing their digital divide for 100 million people via satellite and will export the model globally.⁴² Moreover satellite technologies needn't be subsidized.

In your reflection on digital adoption and inclusion, please remember that people adopt services, not networks; that price flexibility serves consumers; and that modernizing regulation makes network deployment quicker and cheaper. Thank you for this opportunity to testify today.

³⁶ <https://republicans-energycommerce.house.gov/commactupdate/>

³⁷ Richard Bennett et al., "Comments on Communications Act Modernization," January 31, 2014," <https://ssrn.com/abstract=2388723>.

³⁸ <https://www.aei.org/research-products/report/the-signs-and-symptoms-of-regulatory-obsolescence-in-network-industries/>

³⁹ <https://www.forbes.com/sites/roslynlayton/2020/01/07/ces-displays-a-grand-vision-for-mobile-tech-but-not-the-spectrum-to-deliver-it/>

⁴⁰ American Enterprise Institute, "C-Band Spectrum and the Race for 5G," YouTube, January 24, 2020, <https://www.aei.org/multimedia/c-band-spectrum-and-the-race-for-5g-in-60-seconds/>. See further <https://www.forbes.com/sites/roslynlayton/2019/11/13/on-c-band-spectrum-auction-speed--is-all-that-matters/>

⁴¹ Roslyn Layton, "For Mid-Band Spectrum, Markets Can Produce Better Outcomes Than Regulators Can Engineer," AEIdeas, July 26, 2019, <https://www.aei.org/technology-and-innovation/telecommunications/for-mid-band-spectrum-markets-can-produce-better-outcomes-than-regulators-can-engineer/>.

⁴² Larry Press, "Hongyun Project—China's Low-Earth Orbit Broadband Internet Project," CircleID, June 4, 2019, http://www.circleid.com/posts/20190604_hongyun_project_chinas_low_earth_orbit_broadband_internet_project/; and Robert Clark, "China Joins Global Satellite Broadband Party," Light Reading, November 22, 2019, <https://www.lightreading.com/asia-pacific/china-joins-global-satellite-broadband-party-/d/d-id/755882>.

Mr. DOYLE. The gentlelady yields back.
It's now my pleasure to recognize Ms. Sohn for 5 minutes for your opening statement.

STATEMENT OF GIGI SOHN

Ms. SOHN. Chairman Doyle, Ranking Member Latta, members of the subcommittee, thank you for inviting me to testify on two crucial issues—digital equity and broadband adoption.

It's indisputable that broadband internet is an essential tool for participation in our society, our economy, and our culture. Many job applications and government services are only available online.

Seventy percent of teachers assign homework that must be submitted online. Numerous TV shows and movies are exclusively online.

Broadband internet access has fundamentally changed the nature of commerce, education, and health care. It enables unprecedented flexibility for Americans to choose where they live, how they work, and how they care for their families.

However, 141 million people in the U.S. don't have fixed home internet at the FCC's outdated 25 down three up broadband definition. That's nearly 43 percent of Americans.

What's more alarming is that home broadband adoption rates aren't increasing. It's remained stable for the past three years. That makes this hearing even more important.

The digital divide affects every region of our country, although communities of color and low-income Americans are far more likely not to have broadband.

A recent study by the Pew Research Center showed 79 percent of white U.S. adults have home broadband, while the same is true of only 66 percent of black adults and 61 percent of Hispanics.

The study showed that 92 percent of Americans making \$75,000 or more annually have home broadband. Only 56 percent making less than \$30,000 annually do.

The racial component of the digital divide is a byproduct not only of income inequality but of structural inequality like discriminatory housing and lending practices.

This divide persists because of the high cost of broadband and computers in the U.S. Study after study shows this.

Current research suggests that low-income people can only afford to pay about \$10 monthly for broadband. Anything more competes with other utility bills and the cost of food.

Meeting the goal of universal connectivity and providing fixed broadband about \$10 per month requires a multi-pronged strategy, what my Benton colleague Jonathan Sallet calls and affordability agenda.

It includes, one, price transparency. Carriers should be required to submit nonpromotional pricing information, including equipment and other fees, to the FCC, which should make that information public.

The FCC or Congress should also restore the fixed broadband consumer disclosure label. Both will help consumers make informed choices about the price, quality, and value of their broadband service.

Two, more competition. More competition means lower broadband prices. Even under the FCC's overly optimistic data, nearly 30 percent of the country has access to no more than two providers at 25/3 speeds and 95 percent has access to no more than two at speeds of 110.

If we really want communities to lead, Congress should prohibit states from blocking communities that wish to build their own broadband networks and also give a bidding preference to open access networks when allocating deployment subsidies.

These networks allow any broadband provider to provide last-mile service. An open access network in Utah gives residents of 15 cities a choice of 10 ISPs. Most Americans can't imagine that.

Three, is a strong Lifeline program. Congress should strengthen Lifeline and make it easier for the most vulnerable in society to access the program.

It should make clear that Lifeline can support broadband service, restore the broadband provider designation to bring new competition to the program, and give USAC the resources it needs to expedite the hard launch of the national eligibility verifier. It will make eligibility determinations automatic for many applicants.

Policymakers should also consider providing additional subsidies so Lifeline recipients can purchase fixed broadband. The \$9.25 subsidy doesn't go very far for broadband needed to do research papers, apply for jobs, and access telehealth services.

Four, low-cost broadband for federally subsidized networks. The FCC disburses billions of dollars annually to mobile and fixed providers to build out their networks. It should require those carriers to provide a \$10 a month high-speed broadband plan to low-income Americans.

Five, support for access to and through community anchor institutions. Some community anchor institutions have adopted programs that extend learning beyond their walls. Libraries have been experimenting with mobile wireless hotspot programs which allow people to check out broadband hotspots for home use.

Schools have been providing buses equipped with wifi for students to use after hours. Congress or the FCC should clarify that these programs are eligible for e-rate funds.

Finally, last but not least, Congress and the FCC should assist local communities' digital inclusion efforts. Local advocates are doing the hard work of educating residents about low-cost broadband options, providing digital literacy and job skills training, and distributing low-cost computers. Congress should pass the Digital Equity Act, which establishes grant programs to support state and local digital equity efforts.

These funds will incentivize more states and localities to develop digital inclusion plans and will provide sorely needed funds to the small nonprofits doing the hard work of connecting their communities.

Thank you. I look forward to your questions.

[The prepared statement of Ms. Sohn follows:]

Written Testimony of

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Before the

Congress of the United States
House of Representatives
Committee on Energy and Commerce
Subcommittee on Communications and Technology

“Empowering and Connecting Communities through Digital Equity and Internet Adoption”

January 29, 2020

Chairman Doyle, Ranking Member Latta, Chairman Pallone, Ranking Member Walden and esteemed members of the subcommittee—my name is Gigi Sohn. I am a Distinguished Fellow with the Georgetown Institute for Technology Law & Policy, and a Senior Fellow and Public Advocate at the Benton Institute for Broadband & Society.¹ I served as Counselor to former Federal Communications Commission (“FCC”) Chairman Tom Wheeler from November 2013 to December 2016, and co-founded the non-profit Public Knowledge, which remains a leading voice on broadband policy issues. During my time at the FCC, I worked on the Commission’s efforts to modernize its Lifeline and E-Rate programs which provide broadband subsidies, respectively, for low-income Americans and schools and libraries.

Thank you for inviting me to testify today on two vital, but overlooked, issues that are critical to connecting every American to broadband—digital equity and broadband adoption. Many of the recommendations I will make today for closing the digital divide are taken from the Benton Institute for Broadband & Society’s recent report, *Broadband for America’s Future: A Vision for the 2020s*,² authored by former FCC General Counsel Jonathan Sallet.

Introduction

It is beyond dispute that broadband Internet is a vital tool for participation in our society, our economy, and our culture. Many jobs can only be applied for online, even service-industry positions, such as those at fast food chains.³ Access to government services, which are largely migrating online, requires reliable Internet access, especially as brick and mortar government facilities like the Department of Motor Vehicles and post offices are growing scarcer. Broadband access is also critical to successful primary education: seven out of ten schools assign homework that must be submitted online.⁴ But we don’t even need to look that far for examples: the only way I was permitted to submit this written testimony was online!

But beyond replacing previously in-person interactions, broadband Internet access has become a vehicle for enormous, and previously unfathomable, opportunity for individuals and businesses alike. Broadband enables artists to sell their crafts on Etsy, students to take online courses from Coursera and Khan Academy, far-flung friends and family to connect on email and social media, rural residents to access high-quality health care, and workers to telework. These tremendous

¹ I would like to thank my Georgetown Law Institute for Technology Law & Policy colleagues, DeVan Hankerson and Jeff Gary, for assisting me with this testimony.

² JONATHAN SALLET, BROADBAND FOR AMERICA’S FUTURE: A VISION FOR THE 2020S, BENTON INST. FOR BROADBAND & SOC’Y 1–150 (2019), https://www.benton.org/sites/default/files/BBA_full_F5_10.30.pdf [hereinafter Benton Broadband Report].

³ Digital Inclusion Advocate Deb Socia told the Benton Institute that she sat in two different fast-food restaurants in two different cities on two different Sundays. Each time she saw a man approach a manager and beg to submit a paper job application. Both were turned down; one began to cry. “‘What does it mean,’ Socia asked, ‘when you can’t flip a burger in America without Internet access?’” Benton Broadband Report, *supra* note 2 at 64.

⁴ FED COMM’NS COMM’N, THIRD REPORT AND ORDER, FURTHER REPORT AND ORDER, AND ORDER ON RECONSIDERATION, IN THE MATTER OF LIFELINE AND LINK UP REFORM AND MODERNIZATION (WC DOCKET NO. 11-42); TELECOMMUNICATIONS CARRIERS ELIGIBLE FOR UNIVERSAL SERVICE SUPPORT (WC DOCKET NO. 09-197); CONNECT AMERICA FUND (WC DOCKET NO. 10-90) 1–224 (2016), <https://docs.fcc.gov/public/attachments/FCC-16-38A1.pdf> (see also Commissioner Rosenworcel’s separate statement at 200).

advances change the nature of work, education, and healthcare and enable greater flexibility for connected Americans to choose where they live, how they work, and how they care for their families. Connection changes lives.

But it's important to pause here. The success stories of broadband are far from equally distributed. Despite the centrality of broadband Internet access to American society, a full 141 million people in the United States do not subscribe to fixed home Internet at the FCC's now outdated 25 down, 3 up (25/3Mbps) definition for broadband. In 2020, that speed requirement is far from sufficient for many of the standard needs of consumers and small-business owners.⁵ That is nearly 43% of the American population. Think about that. If you walk down the street, a person you meet is nearly as likely as not to not have broadband Internet at home.

The reasons for non-adoption are not as straightforward as some may like to claim.⁶ While 7% of unconnected Americans don't subscribe because no fixed broadband is available where they live, that still leaves 36% of U.S. residents who reportedly *do* have access to 25/3 Mbps fixed broadband and either choose to subscribe to a slower tier or simply go without any service at all.⁷

What is even more alarming is that home broadband adoption rates aren't improving – they have remained stable for the past three years.⁸ Now is the time for policymakers to act. Addressing the reasons why so many do not subscribe to a broadband connection is critical to ensuring that all Americans can benefit from the opportunities that broadband provides.

Minorities and Low-income Americans, Both Rural and Urban, Are Disproportionately on the Wrong Side of the Digital Divide

The digital divide affects every geographic region of our country. While policymakers have focused disproportionately on broadband deployment in rural areas of the United States, Americans who live in cities also face enormous challenges to broadband connectivity.⁹ Indeed, noted broadband adoption researcher John Horrigan found that the country's broadband adoption problem is three times higher in urban areas than rural.¹⁰

⁵ Karl Bode, *The Current Definition of 'Broadband' Is Too Slow and Ajit Pai Refuses to Change It*, VICE (Aug. 13, 2018), https://www.vice.com/en_us/article/qvmn3q/the-current-definition-of-broadband-is-too-slow-and-ajit-pai-refuses-to-change-it.

⁶ See Dana Floberg, *The Truth About the Digital Divide*, FREE PRESS (Sept. 25, 2019), <https://www.freepress.net/our-response/expert-analysis/insights-opinions/truth-about-digital-divide>.

⁷ *Legislating to Connect America: Improving the Nation's Broadband Maps Before the H. Comm. on Energy & Commerce, Subcomm. on Comm'n's and Tech.*, 116th Cong. (2019) (statement of Dana J. Floberg, Policy Manager, Free Press and Free Press Action Fund Figure 1 at 9).

⁸ PEW RES. CTR., *Internet/Broadband Fact Sheet* (June 12, 2019), <https://www.pewresearch.org/internet/fact-sheet/internet-broadband/#who-has-home-broadband>.

⁹ Bill Callahan, *Worst Connected Cities 2018*, NDIA (Oct. 23, 2019), <https://www.digitalinclusion.org/blog/2019/10/23/worst-connected-cities-of-2018>.

¹⁰ John B. Horrigan, *Analysis: Digital Divide Isn't Just a Rural Problem*, DAILY YONDER (Aug. 14, 2019), <https://www.dailyyonder.com/analysis-digital-divide-isnt-just-a-rural-problem/2019/08/14>.

A closer look reveals that while unconnected Americans are spread out geographically, communities of color and low-income Americans are far more likely not to adopt broadband than are whites and individuals and families with higher incomes. According to a recent study by the Pew Research Center, 79% of white U.S. adults have home broadband, while only 66% of black Americans and 61% of Hispanic Americans do so. The same study showed that 92% of Americans making \$75,000 or more have home broadband, while 78% of Americans making between \$30,000 and \$74,999 have it, and only 56% making less than \$30,000 have home broadband.¹¹

Additionally, analysis by my colleagues at Free Press of the November 2017 U.S. Census Bureau Current Population Study (“November 2017 CPSs”) showed similarly troubling numbers. As of year-end 2017, 84% of white people adopted home Internet, compared to 79% of Hispanic people, 76% of Black people, 70% of American Indian/Alaska Natives, and 81% of Native Hawaiian/Pacific Islanders.¹² The same analysis showed only 42% of households with annual family incomes below \$20,000 had fixed wired home Internet service, compared to 83% of households with incomes above \$100,000.¹³

Racial disparities in adoption can be explained somewhat by income inequality along racial lines. But when Free Press controlled for income along with other factors like age, job, and education, it still found many racial and ethnic groups continue to lag behind whites in home broadband adoption. This can be attributed to structural inequality, such as housing discrimination and discriminatory credit and lending practices that resulted in segregated, underserved communities and facilitated disparate broadband deployment in high- and low-income areas as well as unequal access to technology.¹⁴

Some commentators have argued that the main reason racial minorities and low-income Americans don’t adopt broadband is that they fail to see its “relevance,” and that affordability is no longer a major factor.¹⁵ But claims of non-relevance are often tied to other barriers, including cost of Internet access, lack of digital literacy and equipment costs.¹⁶ According to the November 2017 CPS, lower income quintiles are far more likely than higher income quintiles to cite their inability to afford broadband as a primary reason for not adopting. To be sure, nearly 25% of non-adopting households making less than \$20,000 annually say that lack of affordability is the most important reason they do not have broadband. Black and Hispanic households (at 29% and 26% respectively) are more likely than white households (19%) to say they would subscribe to

¹¹ Monica Anderson, *Mobile Technology and Home Broadband 2019*, PEW RES. CTR. 1–23 (June 13, 2019), <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019>.

¹² *Legislating to Connect America: Improving the Nation’s Broadband Maps Before the H. Comm. on Energy & Commerce, Subcomm. on Commc’ns and Tech.*, *supra* note 7 at 12–13.

¹³ *Id.* at 14–15.

¹⁴ Fed. Commc’ns Comm’n, *Strategies and Recommendations for Promoting Digital Inclusion* at 1–30 (Jan. 11, 2017), <https://www.fcc.gov/document/strategies-and-recommendations-promoting-digital-inclusion>.

¹⁵ Blair Levin & Larry Downes, *Cities, not Rural Areas, Are the Real Internet Deserts*, WASH. POST (Sept. 13, 2019), <https://www.washingtonpost.com/technology/2019/09/13/cities-not-rural-areas-are-real-internet-deserts>.

¹⁶ Floberg, *supra* note 6.

broadband if it were available at a lower price and are also more likely to seek broadband service outside the home, especially when it is provided for free, as in libraries or coffee shops.¹⁷

Cost Remains A Primary Barrier to Broadband Adoption

As discussed above, cost of both broadband and equipment remains a primary barrier to broadband adoption for Americans across country. Study after study demonstrates this.¹⁸

The high price of broadband isn't simply a pet complaint of public interest advocates. Americans pay some of the highest broadband prices in the world. In 2017, a study comparing the price of broadband among the 35 OECD countries found that Americans pay the second-highest prices. In the U.S., various studies put the average cost of a broadband connection somewhere between \$60 and \$72 a month.¹⁹ Despite the fact that broadband is already expensive, some of the nation's largest broadband providers have recently raised their prices.²⁰ For low-income and even some middle-income families, these prices, already prohibitive, are now insurmountable.

So why are U.S. broadband prices so high? One major reason is the lack of competition across the country. Lack of competition creates adoption challenges in urban and particularly in rural areas. The truth is, it's difficult to understand exactly how much competition there is. Even though the FCC recently changed the method by which broadband providers measure who has access to broadband, the FCC's current competition data is based on system that allows broadband providers to measure their service on a broad census-block level, and further allows them to count areas as served as long as the provider *could* theoretically provide service, even if that provider does not currently and does not plan to do so. Even under these overly optimistic numbers, the FCC's data shows that about 28% of U.S. households have access to no more than

¹⁷ This week, the Schools, Health & Libraries Broadband Coalition and the Kansas City Public Library released a report showing a strong relationship between low household broadband adoption levels and poverty. The report also shows that rising economic tides in cities has little to do with recent growth in broadband adoption, but that declines in poverty rates do. JOHN B. HERRIGAN, EXAMINING KANSAS CITY'S PROGRESS IN ADDRESSING THE DIGITAL DIVIDE: A COMPARATIVE ANALYSIS (2019), https://www.shlb.org/uploads/Policy/Policy%20Research/SHLB%20Research/SHLB_KC_Broadband.1203_final.pdf.

¹⁸ See Monica Anderson, *Mobile Technology and Home Broadband 2019*, PEW RES. CTR. 1–23 (June 13, 2019), <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019>; COLIN RHINESMITH, DIGITAL INCLUSION AND MEANINGFUL BROADBAND ADOPTION INITIATIVES, BENTON INST. FOR BROADBAND & SOC'Y 1–53 (2016), <https://www.benton.org/sites/default/files/broadbandinclusion.pdf>; Brian Whitacre & Colin Rhinesmith, *Broadband Un-Adapters*, 40 TELECOMM'NS POL'Y 1–13 (2016), <https://www.sciencedirect.com/science/article/pii/S0308596115001937>.

¹⁹ Karl Bode, *AT&T Jacks Up Broadband Rates With Misleading "Property Tax" Fee*, TECHDIRT (Oct. 18, 2019), <https://www.techdirt.com/articles/20191014/07525843188/att-jacks-up-broadband-rates-with-misleading-property-tax-fee.shtml>; see Jon Brodtkin, *AT&T Raises Prices 7% by Making Its Customers Pay AT&T's Property Taxes*, ArsTechnica (Oct. 11, 2019), <https://arstechnica.com/tech-policy/2019/10/att-raises-prices-7-by-making-its-customers-pay-atts-property-taxes>; Christian Hetrick, *Happy Holidays From Comcast. Your Cable Bill Is Going Up Again*, INQUIRER (Dec. 13, 2019), <https://www.inquirer.com/business/comcast/comcast-cable-bill-rise-broadcast-fee-regional-sports-20191213.html>; Karl Bode, *Charter Spectrum Once Again "Competes" By... Raising Prices*, TECHDIRT (Sept. 9, 2019), <https://www.techdirt.com/articles/20190828/08453242874/charter-spectrum-once-again-competes-raising-prices.shtml>.

²⁰ See, Bode, *supra* note 17; Brodtkin, *supra* note 17; Hetrick, *supra* note 17.

two providers at the 25/3 Mbps speed threshold for broadband and 95% have access to no more than two providers at speeds of 100/10 Mbps.²¹

This lack of competition most negatively affects three demographics: middle-income households, lower-income households, and rural America. BroadbandNow found that households in states with a median household income of less than \$60,000 frequently pay more for the same 25/3 Mbps than do households with a median household income of more than \$60,000. That is, broadband providers take the opportunity to charge lower-income Americans more for the same service. It also found the least dense 10% of areas defined by ZIP code pay an average of 37% more for residential wired broadband at 25/3 Mbps than those in the 10% densest areas. That lower-income communities pay higher prices is no surprise, since wealthier communities are two to three times more likely to have more than two choices for broadband providers than are communities with lower-than-average household incomes.²²

However, when new competition is introduced in broadband markets, the benefits are demonstrable. As described in greater detail in *Broadband for the 2020s*, numerous studies have shown that consumers benefit with lower prices and better quality of service as the number of broadband providers increases beyond zero, one or two.²³ Direct evidence from places like Kansas City, Chattanooga Tennessee, Wilson North Carolina, and Longmont Colorado demonstrate that new competition either from a private or municipal broadband provider results in incumbent providers dropping their prices and increasing their speeds-but not in nearby areas the new competition didn't serve.²⁴

But competition alone won't solve the adoption gap. Current research suggests that low-income people can only afford to pay about \$10 per month for broadband. For example, nine focus groups of low-income residents of Kansas and Maine showed that few would subscribe to broadband service at \$50 a month, but many would do so at \$10 a month.²⁵ And after speaking with eight low-income communities across the United States, Simmons University researcher Colin Rhinesmith found that \$10 – \$15 a month was the limit people were willing to pay, and that “anything more costly would be challenging for them to afford.”²⁶ For those on limited incomes, even \$10 – 15 a month Internet access competes with other utility bills and even the cost of food.²⁷

The United States Needs an Affordability Agenda

To meet the goal of universal connectivity and the challenge of providing fixed broadband at about \$10 per month, the United States must develop a multi-pronged strategy. This is what my

²¹ FED. COMM'NS COMM'N, *Internet Access Service Reports*, (Aug. 29, 2019), <https://www.fcc.gov/internet-access-services-reports>.

²² Benton Broadband Report, *supra* note 2 at 47.

²³ *Id.*

²⁴ *Id.* at 50-51

²⁵ *Id.* at 65

²⁶ *Id.* at 66

²⁷ *See id.*

Benton colleague and former FCC General Counsel Jonathan Sallet calls an “Affordability Agenda.” Below I discuss the policy strategies that should be part of such an agenda.

Require Price Transparency

As we have seen in the E-Rate context, when broadband providers are required to be transparent about their prices, competitive pressures often drive prices down.²⁸ While the FCC has finally changed the type of data broadband providers must submit to demonstrate who does and does not have access to broadband, the carriers are not required to submit pricing information. Congress should mandate that the FCC require broadband providers to submit non-promotional pricing information and should require public disclosure of added fees and equipment costs. In addition, Congress or the FCC should restore the Fixed Broadband Consumer Disclosure Label (reproduced below as Figure 1),²⁹ which was withdrawn by the FCC in 2017. This label will help consumers make informed choices about the price, quality, and value of their broadband service.

²⁸ EDUCATION SUPERHIGHWAY, 2017 STATE OF THE STATES: FULFILLING OUR PROMISE TO AMERICA’S STUDENTS 19 (2017), https://s3-us-west-1.amazonaws.com/esh-sots-pdfs/educationsuperhighway_2017_state_of_the_states.pdf.

²⁹ Jon Brodtkin, *FCC’s “Nutrition Labels” for Broadband Show Speed, Caps, and Hidden Fees*, ARSTECHNICA (Apr. 4, 2016), <https://arstechnica.com/information-technology/2016/04/fccs-nutrition-labels-for-broadband-show-speed-caps-and-hidden-fees>.

Broadband Facts			
Mobile broadband consumer disclosure			
Device Compatibility			
If you want to use your existing device, learn more about compatibility .			
If you want to obtain a device, learn more about prices and other options .			
Choose Your Data Plan - These prices do not include costs for obtaining a device from us.			
	High Speed Data allowance per month		
	GB	GB	GB
Monthly charge			
When you exceed the data allowance			
Learn more about other included services/features .			
Additional pricing options, plans and promotions can be found here .			
Coverage Map			
Charges and Terms Common to All Plans			
Monthly fees			
One-time fees			
Government Taxes and Fees, and Other Carrier Surcharges May Also Apply: Varies by location			
Performance - Individual experience may vary			
G		G	
Typical speed	•	Typical Speed	
Typical latency	•	Typical latency	
Typical Packet Loss	•	Typical Packet Loss	
Network Management			
Application-specific network management practices?			
Subscriber-triggered network management practices?			
More details on network management			
Privacy		See our privacy policy	
Complaints or Inquiries		To contact us: online (123)456-7890; To submit complaints to the FCC: online (888)225-5322	
Learn more about the terms used on this form and other relevant information at the FCC's website.			

Figure 1. Sample Broadband Nutrition Label

Promote Competition

As discussed above, more competition means lower broadband prices for everyone. There are many things that Congress could do to incentivize more competition, but I will focus on three:

First, Congress should prohibit states from blocking communities that wish to build their own broadband networks, be they municipal networks, public-private partnerships or other arrangements. While numerous cities and towns across the nation have successfully built gigabit speed networks at low prices, 19 states still have laws on the books that prohibit either the

building or the expansion of such networks.³⁰ These laws, passed at the urging of the largest incumbent broadband providers, are not only flatly anticompetitive, they prohibit deployment in rural communities that the incumbents have no intention of ever serving. Most destructively, these laws directly raise the price of broadband for the most vulnerable Americans.

Second, Congress should give a bidding preference to “open access networks” when allocating broadband deployment subsidies. Open access networks allow any broadband provider to connect to a network and provide last-mile service to a customer. This model has become very popular for community broadband builds. For example, the Utah Telecommunications Open Infrastructure Agency (UTOPIA) network is the largest open-access network in the United States, comprised of a consortium of 15 Utah cities. UTOPIA owns and operates the fiber middle-mile and last-mile network and permits private service providers to use the infrastructure to offer retail digital services to customers in UTOPIA member cities. Currently there are 10 Internet service providers offering residential service and 30 offering business services on UTOPIA’s network. This level of broadband competition is practically unheard of in the United States.

Finally, either the FCC or Congress should prohibit exclusive contracts between broadband providers and so-called multi-tenant environments (“MTEs”) like apartment buildings and condominiums. Nearly one-third of Americans, including many low-income Americans, live in MTEs and have no choice of broadband provider, leaving them at the mercy of whatever price the provider decides to set. The FCC began a proceeding to examine these exclusive deals last summer but has not yet issued an order.³¹

Protect and Strengthen the Lifeline Program

In 2016 the FCC moved the Lifeline program into the digital age by applying the \$9.25 subsidy to both fixed and mobile broadband service. For more than 12 million Americans, this is the only way they can afford the Internet access they need to apply for jobs, submit homework, and receive government services. Importantly, the FCC’s 2016 *Lifeline Modernization Order* opened the door for new competition in the Lifeline program by offering an FCC-administered path to becoming a Lifeline provider.³² Where in the past a Lifeline provider needed permission from each state in which it sought to do business, the 2016 Order permitted one-stop-shopping for a broadband provider to become a Lifeline Broadband Provider (“LBP”). What the FCC hoped to accomplish was more competition for Lifeline service, which would lower prices and allow the small subsidy to go further in getting robust broadband service to low-income Americans.

³⁰ Kendra Chamberlin, *Municipal Broadband Is Roadblocked Or Outlawed In 25 States*, BROADBANDNOW (Apr. 17, 2019), <https://broadbandnow.com/report/municipal-broadband-roadblocks>.

³¹ FCC, NOTICE OF PROPOSED RULEMAKING AND DECLARATORY IMPROVING COMPETITIVE BROADBAND ACCESS TO RULING IN THE MATTER OF IMPROVING COMPETITIVE BROADBAND ACCESS TO MULTIPLE TENANT ENVIRONMENTS (GN DOCKET NO. 17-142); PETITION FOR PREEMPTION OF ARTICLE 52 OF THE SAN FRANCISCO POLICE CODE FILED BY THE MULTIFAMILY BROADBAND COUNCIL (MB DOCKET NO. 17-91) FCC.GOV 1-65 (2020), <https://www.fcc.gov/ecfs/filing/07122510817317>.

³² FED. COMM’NS COMM’N, *FCC Modernizes Lifeline Program for Low-Income Consumers* (Apr. 27, 2016), <https://www.fcc.gov/document/fcc-modernizes-lifeline-program-low-income-consumers>.

Nine new carriers sought and received LBP status. But in his first weeks in office, FCC Chairman Pai reversed those determinations, and later, in an order issued in November 2019, the FCC eliminated LBP status altogether, requiring once again that Lifeline providers seek state-by-state permission to provide service.³³ When I was at the FCC, I was told in no uncertain terms by several large broadband providers that such a requirement ensured that they would not participate in the Lifeline Program.

The current FCC has been unsuccessful in driving a stake through the heart of the Lifeline program by disallowing mobile resellers from participating in the program. Approximately 70% of Lifeline recipients get service from these companies. A decision by the U.S. Court of Appeals, D.C. Circuit reversing an FCC order prohibiting resellers from obtaining an additional tribal Lifeline subsidy ensured that the Commission could not similarly prohibit resellers from obtaining any Lifeline subsidies.³⁴

But this has not deterred the FCC majority from trying to kill Lifeline by a thousand cuts. In addition to eliminating the federal LBP status, the November 2019 Lifeline Order added new hurdles to the Lifeline application process, and in a further request for comments, asked whether (1) Lifeline providers should be prohibited from providing free phones for customers in person or at all, and (2) Lifeline recipients should be asked whether they would buy broadband in the absence of a Lifeline subsidy. This latter inquiry caused FCC Commissioner Geoffrey Starks to remark that “I don’t believe we’ve ever probed elderly Medicare recipients on how much they actually value their medical services; nor should we probe vulnerable Lifeline recipients on how much they value their connectivity.”³⁵

Eliminating competition from the Lifeline program, erecting hurdles to applying and receiving Lifeline funds, asking invasive questions about how much applicants value broadband and proposing to require “skin in the game” from Americans for whom paying for a handset could mean less food on the table or fewer clothes on their back is intended to do one thing—dampen demand for the program so severely that it shrinks to nothing.

The rickety base upon which the future of Lifeline now sits was exacerbated by the FCC’s 2017 decision to reclassify broadband as an information service. Since under the Communications Act, Lifeline funds are available only to telecommunications services, it is highly questionable whether Lifeline funds can be used for broadband at all under this classification. In its decision

³³ FCC, FIFTH REPORT AND ORDER, MEMORANDUM OPINION AND ORDER ON RECONSIDERATION, AND FURTHER NOTICE OF PROPOSED RULEMAKING IN THE MATTER OF BRIDGING THE DIGITAL DIVIDE FOR LOW INCOME CONSUMERS (WC DOCKET NO. 17-287); LIFELINE AND LINK UP REFORM AND MODERNIZATION (WC DOCKET NO. 11-42); TELECOMMUNICATIONS CARRIERS ELIGIBLE FOR UNIVERSAL SERVICE SUPPORT (WC DOCKET NO. 09-197) FCC.GOV 1-110 (2019), <https://www.fcc.gov/document/fcc-further-strengthens-lifeline-against-waste-fraud-and-abuse> [hereinafter November 2019 Lifeline Order].

³⁴ National Lifeline Association v. FCC, No. 18-1026 (D.C. Cir. 2019), <https://cases.justia.com/federal/appellate-courts/cadc/18-1026/18-1026-2019-02-01.pdf?ts=1549035042>.

³⁵ See 2019 Lifeline Order, *supra* note 31.

upholding the FCC's repeal of the 2015 *Open Internet Order*, the D.C. Circuit remanded this very question back to the FCC.³⁶

Congress should halt the war on Lifeline and instead strengthen the program. Among other things, it should (1) make clear that Lifeline funds can support broadband Internet access; (2) restore the federal LBP designation and require the FCC to authorize new federal LBPs; (3) remove hurdles to the application process and instead give the Universal Service Administration Corporation (USAC) the resources it needs to expedite the hard launch of the National Eligibility Verifier system, which was mandated by the 2016 Modernization Order but is still in "soft-launch" mode across the country. This system would make Lifeline enrollment automatic when applicants are enrolled in a qualifying federal program; (4) vacate the FCC's November 2019 *Further Notice of Proposed Rulemaking* in the Lifeline docket.³⁷

There are two other important ways Congress and the FCC can strengthen Lifeline and ensure that a program that is underutilized³⁸ is meeting the needs of those who can benefit most. First, Congress or the FCC should consider enlarging the scope of eligibility. In 2019 the income eligibility for Lifeline was 135% of the federal poverty guidelines: \$28,796 for a family of three. But there is nothing magical about that number, and indeed, eligibility for federal programs ranges between 125–185% of the federal poverty line (\$39,461), and some federal programs don't use poverty guidelines at all. As the Benton Broadband Paper puts it "[t]he FCC's 135 percent standard should be re-examined in light of the importance of access to broadband, the evolution of the broadband market, the cost of expanding eligibility and, of course what people can afford."³⁹

Second, Congress and the FCC should consider whether an additional subsidy should be provided so that Lifeline recipients can purchase robust fixed broadband service. Currently, 90% of Lifeline recipients purchase mobile service, in large part because those services are usually free with the \$9.25 subsidy, while fixed services are not. And as the FCC itself recognizes, mobile service is not a substitute for fixed broadband. It is much more difficult to apply for a job, do homework, or take online courses with only a mobile connection, which often comes with strict data caps and much slower speeds.⁴⁰

Condition Federal Funding on Offering Low-Cost Broadband Service

³⁶ *Mozilla Corp. v. FCC*, No. 18-1051 (D.C. Cir. 2019), <https://cases.justia.com/federal/appellate-courts/cadc/18-1051/18-1051-2019-10-01.pdf?ts=1569940362>.

³⁷ 2019 Lifeline Order, *supra* note 31.

³⁸ For example, in 2018, the Lifeline program spent just 50% of its budget, \$1.14 billion out of \$2.28 billion. Jon Brodtkin, *Ajit Pai works to cap funding for rural and poor people, gets GOP backing*, ARSTECHNICA (June 4, 2019), <https://arstechnica.com/tech-policy/2019/06/fcc-funding-for-poor-people-and-rural-areas-ajit-pai-says-lets-cap-that>.

³⁹ Benton Broadband Paper, *supra* note 2 at 68.

⁴⁰ Despite my best efforts and those of my FCC colleagues, we could not in 2016 convince any new major cable operator who provides low-cost fixed broadband service to become a Lifeline provider (Cox was a lifeline provider at the time and remains one). Indeed, any chance of that occurring vanished when the FCC eliminated the federal LBP designation in November 2019.

The FCC disburses billions of dollars annually to mobile and fixed providers to build out their networks. Indeed, the FCC will vote this week to approve the \$20.4 billion Rural Digital Opportunity Fund (RDOF) that will make grants to broadband providers to build high-speed networks in high cost areas. This money will be disbursed without any guarantee that the recipients will help to make broadband more affordable for their low-income customers. Congress and the FCC should consider as a requirement for funding for broadband deployment the provision of 50/50 Mbps service (with other requisite performance criteria including unlimited usage) for \$10 per month to eligible recipients.⁴¹

Support Programs that Make Low-Cost Computing Devices Available

While most of my testimony has focused on the cost of Internet access, the 2019 Pew survey also found that 6% of non-adopters cited the cost of computing equipment as the primary reason they don't have broadband at home.⁴²

There are a number of non-profits around the country that are providing low-cost or free computers, mostly refurbished, to families in need, including PCs for People,⁴³ Connecting for Good in Kansas City Missouri,⁴⁴ Free Geek in Oregon,⁴⁵ and E2D in Charlotte North Carolina.⁴⁶

As discussed in greater detail below, Congress can support these and other state and local digital inclusion initiatives by passing the Digital Equity Act and other legislation that supports state and local efforts to connect their citizens.

Provide Support for Access "To and Through" Community Anchor Institutions

Anchor institutions, such as schools, libraries and healthcare providers, not only provide Internet access to populations most impacted by the digital divide (low-income families, job seekers, students, and seniors), these important institutions also provide "jumping off" points to extend additional broadband deployment to surrounding residential and business customers.

Some community anchor institutions have adopted programs that extend broadband access beyond their walls. For example, libraries and schools in a number of cities and towns across the nation have been experimenting with mobile wireless hotspot programs, which allow people to "check-out" broadband hotspots for home use. Schools have been providing buses equipped with Wi-Fi for students to use after hours.

Currently, the FCC only permits E-Rate funds to be used for broadband access to and within the physical school or library. That restriction makes no sense at a time when 70% of schools assign homework online and where learning occurs far beyond the classroom. Congress should clarify

⁴¹ Benton Broadband Paper, *supra* note 2 at 69.

⁴² Monica Anderson, *Mobile Technology and Home Broadband 2019*, PEW RES. CTR. (June 13, 2019), <https://www.pewresearch.org/internet/2019/06/13/mobile-technology-and-home-broadband-2019>.

⁴³ *PCs for People*, <https://www.pcsforpeople.org>.

⁴⁴ *Connecting for Good*, <https://www.connectingforgood.org>.

⁴⁵ *Free Geek*, <https://www.freegeek.org>.

⁴⁶ *E2D*, <https://www.e-2-d.org>.

that programs like hotspot lending, Wi-Fi on buses and other innovative broadband programs that promote K-12 learning are eligible for E-Rate funds.

Congress and the FCC Should Assist Local Communities' Efforts to Connect their Residents

If digital equity is ever to be achieved, it will be because of the efforts of local communities. While the majority of my testimony has focused on what the federal government can do to make broadband more affordable, the hard work of making sure that non-adopters (1) are aware of how to access low cost broadband services and programs like Lifeline; (2) have the skills to use the Internet both for personal and professional use; and (3) can obtain low-cost computing equipment and technical support, falls to community digital inclusion advocates who are dedicated to ensuring that all of their residents are connected.

Already, with assistance from groups like the National Digital Inclusion Alliance and Next Century Cities, cities and towns around the country have adopted digital inclusion plans. These plans include providing digital literacy training, job skills training, low-cost computers and information about where low-cost connectivity can be found. In places like Kansas City, Boston, Charlotte, Chicago and Austin, a digital inclusion plan becomes a starting point for coordination between non-profits, community anchor institutions and government entities to ensure that as many people on the wrong side of the digital divide are being reached.⁴⁷

Congress and the FCC can and should assist these efforts. First and foremost, Congress should pass the Digital Equity Act of 2019, which establishes two grant programs to be administered by the National Telecommunications and Information Administration ("NTIA") to promote digital equity nationwide. The legislation creates an annual \$120 million formula grant program for all 50 states, the District of Columbia, and Puerto Rico to fund the creation of digital equity (or inclusion) plans in each State. It also creates an annual \$120 million competitive grant program to support digital equity projects undertaken by individual groups, coalitions and other communities of interest. Finally, the Digital Equity Act tasks NTIA with evaluating digital equity projects and providing local, state and federal policymakers with detailed information about which projects are most effective.

These funds, which pale in comparison to what the federal government gives to for-profit network operators to deploy broadband, will incentivize more states and localities to develop their own digital inclusion programs and will provide sorely needed funds to the small community-based nonprofits that are doing the hard work of connecting their communities on the ground.

Finally, the FCC should revisit its own recommendations for helping communities promote digital inclusion which it made pursuant to the *2016 Lifeline Modernization Order*. Those recommendations are included in a report entitled *Strategies and Recommendations for*

⁴⁷ Benton Broadband Paper, *supra* note 2 at 73.

Promoting Digital Inclusion,⁴⁸ and since it was published just before the FCC leadership turned over in January 2017, has been largely ignored. But the report, in addition to highlighting best practices for closing the digital divide, also made a number of recommendations for how the FCC can engage in outreach and develop partnerships with consumer groups, community groups, philanthropic organizations, local and federal government officials and industry to increase broadband adoption and digital literacy for the unconnected.

Conclusion

Achieving digital equity will take a multipronged strategy and the collective efforts of local, state and federal governments, community anchor institutions, the non-profit sector, philanthropies, industry and countless individuals. I look forward to working with the Subcommittee on the recommendations I have put forth today.

⁴⁸ FED. COMM'NS COMM'N, *Strategies and Recommendations for Promoting Digital Inclusion* (Jan. 11, 2017), <https://www.fcc.gov/document/strategies-and-recommendations-promoting-digital-inclusion>.

Mr. DOYLE. Thank you.

Mr. Sural, you are now recognized for 5 minutes.

STATEMENT OF JEFFREY R. SURAL

Mr. SURAL. Good morning, Mr. Chairman. Thank you, and thank you to Ranking Member Latta and the subcommittee members for holding this hearing.

My name is Jeff Sural. I am the director of the Broadband Infrastructure Office at the North Carolina Department of Information Technology.

Our office leads state initiatives to ensure all North Carolinians can access affordable, reliable high-speed internet service.

On behalf of Governor Roy Cooper and State Chief Information Officer Eric Boyette, I would like to thank you for the opportunity to share North Carolina's approach to ensure all individuals and communities have the capacity and tools needed to fully participate in a 21st-century society and economy. The governor has made closing the digital divide one of his top priorities.

My oral statement will focus on four key points.

One, this is a problem. Two, its root causes have been identified. Three, it is solvable. And four, governments at all levels can and should lead.

Policy, better data, grants, subsidies, and partnerships all work. In North Carolina, much like the rest of the country, not having the internet in your home makes it harder to see a doctor or nurse without leaving your house, harder to do homework outside the classroom, harder to start a small business, and in many cases harder to interact with your state and local government.

In North Carolina, we recognize that adoption was a problem several years ago. In 2015, before writing the state's broadband plan, we surveyed 3,500 local leaders.

When asked what their concerns were regarding the lack of broadband in their communities; the number-one response was the homework app.

We wrote our state plan with equal attention paid to availability and adoption, focussing on the homework app. Our findings are validated by data collected nationally. The FCC estimates that 94.8 percent of North Carolina's households have access to broadband. Alarming, only 59 percent of those with access are adopting.

The most recent report from the American Community Survey put North Carolina's household adoption rate for all internet speeds at 78 percent.

The survey also found that more than 726,000 North Carolina households do not have access to a meaningful device, meaning a laptop, a desktop, or a tablet.

Based on our own research, we estimate that between one-quarter to half a million students fall into the homework gap. We recognized there was a problem and so we first worked to identify the root causes.

We found that broadband coverage is a key determinant of adoption. Of course, individuals can only adopt broadband in areas where it is available.

But subscription costs are the main barrier to adoption for those with access, followed by digital literacy, access to devices, and relevancy.

But, why this is a serious problem, is still misunderstood or underappreciated. Research shows that sheer availability of or access to broadband isn't enough to positively impact a local economy.

Rather, it is the adoption of it. When people have it in their homes and use it in ways that positively impact their economic outlook, we begin to see a positive relationship between broadband and a community's economic health.

In North Carolina, we are focused on tackling the barriers to adoption even as we invest in expansion of broadband infrastructure.

In 2017, we formed the Digital Equity and Inclusion Collaborative to gather and learn from nonprofit, universities, and state agencies who are working to close the digital divide.

Our office in the State Library of North Carolina won a \$250,000 two-year grant from the Institute of Museum and Library Services to launch a pilot program at local libraries that provides equipment and digital literacy training to families of K through 12 students in need.

We also partner with the state librarian and nine library systems to make equipment such as wifi hot spots or computers available to students.

In early 2019, our office partnered with the North Carolina Department of Human and Health Services Office of Rural Health to secure a grant from the Appalachian Regional Commission to identify the broadband and telehealth challenges and opportunities in 20 western counties.

This partnership also funded an expansion of East Carolina University's successful telepsychiatry program to four rural counties in eastern North Carolina.

Our larger municipalities have been leading the effort to close the digital divide for many years. For example, in Durham, a group of volunteers from various nonprofits and city agencies formed Digital Durham to close the homework gap in east Durham.

And, of course, in Charlotte, the nationally-recognized Charlotte Digital Inclusion Alliance is working aggressively and innovatively to close the region's digital divide.

North Carolina also boasts several nonprofits such as Cramden and RTP and E2D in Charlotte, both of whom refurbish used computers and distribute them to those in need, as well as provide digital literacy training.

Governments, particularly state governments, can play important leadership roles while pursuing evidence-based policymaking, convening stakeholders and educating the public.

Competition drives affordability and innovation. We should continue to work on policies that incentivize competition. But where market forces are not working, successful evidence-based solutions include grants, subsidies, partnerships between local governments, nonprofits, and internet service providers.

Thank you for the opportunity to speak today about North Carolina's comprehensive approach to closing the digital divide and I look forward to answering any questions.

[The prepared statement of Mr. Sural follows:]



NORTH CAROLINA DEPARTMENT *of*
INFORMATION TECHNOLOGY

Roy Cooper
Governor

J. Eric Boyette
Secretary and State Chief Information Officer

**EMPOWERING AND CONNECTING COMMUNITIES THROUGH
DIGITAL EQUITY AND INTERNET ADOPTION**

Testimony before

Subcommittee on Communications and Technology

Committee on Energy and Commerce

United States House of Representatives

January 29, 2020

Jeffrey R. Sural

**Director, Broadband Infrastructure Office
North Carolina Department of Information Technology**

Introduction

Good morning Chairman Pallone, Ranking Member Walden, Chairman Doyle, Ranking Member Latta, and members of the Subcommittee. My name is Jeff Sural, and I am Director of the Broadband Infrastructure Office (BIO) within the North Carolina Department of Information Technology (NCDIT).

On behalf of Governor Roy Cooper and State Chief Information Officer Eric Boyette, I'd like to thank you for the opportunity to share North Carolina's approach to ensure all individuals and communities have the information technology capacity needed for full participation in our society, democracy, and economy.

As the Members of the Subcommittee know, an affordable high-speed internet connection now is essential to living, learning, working, and thriving in the modern economy. In North Carolina, much like the rest of the country, not having the internet in your home makes it harder to see a doctor or a nurse without leaving your house; harder to do homework outside of a classroom that no longer gives you a textbook; harder to start a small business or pursue a career; and in many cases, harder to interact with your state and local government.

In North Carolina, Governor Cooper has prioritized expanding broadband access as well as encouraging adoption. In March 2019, he issued an executive order creating the Governor's Task Force on Connecting North Carolina and directing Cabinet agencies to take all available actions across state government to spur investment in broadband infrastructure, eliminate government obstacles to deployment, and close the digital divide and eliminate the homework gap.

Today, I will share our North Carolina perspective on the challenge of the digital divide and its impacts, discuss the barriers to broadband adoption, and describe our holistic approach to improving adoption across our state.

The adoption problem

In the broadband world we talk about broadband as two sides of the same coin: the access side—the access to the pipes and wires, and the adoption side—whether a household subscribes to the service. A household or a community needs both sides of the metaphorical coin to realize the value that broadband promises. In North Carolina we recognize adoption as an equally important factor to addressing the digital divide. We are leveraging grants and creating partnerships to understand the issue better, pilot innovative ideas, and create viable and sustainable solutions.

In recent decades, a wide range of organizations have shifted their services online including educational institutions, businesses, and government agencies. The reason for this shift is clear. Online services reduce organizations' costs and increase their efficiency. Importantly, the benefits of broadband adoption are not limited to organizations, but also extend to individuals.

For instance, research demonstrates that individuals who adopt broadband are more likely to find jobs, learn new skills, and successfully navigate social services than those who do not adopt. Improving adoption rates is, therefore, a key strategy for educational success, civic engagement and economic growth.

Low adoption results in a loss of opportunity: educational, economic, income, civic and cultural. The consequences undermine society by further dividing the haves from the have-nots. And while broadband adoption is a challenge felt in urban areas of North Carolina and across the country, the relative lack of investment in deployment of broadband infrastructure in rural areas concentrates these effects in ways that further depress economic opportunities.

Research shows that the sheer availability of or access to broadband isn't enough to positively impact a local economy. Rather it's the adoption of it, when people actually have it in their homes, and use it in ways that positively impact their economic outlooks—that we begin to see a positive relationship between broadband and a community's economic health.ⁱ

The adoption problem in North Carolina is clearly demonstrated in the Federal Communication Commission's annual reports. The FCC estimated in 2019 that 94.8 percent of North Carolina households have access to broadband (25Mbps/3Mbps), while only 59.4 percent of households adopt at that speed threshold (the U.S. average is 60.2 percent). While there are many well-documented and well-founded problems with the accuracy of the FCC's data, the gap between access and adoption is a real problem – one that cannot easily be blamed by a lack of interest in internet access.

The most recent report from the American Community Survey puts North Carolina's household adoption rate for all internet speeds at 78.3 percent (the U.S. average is 85.1 percent). That survey also found that 12.6 percent of households do not have a computer of any type and 5.9 percent only use a smartphone to access the internet. This means that 18.5 percent or 726,122 North Carolina households have no access to a meaningful device – a laptop, desktop, or tablet.

Individuals with lower levels of education, income, and who are elderly or disabled are less likely to adopt broadband.ⁱⁱ Research demonstrates that disparities by education and income are consistently larger than those observed by any other factor, including population density. The *2013 Citizens Survey* found that individuals with a graduate degree and who made \$100,000 or more per year were more than twice as likely to adopt broadband than those with less than a high school degree and who made \$15,000 or less per year. This suggests that individuals with lower levels of education and income are not adopting even in areas where broadband is readily available.

Broadband is a sector-crossing technology – it benefits all walks of life. When communities have affordable access and high adoption rates, opportunities in all sectors are made possible. However, the challenges created by the digital divide and the opportunities that are possible if we close it are unique in each industry.

For example, in the education sector, the digital divide manifests itself in what's called the homework gap. The homework gap occurs when students are assigned homework that requires using the internet, but they don't have access to an internet connection or device at home.

Similarly, telehealth is one of the many benefits of broadband. Telehealth is the virtual delivery of a wide variety of healthcare services, health information, and health education. We envision a North Carolina where any North Carolinian that wishes or needs to access health care services virtually is able to do so and where all health care facilities have the broadband capacity needed to operate effectively and efficiently. Telehealth relies upon consistent, reliable, and pervasive broadband.

We continue to explore the economic impacts of the digital divide on our state. More and more emerging research is quantifying this divide. For example, the Chamber Technology Engagement Center at the U.S. Chamber of Commerce and Amazon issued a report showing that adoption of digital tools by North Carolina's rural small businesses generated more than 15,000 jobs over the past three years.ⁱⁱⁱ While sales growth among this class of businesses exceeded 20 percent over that time period, the study estimates the rest of the state missed out on an additional 19 percent sales growth.

Other reports, like the Strategic Network Group's broadband calculator, estimate that an increase in the adoption of digital tools (e.g., selling, advertising, customer support) by just five percent of North Carolina's rural small businesses would create more than 6,000 jobs and generate \$16 million in tax revenues. This need is made more urgent by the fact that our small businesses employ 80 percent of the workforce.

Identifying barriers to adoption

Broadband coverage is a key determinant of adoption. Individuals can only adopt broadband in areas where it is available, which tend to be areas that are densely populated and thus incentivize investment by internet service providers. It is not surprising, therefore, that adoption rates are higher in densely populated areas than sparsely populated areas of the state. However, broadband coverage is not the only factor that limits adoption. Subscription costs, a lack of access to devices, relevancy, and digital literacy restrict adoption rates even in areas with sufficient broadband coverage.

Subscription cost is the main barrier to adoption among households with access. In 2015, the Pew Research Center found that subscription costs are the primary barrier to adoption for 33 percent of non-adopting households nationwide.^{iv} This is especially true among low-income households. As mentioned earlier, North Carolina's high-income households are more than twice as likely to adopt broadband than low-income households. A lack of access to a digital device—such as a laptop, tablet or computer also discourages broadband adoption. The 726,000 North Carolinian households who don't currently have a digital device are unlikely to subscribe to an internet service.

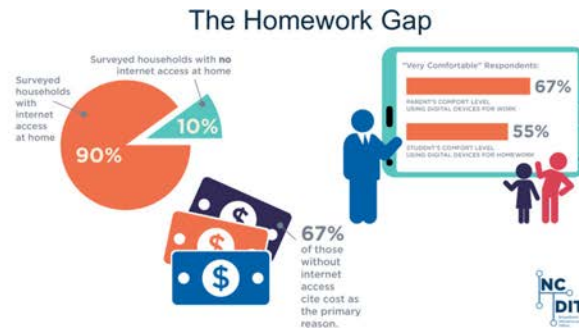
Relevancy and digital literacy also restrict adoption rates. Relevancy is the belief that broadband is useful or necessary for daily life. Research suggests that among North Carolinians who choose not to adopt broadband, 27 percent believe broadband is not useful and 43 percent believe that they simply do not need it.^v These findings are an improvement from 2011, when 33 percent reported that broadband is not useful and 49 percent reported that they did not need it.

Digital literacy is the ability to use broadband technology to find, evaluate, create, and communicate information.^{vi} Individuals who feel that they lack the knowledge to use broadband internet and related technologies or who feel that they are unable to learn how to use them have lower adoption rates. Research suggests that 20 percent of North Carolinians who do not adopt broadband believe that computers are difficult to use and 24 percent report that they do not know much about them. These numbers have increased since 2011, with 10 percent reporting that computers are difficult to use and 13 percent reporting that they do not know much about computers.^{vii}

Likewise, we can mitigate the cost barrier. In 2013, NC Broadband conducted a rigorous experimental study to examine how altering subscription costs affects adoption among low-income households. The study, referred to as [NC LITE-UP](#) (NC Linking Internet to Economically Underprivileged People), was conducted in Wilkes and Durham counties from January 2013 through August 2014. The study randomly assigned 179 households in those counties to receive broadband subsidies of 0, 50, or 100 percent. Results revealed that (1) households that received a subsidy had higher adoption rates than households that did not; (2) adoption rates among households that received 50 percent and 100 percent subsidies were similar; and (3) nearly 80 percent of households that received subsidies retained broadband service after the study ended.^{viii} This suggests that reducing subscription costs for low-income households, even temporarily, will increase adoption rates in this group.

Additionally, study participants became more fully active digital citizens, using the internet at home and in other settings at a much higher rate and for many additional purposes by the end of the project. With home access, the weight of their internet use shifted from the strongly pragmatic (job searches, government services, and paying bills) to much greater use to seek health and educational information, support social connections, and conduct e-commerce.

Last year, the Department of Information Technology's Broadband Infrastructure Office published "The Homework Gap in North Carolina," a report that provides communities and state and local policymakers with strategies to bridge the homework gap.^{ix} The report showed that at least 10 percent of the approximately 8,500 K-12 families surveyed did not have access to the internet at home. Those without access cited cost as the primary reason for not having access. Additionally, those without access were less comfortable helping their kids with digital homework.



We also partnered with the Department of Public Instruction and the State Board of Education to add homework gap questions to the bi-annual Teacher Working Conditions Survey to understand the frequency at which homework assignments are made that require internet and computer access. The survey showed that 70 percent of high school teachers, 60 percent of middle school teachers, and 43 percent of elementary school teachers regularly assign homework that requires internet access to complete. This means that too many of our state's children are unable to thrive in school, and many may not be prepared to fully participate in today's workforce simply because they don't have internet or the computer to use it at home.

North Carolina's solutions and initiatives to close the Digital Divide

In North Carolina, we are focused on tackling barriers to adoption even as we invest in the expansion of broadband infrastructure to improve availability across the state. The Department of Information Technology's Broadband Infrastructure Office and our colleagues across Governor Cooper's administration are working to support local investment and planning efforts, coordinate with digital equity leaders across the state, fully leverage federal and other grant resources, and partner with industry and the non-profit sector to identify in solutions to the digital divide.

We formed the N.C. Digital Equity and Inclusion Collaborative in 2017 to gather and learn from leaders in the digital equity community across the state who are working to close the digital divide. This collaboration allows us to strategically and comprehensively address the causes of the digital divide. The group's mission is to foster collaboration among digital equity and inclusion leaders to bridge the digital divide in North Carolina. The group consists of 17 organizations from across the state, including non-profits, universities, and state agencies. The Collaborative led the development of the plan to create three annual "days" designed to bring awareness and resources to address the three main causes of the digital divide. The three days are: 'Device Day,' 'Digital Literacy Day,' and 'Broadband Adoption Day,' and will be implemented in 2020.

The Broadband Infrastructure Office and the State Library of North Carolina won a \$250,000 two-year grant from the Institute of Museum and Library Services to launch a pilot program to address the homework gap. The pilot partnered our offices with the local school district and the regional library in Robeson County to provide WiFi hotspots and digital literacy workshops to 34 families. Every family that completed the program received a computer from Kramden, a non-profit computer refurbisher located in the Research Triangle Park that also conducts digital literacy training and coding camps for students. In July, the program expanded to include three additional counties, Caswell, Hyde and Mitchell. To date, 62 families in the four partner counties have attended the digital literacy workshops. By the end of the pilot program we will publish a digital literacy playbook for libraries and other community organizations.

As part of Governor Cooper's Hometown Strong program to support rural communities, NCDIT/BIO and the N.C. Department of Natural and Cultural Resources, home to the State Library, partnered with nine library systems and four municipalities in 14 different counties to pilot the Homework Help program. Each library received \$35,000 to purchase equipment such as Wi-Fi hotspots or computers to make available to students or other library patrons for home use. Counties include Anson, Bertie, Bladen, Chowan, Columbus, Edgecombe, Halifax, Hertford, Northampton, Richmond, Scotland, Tyrrell, Vance, Washington, and Martin.

At the same time, Governor Cooper's Task Force on Connecting North Carolina is updating the state broadband plan and creatively tackling issues like computer ownership, accessibility, and affordability.

In early 2019, our office partnered with the N.C. Department of Health & Human Services Office of Rural Health to secure a \$98,273 grant from the Appalachian Regional Commission POWER fund to investigate and identify gaps, challenges and opportunities in the existing broadband and telehealth infrastructure in 20 western N.C. counties and explore how to better use technology to improve health and healthcare in the region.

We also partnered with the Office of Rural Health and East Carolina University to expand telemedicine service through the N.C. Statewide Telepsychiatry Program (NC-STeP) in four eastern North Carolina counties. NC-STeP connects 80 or more hospital emergency departments across North Carolina to provide psychiatric assessments and consultations to patients. In 2020, the funding will assist NC-STeP in expanding to additional health departments who have undergone readiness and implementation assessments.

Many of our larger municipalities are also working to close the digital divide with local efforts. For example, in Winston-Salem, a small non-profit, WinstonNet, has hosted digital skills trainings in computer labs across the city for 20 years. Similarly, in Durham, a group of volunteers from various non-profits and city agencies formed Digital Durham to close the homework gap in communities in East Durham.

And of course, in Charlotte, a nationally renowned group called the Charlotte Digital Inclusion Alliance is working aggressively and innovatively to close the city and county's digital divide. The Digital Inclusion Alliance is a partnership between the city, county, Queens College, Digital Charlotte, Johnson C. Smith University, and non-profits like E2D (Eliminate the Digital Divide), a computer refurbishing non-profit in Davidson County that employs high school students to refurbish laptops and hosts device distribution days in schools and low-income neighborhoods.

Conclusion

For all North Carolinians to realize broadband's full benefits, federal, state, and local leaders must design and implement concerted efforts to address the four primary barriers to adoption: lack of availability, cost, relevance, and digital literacy.

Governments can play an important role by convening stakeholders and educating the public. Governments also have relationships with those groups where adoption rates are low. Existing social services can be leveraged to educate and inform about resources that may be available to encourage adoption.

Competition drives affordability and innovation. We should continue to work on policies that incentivize competition. Where market forces are not working, successful evidence-based solutions include grants, subsidies, tax credits, and partnerships. Grants to internet service providers have been shown to lower the capital expenditures for deployment and affordable services. In North Carolina, we have also used grants to fund digital literacy programs and homework gap programs. Subsidies to customers make services affordable, while tax credits incentivize good corporate citizenship by internet service providers. For example, prior to 2013 the state provided a tax credit to telephone and cell phone providers that accepted the FCC's Lifeline subsidy. When that tax credit sunset, many providers no longer accepted Lifeline customers.

In North Carolina we have found that partnerships between the public and private sectors, particularly at the municipal or regional level, that work to address the specific causes of the digital divide their communities face are the only way we'll close the digital divide. We believe our approach has led to a dramatic increase in the adoption of broadband throughout the state. Between 2014 and 2019 the state's broadband adoption rate increased approximately 44 percent.

Thank you for the opportunity to speak with you today about North Carolina's comprehensive approach to closing the digital divide. I look forward to answering any questions from members of the Subcommittee.

ⁱ Whitacre, B., Gallardo, R. & Strover, S. Does rural broadband impact jobs and income? Evidence from spatial and first-differenced regressions. *Ann Reg Sci* 53, 649–670 (2014). <https://doi.org/10.1007/s00168-014-0637-x>

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- ⁱⁱ Thom File and Camille Ryan. *Computer & Internet Use in the United States: 2013*. American Community Survey Reports. Washington, D.C.: 2013. <https://www.census.gov/history/pdf/2013computeruse.pdf> (accessed October 2015).
 - ⁱⁱⁱ U.S. Chamber Technology Engagement Center (C_TEC). Unlocking the Digital Potential of Rural America. March 2019. https://americaninnovators.com/rural-report/#state_NC (accessed Jan 2020).
 - ^{iv} Pew Research Center. *Home Broadband 2015*.
 - ^v Wilson and Powers. "Digital Technology and Internet Access Trends." 5.
 - ^{vi} Digital Literacy Task force (2011). *What is Digital Literacy?* Office for Information Technology Policy.
 - ^{vii} Wilson and Powers. "Digital Technology and Internet Access Trends." 5.
 - ^{viii} NC Broadband. LITE-UP Study. 3
 - ^{ix} The Broadband Infrastructure Office, North Carolina Department of Information Technology. The Homework Gap in North Carolina: A Pilot Study of K-12 Households. 2019. <https://www.ncbroadband.gov/homework-gap/>

Mr. DOYLE. Thank you.

So we have now concluded our openings and we are going to move to member questions. Each Member will have 5 minutes to ask questions of our witnesses. I will start by recognizing myself for 5 minutes.

Mr. Sural and Mr. Edmonds, when we talk about the challenges that our nation faces in deploying broadband nationally, I think everyone here can acknowledge that there are not sufficient private sector incentives to bring broadband to everyone and that the federal government has a necessary role to play.

But when it comes to digital equity, your respective governments are working to close the digital divide. But do you see those efforts succeeding in the long term if the federal government doesn't play any role in that to help you address that challenge and what kinds of long-term harms do you see if we continue to let this problem fester?

I will maybe start with Mr. Sural and then Mr. Edmonds, you can go next.

Mr. SURAL. Yes, sir. Thank you, Mr. Chairman.

Great question, and, you know, I think the way that we incentivize the internet service providers and incentivize good corporate citizenship is through the purse strings, frankly.

I mean, we have federal programs that fund deployment and those are—and we like those. We like money at the state level.

But if they were tied or conducted in concert with some adoption programs, I think that would be the way to really drive this issue home and make sure that there are digital literacy or other programs that would be available to those where these deployment dollars are going.

For example, in North Carolina we do have a state rural broadband grant program and we have advocated that we tie in a scoring for those applicants and they can increase their score if they create some sort of adoption program.

And it could be partnering with a nonprofit. Doesn't necessarily mean they have to run it. But something, and I think that's probably the first thing that we need to do.

Mr. DOYLE. Mr. Edmonds?

Mr. EDMONDS. Thank you, Mr. Chairman, for the question.

And locally, I would say that while we are able to essentially galvanize people around this issue, namely, the internet service providers and the private sector.

One thing that we have to be cognizant of—really what we are actually partnering on, so while Comcast and, you know, our local internet service providers have really stepped up in a major way. We don't want to get into the position to exhaust their generosity and I don't think that's actually a sustainable play.

When I had mentioned earlier in my testimony that we want to be able to be in the position to further incentivize. If we actually had some funding outside of goodwill I think that we would actually be able to do much more.

So I don't believe in the long term, what we are doing is sustainable. I think that it's commendable for all the partners at the table, and I do think that we will have an immediate impact, as we already are.

However, from a sustainable way, as technology continues to evolve, we need to have something that we can look to from a long-term strategy that's actually going to make sense.

Mr. DOYLE. Thank you.

Ms. Siefer, you talked about the skills gap for digital literacy in our workforce in your testimony, and for industries like manufacturing and agriculture, tell us what are the risks to employees that lack these skills as these industries change and are older workers missing out on opportunities?

How is this dynamic playing out in urban and rural communities?

Ms. SIEFER. Right. So we know that the jobs are out there. We know there are IT jobs or even the jobs that aren't necessarily defined as technical.

They are called, like, middle skill tech jobs where you need to understand how to use spreadsheets. You can flip back and forth between applications. You can feel confident that if you don't understand one app, it is oK, because you will figure it out.

So that's what we are missing. So those are the—it is a basic digital literacy skills but it's a continuum of skills. And so in order to help people be ready for those other jobs, which are out there, we know the jobs are there.

That is one of the things that is so frustrating. We have the jobs. But our folks don't have the skills, is that we have to help them where they are because it is intimidating.

Mr. DOYLE. Thank you.

Ms. Sohn, you have said that deployment or some people have said that the deployment of 5G services will reduce the price of broadband and that it will connect rural communities and help close the digital divide in low-income communities.

Do you really think those things are going to happen and, if not, why?

Ms. SOHN. I certainly didn't say that. I think it's really important to emphasize that there is so much that is still unknown and untested about 5G.

You know, the companies are not sure whether there is even a case for consumers to really benefit or whether this is an enterprise technology that allows for drones and self-driving cars and smart cities.

So we don't know that. What we also don't know is what the price is going to be. You know, Angela Siefer talked about the price of devices, which we do know are going to be expensive. Samsung just introduced a \$1,300 5G phone. But we have no idea what the monthly cost is going to be.

But what we absolutely do know and what the executives—what both Verizon and T-Mobile executives have admitted is that in rural areas, 5G is probably not going to be a whole lot better than 4G. That's about the best they are going to get.

Mr. DOYLE. Thank you.

I would note to my colleagues that I am stopped with three seconds left and I hope that sets an example for the rest of you.

[Laughter.]

Mr. DOYLE. I will now recognize my good friend, Mr. Latta.

Mr. LATTA. Well, thank you. I hope you're not talking to me about that.

[Laughter.]

Mr. LATTA. But thank you, Mr. Chairman, and again, thanks to our witnesses.

Dr. Layton, if I could start my questions with you? This committee has spent much time focussing on how to connect all Americans to accept broadband speeds.

In my district of northwest west central Ohio, we still have areas that are completely unserved. So encouraging broadband deployment in rural America is one of my top priorities.

In your testimony, you mentioned that regulatory discrimination costs our economy about \$30 to \$40 billion annually, money that could otherwise be spent on deploying broadband to our rural areas.

Will you expand on this particularly, about how money alone won't solve this issue and what actions should Congress be taking?

Ms. LAYTON. Thank you for that question.

I would like to follow up quickly on the 5G issue as it relates to rural areas.

What we can see with 5G now that which is in cities is it's largely what's called broadband substitution. People are cutting the cord. They cancelled their cable subscription and are getting their broadband connection now through wireless.

So this is going on in cities today, and when we look at rural areas, one of the fastest ways that we can bring high-speed broadband to the rural area is through the mid-band spectrum and there's an issue in front of the FCC right now on a C band auction, which will be the fastest way to bring high-speed broadband to rural areas.

With regard to this issue of regulatory discrimination, as an economist, what, I like to encourage policymakers to think about broadband as a multi-sited market and ensure that all of the participants are able to be involved in the broadband market.

So, historically, we've had a policy which would minimize the participation of the large content providers.

So, for example, Netflix, which accounts for a large share of the traffic, they're not participating in the last mile infrastructure cost. So that's quite significant because that means the cost has to be recovered in another way.

So it falls on the end consumer and part of the challenge today is, you know, when we talked about if it's too high, well, we are forcing end consumers to pay too much when large content providers are not participating.

So in a free market, you would have more participation of the largest content providers, and that would help defray some of the costs for the poorest users.

Mr. LATTA. Thank you.

Mr. Sural, if I could ask you the next question here? I also found in your testimony when you were talking about the adoption problem out there that you said that, you know, it's two sides of a coin—the access side and then the adoption side—and, then also about, you know, the pros and cons out there about why we really have to be out there talking about broadband and getting it there.

On the pro side, you're talking about those who adopt the broadband are more likely to find jobs, learn new skills, and successfully navigate social services, and those who do not—than those who do not adopt them.

Then on the con side, low adoption results in loss of opportunity, education, or economic income, civic, and cultural.

And then when you summed up your testimony at the very end, you, also—I thought it was interesting you had said that, you know, competition drives that affordability and innovation.

And so, looking at the—your state and what you have done on leveraging existing resources and creating partnerships, how does North Carolina State Broadband Office connect with communities that need internet access?

Mr. SURAL. Well, we have a technical assistance team. So I have four members in our office that actually live in the areas where they work, and they work, and they work closely with local leaders to develop—planning all sorts of aspects of broadband on the deployment side and on the adoption side.

And our office has really just started to tackle this adoption issue. We rely a lot on the research that's done nationally and the studies that have been published nationally. We did our own study, however, a few years ago called NC Light Up, that's on our website and we did a controlled study with 179 families.

At the end and the conclusion of that study showed that even three months afterward the families that were receiving a subsidy for the service, 89 percent of them kept the internet service.

And so we are still looking at diving into the benefits for those types of families. But we—but our outreach is mostly with the local levels through either our technical assistance team or our homework gap report that we published.

Mr. LATTA. In my last 25 seconds, now, do you also have workshops then for folks out there?

Mr. SURAL. We just completed a round of workshops we called Broadband 101 and we went to all areas of the state, and we had our councils of governments coordinate the local leaders, and we taught about what they can do to enhance deployment and some adoption issues, and we have a collaborative, too.

Mr. LATTA. Well, thank you very much.

Mr. Chairman, I am ending in three seconds, so I yield back.

[Laughter.]

Mr. DOYLE. Good job.

The Chair now recognizes Mr. McNerney for 5 minutes.

Mr. MCNERNEY. I thank the Chair.

Mr. Sural, do you believe more people should wear bow ties?

[Laughter.]

Mr. SURAL. Yes.

Mr. MCNERNEY. Thank you. Thank you.

So I really appreciate your testimony concerning adoption as well as deployment. I think that's a key issue, along with the cost of equipment, and that's been raised several times. Is there any more you want to add to that—the adoption issue?

Mr. SURAL. On the issue of whether we—competition helps.

Mr. MCNERNEY. Well, whether deployment should precede adoption.

Mr. SURAL. I think that they can be done in concert. I mean, in our state, at least, we've been doing a lot on the deployment side of things.

We even have, for example, in one county they received BTOP money. They have 90 percent of the households connected to fiber but only 59 percent subscription rate. So, obviously, there's something there, and it depends. We are finding county by county, it's different.

Mr. MCNERNEY. Well, thank you.

In your written testimony, you discussed the economic impact of gaps in the broadband adoption and digital literacy. Can you expand on that and discuss the economic impacts that you have seen on the ground?

Mr. SURAL. So we have seen primarily, especially in our rural communities, more entrepreneurship. For example, the city of Wilson has done a lot, and it's allowed them to say, hey, we are a connected city. They've attracted some smaller companies.

So what we are seeing is on the individual level, particularly an opportunity for income enhancement, and then we have some small businesses that are really starting to connect.

There's a woman in southern Beaufort County who runs an agro-tourism business. Seventy-five percent of her marketing and ticket sales are over the internet. So when the internet is down, you know, she struggles. But it gives her an opportunity to run a business in a very, very rural area of North Carolina.

Mr. MCNERNEY. Thank you for that.

Ms. SIEFER, would you like to comment about the returns that we are likely to see from targeted federal investment in broadband adoption and digital literacy?

Ms. SIEFER. So the returns we are going to see are in every industry and in every aspect of our lives because I think one can think about how you use the internet, and that impacts then everything you do, right?

So education and health, work. It is in everything. So the impacts are going to just be astounding if we had everybody participating and think it's also important for us to think about how—that the internet is more valuable because so many people are on it, right?

So that thing that you're using is more valuable if there's more people there. So if we have more of our low-income citizens participating and the disabled and the seniors and the youth, then what does that do to how the rest of us then interact online?

Mr. MCNERNEY. Yes. Well, in my district, there's about 64,000 individuals employed in the construction and transportation, and storage workers. Why would federal investments in digital training help that group, or how would it help that group?

Ms. SIEFER. It gives them more opportunities for jobs, right, because then they're not limited to that field. Yes, if they'd like to stay there, awesome. But their possibilities for advancement go up when they have more digital skills.

Mr. MCNERNEY. Yes, Ms. Sohn?

Ms. SOHN. Could I just add thank you for the opportunity? A lot of skills that we, you know, consider to be sort of, you know, tech-

nical skills or some more mid-level skills, service skills, require internet skills.

So, for example, when I take my car to Midas in Bethesda, they're constantly complaining because they can't get enough people to work as auto workers to repair cars and those folks need digital skills.

OK. It's not just a matter of, you know, fixing the engine anymore. You have to be able to use computers.

Mr. MCNERNEY. Thank you.

Mr. Edmonds, why do you think that the model of public partner—private partnerships is unsustainable in Detroit?

Mr. EDMONDS. I don't think it's sustainable because I think we might be motivated by different things. You know, when—the public sector we, obviously, aren't necessarily looking every single time at our residents as commodities, if you will.

And I am not saying that that's what the private sector is doing but what I am saying is we have different responsibilities.

And so when I am talking to my residents and wanting to get them online, I am not necessarily doing that about in a profit-driven way.

I am looking at this because these residents essentially matter to the future of our city and, ultimately, our country. And when we are engaging with the private sector, it might be they have a—they have different objectives.

We might fall in line under, you know, maybe someone wants to essentially highlight a partnership model that might be deemed innovative. But I am not really looking for innovation. I am looking for what's effective.

Mr. MCNERNEY. Thank you.

Mr. Chairman, I am going to ask for another 5 minutes.

[Laughter.]

Mr. DOYLE. I have great affection for the gentleman, but that request is denied.

The Chair now recognizes Mr. Shimkus for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman.

Thank you for being here. It's a great debate. We have been struggling with broadband deployment, especially in the areas that have been mentioned, for years.

I think we are having a lot of success in the broadband portion through a couple of different agencies. We've got the USDA rural development program, which has been—I mean, I have just gotten an announcement this morning of coming to Hamilton County to help roll out more.

We have the FCC in the last cycle with legislation to help. The state of Illinois has gotten on board now to talk about connecting. So all that is—you know, so this is kind of a natural extension to, oK, if you connect will they come, or are they trained to come, or do they have the connectivity?

We do accept the premise that some people who get fiber run to their house will not want to be online, do we? I mean, I am from rural America, and I am just here to tell you there are some people who don't want to be on the worldwide web.

They don't want to be connected. They're worried about their privacy. They're worried about all this other stuff. So it's kind of like,

in the economist's point of view, 3.5 percent unemployment is de facto full employment if you take in economics and—because there are people always in transition.

So we are never going to get 100 percent and we are not going to get 100 percent full deployment.

But I was interested in this debate about with all these grant programs that we have, maybe—and I think, Mr. Sural, you mentioned it—why, not in the application process kind of make a determination of well, tell us what you have done in the past to help this portion or tell us what your plan is to help educate and connect people as part of these application processes. That way, you have another variable by which the decision-makers can use to see how effective it was.

When we did the stimulus bill years ago, one of the problems was it gave money, but it just overlayed pipes without a business model. So this is kind of the other flip side. This is giving money without really a business plan for connecting or educating.

Mr. Sural, back to you, too. I wrote down you're doing Broadband 101. We could probably use that class even though we've been on the committee for a long time.

Mr. SURAL. Happy to. Happy to.

Mr. SHIMKUS. Yes. Because it is curious, and I am going to a little—Ms. Sohn, I saw you roll your eyes. I love watching people's faces during testimony.

I am a recent—I am getting ready to retire. This is my last year here, and as a member of Congress, I've been able to survive on my iPhone and my iPad without a laptop.

So now I got to go to the real world, and I am thinking, well, that might not be enough, you know, if I have to start doing spreadsheets and connecting. I might need—actually need to figure out how to turn a laptop on and do stuff.

But that brings up this 4G/5G debate and whether 5G does actually represent some competition. Dr. Layton says yes. You rolled your eyes, saying, oh, I don't think so.

So, why the eye roll?

Ms. SOHN. So my concern is that we don't make policy prematurely. OK. 5G is a marathon and not a sprint. I know there's a lot of talk about the race to 5G.

But if you even ask the companies themselves, they will say we are not 100 percent sure what the business model is for this. So that is my concern.

I am not anti-5G. 5G is coming. But I think it would be unwise to make policy—broadband adoption equity policy based on what 5G might be.

Mr. SHIMKUS. Yes, thank you. And I certainly want to give Dr. Layton a chance. But I do know that—and I caveated the question with—I mean, I am not on my laptop, right? I am on email, texting, and searching the web to get information. So I am not full bore into the issue.

But I do know that sometimes I have bad wifi connection or a slow wifi connection, and I will go to 4G and get and I will turn off my wifi signal.

So Dr. Layton?

Mic.

Ms. LAYTON. Well, this whole hearing was worth it for me today to hear Gigi say she doesn't want to make policy prematurely. I think that's great.

[Laughter.]

Ms. LAYTON. So I think to your whole point here, this is the whole point of view of why it's great that people should have more money in their own pockets, why we should allow enterprises to keep more of their own profits. Because every community has different needs, and the more that you have your own resources you can decide how you want to spend it. You can decide how you want to invest it.

So when you talk about, as you opened your question on the big question of the federal funding, there's money sprinkled across the whole place. If we looked at the whole thing, we could probably do it a lot more efficiently and a lot more effectively by the different agencies—USTA, Department of Transportation, FCC—working together in a more cooperative way.

Mr. DOYLE. Thank you. Time has expired.

The Chair now recognizes Mr. Loeb sack for 5 minutes.

Mr. LOEBSACK. Thank you, Chairman Doyle and Ranking Member Latta, for convening this hearing this today, and I thank all of our witnesses for their attendance as well.

I do appreciate that we are having this hearing today. I've worked throughout my time on this committee to advance internet adoption and connect Iowa communities. I also have a rural district, as you might imagine, in southeast Iowa.

I partnered with my friend, Bob Latta, and that we got this very, very bipartisan bill through the Broadband Data Act last year, and it passed the committee pretty overwhelmingly, as you know.

But, clearly, there still are many challenges to ensure that all Americans are able to access and use the internet because in today's economy, as already has been mentioned if you don't have reliable internet access, you're probably going to be shut out of the digital economy.

Whether your child is trying to do his or her homework, or you're searching for a job or accessing telemedicine, or trying to operate a small business, it's truly never been more important—I think we can all agree on that—to be able to connect to the internet and the outside world.

I just had a couple of quick questions. Both of these are for Ms. Siefer and Ms. Sohn. The FCC doesn't currently collect data about the costs of broadband service.

The Broadband Data Act included some qualify of service metrics to be collected. But I would like to ask you how you think the collection of additional quality of service metrics like price data would impact, if at all, access to broadband.

Let's start with Ms. Siefer at this time.

Ms. SIEFER. Having data on the cost of home broadband would draw attention and be able to create solutions specifically around those geographic areas that don't have affordable broadband.

Right now, if you try to go figure out how much broadband costs in any area, it actually takes quite a bit of research. It seems crazy. It seems like we could just look it up on the internet.

But you can't just look it up on the internet. What you will find are the introductory rates. You won't find what it actually costs. And so solutions that can then be created for particular neighborhoods, for particular regions, for particular counties that are struggling with the cost in that area.

Mr. LOEBSACK. And I am going to get to that in my second question, too.

Yes, Ms. Sohn?

Ms. SOHN. So we've actually seen in the e-rate context the group Education Superhighway did a study that showed that once the FCC required price transparency, prices for building networks to schools and libraries went down.

So it would cause competitive pressure, plus consumers should know what they're paying for when they buy broadband, and if they do—if, they're lucky enough to have competitive choices, they can compare and contrast.

Mr. LOEBSACK. So, my second question has to do with an article that was in the Wall Street Journal in December. It found that, quote, "Americans in low-income neighborhoods and rural areas get slower broadband speeds even though they generally pay similar monthly prices as their counterparts in wealthy and urban areas."

And to both of you, again, the question is, do you think that rural and low-income areas are receiving a different quality of service as a result of technical challenges, or do you think there are other factors at play?

And let's start with you this time, Ms. Sohn.

Ms. SOHN. Look, those are not attractive communities to serve. So you get one provider. There's no competitive pressure. They can higher prices. I mean, you know, basically, if you're low-income or middle-class or live in a community of color, you get screwed.

Mr. LOEBSACK. Yes?

Ms. SIEFER. I think the other important point to always keep in mind is that in the U.S., internet service is a commodity, right? You're going to get the highest price for it as you can and none of us should be surprised. We are, like, yes, of course. This is a free market.

But if that result is that we don't have enough competition and then we end up with particular individuals and families who can't afford it because the only option is an expensive option, and we as a society have to say that's not OK.

Mr. LOEBSACK. And I might add that this actually happens not just in rural areas versus urban areas, but even in Iowa City, where I live; if you're in a new subdivision, for example, you have limited options because not everybody wants to go into that subdivision until there are enough homes actually created and that's actually, you know, a fairly wealthy area, too.

Ms. SOHN. That raises another question, if you don't mind, and that's the problem of exclusives in multi-tenant environments or condominium environments where a cable operator or a tel-co will basically have an exclusive, and you're at the mercy of those providers.

And I know the FCC is looking at this, but they can't get rid—they can't ban those exclusives fast enough for me.

Mr. LOEBSACK. Right. OK.

Well, I was going to yield the rest of my time to Mr. McNerney, but there's not enough time for a question and answer. But thanks, everybody. I really appreciate it.

And I yield back. Thank you.

Mr. DOYLE. The gentleman yields back his time.

The Chair now recognizes my buddy, Mr. Olson, 5 minutes. Not a second more.

[Laughter.]

Mr. OLSON. I thank the chair, and welcome to our five witnesses.

Mr. Sural, I have to start out with an apology. My wife is a Duke Blue Devil, and that means that I have to inform you that on February 8th of this year, her Devils will go down to your Dean Dome and put a whooping on your Tarheels, to be repeated next month on March 7th at Duke Cameron Stadium.

Sorry.

[Laughter.]

Mr. OLSON. Just the way it is.

Mr. SURAL. Willing to wager a barbecue.

Mr. OLSON. And that's why I'm in my twenty-seventh year of marriage and my sixth term in Congress; Texas 22 is a booming suburb of Houston, Texas. We are the most diverse county in America ethnically.

We have the richest population per capita of 254 counties in Texas. That means you would think we are preparing for 5G, and looking forward to 10G in the future. Access to the internet is for everybody in Fort Bend County. if you thought that, you'd be wrong.

This past Thursday, I was out in Deanville, Texas. Deanville is all about cotton, milo, livestock, and Deanville High School Blue Jays. I went by to see the Chamber of Commerce's small business awardee, a place that's called All We Need Farm.

It's run by a woman—small business—named, Stacy Roussel. She makes ice cream popsicles with goat milk from Nubian and Angora goats. She quit her job as a CPA in 2000 to pursue her dream of making these popsicles. She bought her first herd eight years later, in 2008.

She and her husband were so good in 2017 they won the American Dairy Goat Association product competition. The best goat milk popsicles in the entire country came from Deanville, Texas.

Stacy's problem is she has no real access to the internet. On her street, her neighbors were there a long time before she was. They have cable access to the internet.

She has none of that cable. She can't convince somebody to come out and put that cable down. Satellites are too expensive, and maybe there's a problem with latency issues.

So my question, Dr. Layton, is how can Stacy break through and have internet access so she can thrive and grow her business? Any thoughts? Ideas? Barricades D.C.?

Ms. LAYTON. This is in her location where she's in this part of—

Mr. OLSON. Yes. Yes. Yes. On a rural road. There, again, the neighbors have—because they were there, like, 10 years, 20 years before her. They got cables laid. She can't get somebody to help her

out. Again, satellites are too expensive for right now. She has to grow her business. She can't do that until she gets that access.

Ms. LAYTON. Right. Well, I am not familiar with the requirements for deployment in this particular part of Texas. I would have to look into it.

What I am encouraged to see is that, for example, I am very excited about the new high through-put satellites, which are 100 megabits per second. They are online—to come online, I think, in less than a year.

The FCC has approved over a dozen new satellite programs in low earth orbit. These should not be laughed at. They are very serious. They are being used around the world. I think that's a big deal. I would just come back to what regulatory barriers there are. I mean, and hats off to this woman for pursuing her dream.

Mr. OLSON. Yes, ma'am? Ms. Sohn, do you want to add to that?

Ms. SOHN. Yes. This would be the perfect place for communities to build their own broadband, and, unfortunately, in Texas is one of 19 states that prohibits their local communities from building broadband.

I have cousins who live in Dallas. I often visit Austin, and I get similar complaints about the lack of broadband in places where you think it would be, and that's why community builds are so critically important and why Congress should prohibit those kinds of—prohibit states from stopping communities from deciding whether or not to serve people like your friend.

Mr. OLSON. Mr. Sural?

Mr. SURAL. And small business adoption and programs and also grants to small businesses. We had a program in North Carolina that allowed some manufacturing facilities to hook up to fiber. Provided a grant, and they've expanded their operations and communicate with customers in China. So we need that, too.

Mr. OLSON. Final question for you, Dr. Layton. This is on NFL neutrality. January 6th of 1980, Houston Oiler Mike Renfro scored a touchdown in Three Rivers Stadium that was denied.

Would you break from Chairman Doyle and admit the refs blew the call?

Ms. LAYTON. On this one, I am forever a Pittsburgh Steelers fan. So I am sorry, I am not going to come over to that side on that question.

[Laughter.]

Mr. OLSON. It was a touchdown.

I yield back.

Mr. DOYLE. I thank the gentleman. I would just like to say, Mr. Sural, it was mighty kind of you not to mention the Houston Astros in retaliation for his Duke statements.

But the gentleman's time has expired.

The Chair now recognizes the gentleman from Texas, Mr. Veasey, for 5 minutes.

Mr. VEASEY. Thank you, Mr. Chairman, for recognizing me for a magic 5 minutes.

Mr. Olson, thank you. Roger Williams and I appreciate you mentioning Mike Renfro, who's a fellow Arlington Heights High School graduate out of Fort Worth, Texas. So thank you very much.

Mr. OLSON. Touchdown.

[Laughter.]

Mr. VEASEY. It definitely was. Every time I see Mike out and about in Fort Worth, we joke around about that, about how it definitely was a touchdown.

Mr. Edmonds, in your testimony, you discuss the difference between the availability of broadband and usage. You set out in a table in your testimony displaying in the district that I represent that there is 100 percent availability of broadband which, according to your table, is higher than 27 of my fellow subcommittee members. But usage is 35 percent, which is twentieth out of 31 members.

Can you explain how availability is so high, but usage is so low?

Mr. EDMONDS. So, really, what—and to explain the context of that data as well, so that data was gathered by Microsoft where they actually began looking at the software updates.

So anyone who was having a software update by way of Microsoft, the area would have determined the speed. So it wasn't a survey. It was actually automatically pulling that data.

The one thing that they did not include in that data piece was mobile broadband, so anyone who was doing updates over cellular networks.

Now, the good thing is we have the data by way of the American Community Survey where we can—where we can reference that. But the disparity is still going to be pronounced.

And so when we began looking at the availability, and the usage, like, to summarize the sentiment that, you know, some other people have already covered today, just because you build a network doesn't mean people will come.

And so when you begin looking at the availability we can have that all day. But, however, if we don't have the necessary means to get people online and to keep them online, I think that's what we are seeing in that.

And so, for example, in the city of Detroit, if we were to look at poverty rates, and Detroit has, obviously, a pronounced poverty rate, we are seeing the role that cost plays and people having perpetual meaningful broadband adoption. You having it for one month is fine.

But, again, for a year, day in and day out costs, some can afford that monthly. That's something where we are still struggling to get, especially when we begin looking at broadband packages in America.

Now, cost being a big barrier, but, again, we don't really have the necessary digital skills training as well. You know, one thing that I am going to echo is Angela's sentiment, where she expresses that people aren't willing to pay for things that they might not necessarily fully grasp. And so when we don't have any funding for digital literacy training, I don't see ways that we can essentially insulate people and put them into a pipeline of meaningful broadband adoption as well.

So there's really an amalgamation of issues that are keeping people from getting online. But, again, there's not really any funding for us to address this.

Mr. VEASEY. Yes. That's really interesting, which brings me to my next question that I wanted to ask you. Have you—have you

had a chance to look very closely at texting and calling versus actual internet usage in urban areas?

And the reason why I say that is, like, if you were to drive through certain areas in my district, you know, most of—most major retail concepts—new retail concepts—will skip over lower-income areas like some of the places that I represent in Fort Worth and Dallas. But the one new store that you will always see if you can drive through the community outside of a fast food place will be a cell phone place. The cell phone companies are well-represented in these areas because they see them as opportunities for big business.

Do you think that it makes sense to start looking at whether it's unlimited data plans or what have you as a more viable way for communities to be connected—to be able to do things like homework and what have you if it can be offered at a more affordable price?

Mr. EDMONDS. No. I always caution people about the tales of smartphones. You know, when I tell people that, you know, children just having smartphones, they're missing out on the ability to type.

Typing is a workforce skill. And so I see the value in cell phones, and I really do. I think that's something that's great to be able to communicate. It's great for emergency response.

But at the end of the day, we don't want to stymie our workforce by going with the solution that I think is, in many cases, misguided. When we begin also looking at cell phones, while, yes, there are a lot of cell phone stores, we also have the data that nearly 40 percent of Detroit residents are actually struggling with affording a perpetual data plan cost.

And so, while people might procure a cell phone device that's useful, wifi is where they are essentially going. So applications that allow people to be able to send texts or send messages over wifi are becoming much more popular. So someone can procure a device.

But at the end of the day, those wifi networks are—that is where the real value is. So you see, people get those devices at those cell phone stores. But then they'll go to where they find those free wifi locations such as McDonald's or a library.

Mr. VEASEY. Thank you. I have a lot more, actually, but my magic 5 minutes have elapsed.

Thank you, Mr. Chairman.

Mr. DOYLE. The gentleman's time has expired. The chair now recognizes Mr. Long for 5 minutes.

Mr. LONG. Thank you, Mr. Chairman, and if I start asking healthcare questions? you will know that I am in the wrong committee because we've got two committees going on here today. Running back and forth between them.

But, Dr. Layton, in your testimony, you talk about consumer choice and how a flexible market can allow consumers to adopt the services they need.

While America may have slightly higher broadband prices than other countries, what has this approach done for the quality of the networks that we do have?

Ms. LAYTON. So I think the main reason is that we have a higher quality. I mean, we are—we have many ways we are leading in a

lot of network technologies of all kinds, wireless and wireline, and part of that relates to the investment incentives and the ability to have broadband at different prices. That's an important thing if you want next-generation networks.

Mr. LONG. OK. Thank you.

And do you—again, for you, Dr. Layton—do voluntary efforts to promote broadband adoption strike the right balance between preventing over-regulation and bridging the affordability gap?

Ms. LAYTON. So, I, personally, would like to see more flexibility in the marketplace. I think that hitherto we, have—the regulators have defined the parameters. We haven't focused enough on security, and that's very important to consumers.

The regulators have overfocused on speed. I think the point was made today that, you know, you may—your house may have a—be passed by a gigabit network, but you don't use the full the speed on that network.

That was the Wall Street Journal article that was referenced before. Because depending on the application, you may not need the fastest speed.

So there are different applications, different needs, and different prices. So that's why one single price doesn't reflect—it doesn't address the actual needs in the marketplace.

Mr. LONG. OK. And do they also help promote broadband deployment?

Ms. LAYTON. Absolutely, because when a—when an operator is thinking about deploying, they are going to try to serve different needs. There may be enterprise needs. There's individual needs, families, and single persons.

They're not all going to have the same needs, and they have to have different price points to meet those different needs. They need different packages. And so that part is why the flexibility needs to be there.

We have overly relied on the FCC to define what the features should be. But that limits the ability of the consumers to define what's important for them.

Mr. LONG. OK. Thank you.

I was an auctioneer for 30 years before I came to Congress, so I talk faster than most people. So I am going to yield back two and a half minutes of my five.

[Laughter.]

Mr. DOYLE. Well done, Mr. Long.

The Chair now recognizes Mr. O'Halleran for 5 minutes.

Mr. O'HALLERAN. Thank you, Chairman Doyle and Ranking Member Latta.

I am part of our recent work to secure funds for broadband development and ensure the FCC's maps are accurate. The digital divide is more than just accurate maps and laying fiber in the ground.

It's about access, affordability, and Americans feeling empowered online with computer skills. And in my district and in rural America, I believe that the competition of speeds in rural areas to be able to compete with the rest of the nation and the rest of the world should not be at the FCC's minimum. We shouldn't just be happy with getting some internet to people. It has to be competitive internet to people.

According to a recent Pew Research Survey, 10 percent of the U.S.'s adults do not use the internet. The survey found that the majority of these adults were either seniors—27 percent—I have a very large population of seniors in the district—had less than a high school education, 29 percent.

I believe that higher speeds would help with that, being able to have people stay in high school and get a better education in rural areas. And were low-income earners, \$33,000 or less—18 percent—and lived in rural areas, 22 percent. And I also happen to have the largest Native American population in the lower 48 states.

Closing the digital divide is a complex problem that impacts many constituents in my district. I look forward to finding bipartisan solutions to address these problems.

The Arizona students recycling used technology program is a great example of increasing access to internet capability devices. Industry partners donate used hardware to local universities for students to refurbish their laptops and computers.

Local libraries will then pair this equipment up with wifi hot spots to help connect their communities. Hopefully, we can stop them from having to go to McDonald's to do that in the parking lot.

One testimonial from the Page Public Library describes this program as a fantastic service for the community and helps many compete in online job applications.

Mr. Edmonds, you discussed the importance of public-private partnerships in the community to increase broadband access. Can FCC or NDIA programs do more with states to develop similar inclusion programs?

Mr. EDMONDS. Short answer, yes. I believe all—

[Laughter.]

Mr. O'HALLERAN. Give me your long answer.

[Laughter.]

Mr. EDMONDS. I believe all of us can do more, and one thing that I always want to I guess keep at the forefront, is the value of local leadership but also recognizing how diverse we are as America.

So, you know, within your respective district, you have different cities that maybe some of the solutions that I would propose in Detroit would be different and, you know, that's oK.

But at the end of the day, we see that there is, you know, the private sector has a role. The public sector has a role. The federal government has a role.

We all have different roles here, and I think that what we are seeing locally is that, you know, we are in our capacity doing the best that we can, but we really aren't getting that leadership oversight that we need to say that it would, essentially, legitimize our cause more than what we are already doing.

Mr. O'HALLERAN. So, what can we do?

Mr. EDMONDS. Well, I would say at the onset, one, I think that it's great to recognize this issue. Whenever we look at the digital inclusion three-legged stool, advocacy and awareness is oftentimes left out of that equation. And so just being great advocates, for one.

But two, even making, like, digital readiness recommendations and kind of attaching funding to that. I think that's where we are a little anaemic on. Again, we could come to the—if we were able

to come to the table and essentially go to the private sector and say hey, these are the resources that are made available to us; what would you be interested in supporting as well?

That doesn't happen at this point. Right now, we are just going to them directly and saying, hey, glad that you're here. We don't have any money, but this is our issue. And so if there was any type of funding that was attached to this, we could actually do some real damage here.

Mr. O'HALLERAN. Thank you.

Ms. SIEFER, Arizona, has a plan, and a broadband office focused on digital inclusion efforts statewide. However, some states still do not have this type of plan.

Would you discuss the importance of every state appointing a trusted official or a program to support broadband expansion in digital literacy in 10 seconds?

[Laughter.]

Ms. SIEFER. In 10 seconds.

So most states don't have a plan. Everything that Jeff has described to you today, everyone should know that is not the norm. Jeff gets asked to speak; his staff gets asked to speak because they are leading—they are leading it all, right? And yes, Arizona has—they have a staff member at the state library whose title includes the term digital inclusion.

Mr. O'HALLERAN. Thank you, and I yield.

Ms. SIEFER. So runs around the country, runs around Arizona helping folks. We should have that everywhere.

Mr. O'HALLERAN. Thank you.

Mr. DOYLE. Gentleman's time has expired.

The chair now recognizes Mrs. Brooks for 5 minutes.

Mrs. BROOKS. Thank you, Mr. Chairman.

This hearing is incredibly timely. I just recently, when we were in the district last week, we visited a number of communities because we had a mayor's election in November, and so I have a number of new mayors in small communities and visited both large cities like the city of Indianapolis that I represent up to smaller communities, little communities like Gas City, Hartford City—very small, under 5,000 people, and actually the issue of availability of broadband and availability of connection to the internet is something that is critically important to every community regardless of its size because it will determine—and I want to thank each of you for your testimony.

It was all very, very helpful to learn, and I hope that the mayors that I have recently visited with, you know, have learned that we do have, you know, positions like yours, Mr. Edmonds, in Detroit, positions like yours, Mr. Sural, in North Carolina, because I do think the leadership—and while Indiana is investing in—our Governor Holcomb is investing \$100 million in next-level broadband to try to help communities, some of these new mayors weren't aware of that and weren't aware that our state legislature has decided to invest in trying to make it available.

But I think one—we called—one of my staffers called a small telecom to talk about a small internet provider and to get to the second. He actually said, and this is something we've all heard, you can offer the horse all the water you want, but if he ain't thirsty,

he's not going to drink it. I happen to ride, and I know what he's talking about.

And so the challenge that we do have as a country is trying to educate in many ways people, I think, particularly senior citizens, more so than the younger people. They are growing up with it. It is something they are so accustomed to.

But I want to, you know, spend a little bit more time on how we can focus on including the seniors. I went into one of the mayor's offices, and there was a senior citizen sitting at a public access computer outside of his office, and I thought that was great.

I have been to my public libraries and have seen a number of people going. But yet, I was also at our state's community college system when people were getting laid off from their jobs.

We were teaching them during the recession what a mouse was and how to use a computer, and I think people don't appreciate that that divide still exists in our country.

So I want to focus with my limited time left how we can educate and do a better job of educating people. I really think it is more of an age issue than we all want to admit. For our young kids, it's second nature to them, more so than maybe it is to use a pencil or a pen.

And so how can we reach—what would be your one idea to help us? And I want to do kind of a lightning round. What would be your idea? I am sorry we are going to get to you last, Mr. Sural, but I want to get everyone's quick idea of how do we expand literacy.

Ms. SIEFER. So the digital inclusion programs that are out there now are on the ground, created locally. They know what works, right?

They work with those senior centers. They work with seniors, and they know that it's whatever matters to that senior. What matters to that senior? Is it talking to their kids via Facebook? Then that's—then that's what you do it.

Mrs. BROOKS. Right. That's when my mother got on Facebook. Right.

Ms. SIEFER. That's right.

Mrs. BROOKS. And to Dr. Layton's point, it was what is the—what is the service they're trying to access, not the network.

Ms. SIEFER. Right. Well, in the state of Indiana—and I want to applaud you because you have been—Indiana has been really amazing around the supply side of things, making the way for the 5G networks and so on and understanding all of that.

But you could also look at the state government digitizing the state services. In some respects the government itself becoming more efficient can provide a pull to the industries and consumers that they have to just become digital as a result.

Mrs. BROOKS. I agree.

Ms. SIEFER. That has—that has one outcome side of it.

Mrs. BROOKS. Thank you.

Mr. Edmonds?

Mr. EDMONDS. So I actually engage seniors semi-regularly and we actually had a group of seniors where their library closed in their community, and they found my phone number and called me

and said, hey, you know, our library closed—what can we do to connect.

You know, we can't compete with the other kids who are just there all day. They take all the stuff. But what can we do, and I think so place-based recommendations are going to be huge here.

Mrs. BROOKS. OK.

Mr. EDMONDS. Finding a place where seniors really feel comfortable.

Mrs. BROOKS. Thank you. Thanks. I want to keep—Mr. Sural?

Mr. SURAL. So my father is 78. He does not consider himself a senior citizen but he takes computer classes up at the library. So community anchor institutions are key.

Mrs. BROOKS. That's excellent.

Ms. Sohn?

Ms. SOHN. Community anchor institutions are excellent and passage of the Digital Equity Act so that the folks that Angela represents have the resources to educate everybody including seniors.

Mrs. BROOKS. Thank you. I yield back. Thank you all for your work.

Mr. DOYLE. Gentlelady yields back.

The Chair recognizes Ms. Clarke for 5 minutes.

Ms. CLARKE. I thank you, Mr. Chairman, and I thank our Ranking Member Latta. I thank our panellists for lending their expertise to us today. The American people deserve access to broadband devices and the internet. They deserve affordable services and they deserve today's hearing.

Congressman McNerney, Luján, and I recently introduced H.R. 4486, the Digital Equity Act, to ensure every person is provided access to digital literacy they deserve in 2020 and beyond.

Information is power and someone's income level or zip code should have zero impact on their access to broadband internet.

They should not have to depend on smart phones as their only means to participate in today's economy. And so I thank you once again for being here to address the critical issue of the digital divide.

I wanted to start with the issue of the census, because we've talked about access and everything else, and I see everyone nodding. Being a member of the Congressional Black Caucus's 2020 Census Task Force, I believe that every person should be counted. I also represent a historically hard-to-count district.

Let me start with you, Ms. Siefer. In your testimony, you discussed the U.S. Census Bureau's online data collection and digital inequity across the United States.

Can you please expand on your suggestion that the federal government should do—should boost broadband adoption to ensure an accurate count?

Ms. SIEFER. Right. So we know that the census is going to be conducted it online. We know that they are going to be encouraging folks to fill it out online. And so how does that actually play out? It means that libraries are going to end up places that folks go.

It means that those who don't have digital skills might just decide not to fill it out at all, right, that the—there's lots of ways that the community itself can respond but if they don't have the re-

sources to respond then those individuals just won't—they won't get counted.

Mr. EDMONDS. Yes, and I would like to follow up with that a bit and just—kind of how I've been summarizing it and telling to people, well, if you don't essentially have the internet then essentially you don't count, and if you don't count then you don't matter.

And we don't want to, obviously, send that message and it's a really, really bleak and hardhitting message. But that's what needs to be said.

And so when—even locally on the ground we are looking to galvanize every resource possible. It's working with rappers just as much as we are working with our local grocery stores, actually putting in kiosks any and everywhere. But one thing that—it's a bit bleak as well but maybe morbid optimism—America has two options with the census.

Either you prioritize digital equity at the onset and you do a good job in the census, or you don't, and then you're penalized for it. So, therefore, you would have to prioritize digital equity, moving forward.

Ms. CLARKE. OK. Did you want to respond, Dr. Layton?

OK. Ms. Sohn?

Ms. SOHN. Yes. I would just say, look, the reason that racial minorities are already way behind in broadband adoption is because of structural discrimination, because of discriminatory lending practices and housing practices. We don't want to exacerbate that by having them not be counted.

Ms. CLARKE. Mr. Sural?

Mr. SURAL. So a lot of scrutiny has been applied to the FCC's data collection and their mapping. But one of the things that's overlooked is that they rely on the 2010 census numbers to determine the number of households that are either served or unserved in the census bloc. So having accurate census numbers are key to determining where that funding from the FCC will go.

Ms. CLARKE. So we may be creating even—digging an even deeper hole in terms of mapping if those who don't have access right now are unable to participate in the 2020 census.

Mr. SURAL. Correct.

Ms. CLARKE. Very well.

My final question is to you, Mr. Edmonds. A lot of the conversation about bridging the digital divide is focused on rural areas. But I am curious about how this conversation plays out in low-income urban areas.

Can you share more information about how many people in Detroit lack access to broadband and how—and share why they are unconnected?

Mr. EDMONDS. Sure. So over 40 percent of our residents don't have broadband. Twenty-seven percent of our residents don't have broadband of any kind and approximately 20 percent of our residents are only cell phone only households.

And, really, you're seeing just—people are essentially getting in where they fit in and when you're looking at why people essentially aren't adopting, you know, cost is, obviously, the biggest barrier.

Again, I am going to keep going back to how perpetual billing really disenfranchises people. Across America from 2012 to 2017

approximately 1,600 banks closed in rural and urban areas. Oftentimes those areas were low income, the residents had less years of education and they were predominantly African American.

And when we begin looking at the role that banking institutions have played and for them to be going to online banking what role does that have to play with financial literacy and what role does that have to play pairing it with digital literacy training?

I think that when we begin unpacking these issues and looking at it from a very, very nuanced perspective, we are seeing, again, there are so many factors that are keeping people online and they're essentially tied to other industries where we might not necessarily have the focus on at the moment.

Mr. DOYLE. Gentlelady's time has expired.

Ms. CLARKE. Thank you, Mr. Chair.

Mr. DOYLE. The chair recognizes Mr. Walberg for 5 minutes.

Mr. WALBERG. I thank you, Mr. Chair.

Also, my colleague, Mrs. Brooks, wanted me to make sure that we do understand that the census can be done on paper, too. I don't want to—don't want to forget that. We want to use it all sorts of ways as best as possible and I thank the panel for being here. I think it's an outstanding panel because of Go Blue involvement.

Mr. Edmonds—Mr. Edmonds, you are a—you're doing a great job. I think—I think you will help a lot of people come to understand and use it just because of the smile on your face and your energy that's there.

Mr. EDMONDS. Well, thank you.

Mr. WALBERG. Mr. Sural, am I understand you have some Go Blue background as well?

Mr. SURAL. I do. Go Blue. I was born in Ann Arbor.

Mr. WALBERG. And western Michigan, too?

Mr. SURAL. Western Michigan? In law school. Yes, sir.

Mr. WALBERG. Yes. Well, we can see the value of this panel here. [Laughter.]

Mr. WALBERG. Like many others on this dais, my district is very rural, a lot of it, and including myself. I have a smart TV. It tells me that every time I turned it on. But I can't use it as a smart TV.

You can imagine the excitement of last week when I had Chairman Pai in my district with me and talking about key issues and then going out to the field and seeing broadband being stretched right near my Harley Davidson dealership and out in the country as well and a matter of a few miles from my house.

So I am hopeful that soon I will be part of the real world and my hot spot and my myfi won't be the only options that I have to connect.

And those are issues we've been talking about, but another bipartisan issue that I want to address here and take note of is something that I've worked with Representative Clarke. I see she's not there right now.

But a key issue called a tower act and I think it goes to the issue of being able now to see more broadband and fiber being stretched and pulled because of the good economy, because of good policies I think we are developing together and moving forward.

But we need to have people who will be a high-skilled workforce able to put up the internet for us and understand that these can be excellent jobs—lifetime jobs—that have expandable opportunities to deploy fiber, 5G, et cetera, and that our HBCU and minority populations need to understand that clearly.

Mr. Edmonds, you can help us with that extensively because we are talking about jobs that will be high paying but require in many cases less than a four-year education and allows for expanded four-year education if you want to do that by putting up those resources—those towers, et cetera.

Dr. Layton, as you noted in your testimony, some research has shown that low-income Americans or Americans with lower education levels who had access to the internet thanks to a temporary subsidy often choose to remain connected at its conclusion. I think, Mr. Sural, you pointed that out as well.

Dr. Layton, do you think that principle would translate if we are able to increase the number of people in the workforce for deployment in these areas as well simply by providing them exposure to broadband conceptually as well as higher incomes?

Ms. LAYTON. The question is what is it—the subsidy or the training?

Mr. WALBERG. The subside and, ultimately, the ability to hear and see and be involved and understanding that it's now available to me.

Ms. LAYTON. So I agree with what you're saying. I mean, I think you're absolutely right. You have the workforce issue.

We have described that for some people that it is an economic issue and that we need targeted subsidies for those individuals and we also have a skills gap to address. So I support those things.

Mr. WALBERG. So in that line, Mr. Edmonds, I would also ask, I would assume that if we get people to understand that this is for me now and if we are going to put these in and they see the technology—the towers, et cetera—going into a neighborhood that that's an opportunity for employment as well.

Mr. EDMONDS. It absolutely is an opportunity for employment and one thing that I would like to, you know, highlight with these, these are Americans who are really willing and ready to work and to participate in the economy. If they were extended a fair hand they would excel in that.

Mr. WALBERG. Of course, that's what we want to see.

My time has expired. I yield back.

Mr. DOYLE. I thank the gentleman.

The Chair recognizes Mr. Johnson for 5 minutes.

Mr. JOHNSON. Thank you, Mr. Chairman.

Mr. Sural, of the various programs your office carries out, can you talk about what your state—how your state plays in digital literacy activities? Is that something primarily carried out at the state level or the local level?

Mr. SURAL. Thank you. It's carried out mostly at the local level. We have larger municipalities who have created digital inclusion working groups or collaborative.

But at the state level we saw that work being done in some of our larger municipalities and through some of our universities. HBCUs was recently mentioned.

North Carolina Central has an active program that helps and serves Durham. And so what we did at the state level was we decided to get all those folks together for lunch one day and we ended up creating the statewide collaborative to learn from them, and then to take what they've done successfully and try to what we call R&D—rip off and duplicate—in other areas of the state, either in municipalities or the rural areas.

Rural areas are particularly challenging with this issue because they just don't have those underlying resources or advocates like they do in the urban areas.

Mr. JOHNSON. OK. All right.

Well, in your testimony you talk about how North Carolina is piloting innovative ideas to create sustainable solutions for broadband adoption. Can you give us a few more specific examples of what those pilots may entail that other states aren't doing?

Mr. SURAL. Sure. Sure. And we received a grant from IMLS that I mentioned in my opening and it's \$250,000. So that's important because we just didn't have the resources.

I mean, we had smart people who were very charming and good at what they do. But without funding we couldn't implement some of the ideas that we had. So thank you to IMLS for that grant.

It's a two-year grant program and what we are going to do, the objective of that grant program is to create a play book for librarians; basically, something that we think we can scale not only across the state but across the nation.

And so what we did was we set up digital literacy training and equipment and provide equipment to K through 12 students and families at the local library. We partnered with the school that had a one-on-one program so the student had a device but maybe not connectivity at home.

We provided them with a wifi hot spot or a cellular hot spot and then they came in for six training sessions with their parents and they sat down and we did digital literacy training at the library with the computers there.

The issue is sustainability after the grant ends and how we allow that librarian, who is strapped for resources in the poorest of the poor counties in North Carolina to continue this program, and we are going to take lessons learned from that and we'll wrap it in and we'll have it in our report and, hopefully, we'll have that play book out for everyone. So that's just one of the—

Mr. JOHNSON. OK. Well, how important is sharing information on various broadband adoption initiatives through other state government channels? How important is that in improving broadband adoption—the broadband adoption rate nationwide?

Mr. SURAL. It's critical. It's what we have now. The network that we have now is important. In 2015 when I started this job we had 12 states that were part of what we called the State Broadband Leaders Network that works with NDIA to coordinate some of our meetings and monthly phone calls.

Today, there are 48 states involved. This is how active states have gotten just over in that short period of time and how they see the need and how they can—and they know now that they can lead and so they're doing that.

Mr. JOHNSON. Well, I imagine using the breadth of different community centers and state offices provides a good platform to spread awareness of the different resources out there. So I commend you for what you're doing. Keep it up.

Mr. Chairman, I don't talk nearly as fast as my colleague, Billy Long, does. But I will yield back the balance of my time, too.

Mr. DOYLE. I thank the gentleman.

Seeing no one else looking for time, the chair requests unanimous consent to enter the following into the record: a letter from Silicon Harlem, a letter from Seattle Mayor Jenny Durkan, a letter from Chattanooga Mayor Andy Burke, a letter from Digital Equity.

Without objection, so ordered.

[Material submitted for inclusion in the record follows:]

Mr. DOYLE. I want to thank the witnesses for their participation in today's hearing. I would remind Members that pursuant to committee rules they have ten business days to submit additional questions for the record to be answered by the witnesses who have appeared and I would ask each witness to respond promptly to any questions that you may receive.

At this time, the committee is adjourned.

[Whereupon, at 12:24 p.m., the committee was adjourned.]

PREPARED STATEMENT OF HON. FRANK PALLONE

Today's hearing focuses on promoting broadband adoption, an issue that affects every one of our districts whether they are urban, suburban, or rural. On this Committee, we have on many occasions discussed gaps in internet access and how to subsidize and incentivize building the infrastructure necessary to ensure that everyone has access to reliable, high-speed, and resilient internet service. But we must also consider the gaps in internet adoption—why people don't, or can't, subscribe to internet service when it is available to them.

It is increasingly difficult to participate in today's economy without internet service, and yet millions of Americans who are wired for internet access aren't actually connected. The key reason most are not connected is cost.

In New Jersey studies have found that nearly 17 percent of residents have no internet access in their homes. Of the families making \$35,000 per year or less, only half have home internet connections. That means school kids in these households have to find public internet connections or wi-fi to complete schoolwork. And their parents are having to fill out job applications and complete educational courses on smart phones or at libraries. This certainly puts these families at a disadvantage.

Fortunately, there are programs at the state, local and federal level that can provide assistance to people who have trouble affording internet access. But at the federal level we can and must do more.

As we consider how to spend proceeds of future spectrum auctions, it is important that we invest in solutions to address these adoption issues. Members have introduced legislation to begin closing these adoption gaps. I'm hopeful we can work to find a way to make these proposals—or others that might come as a result of this hearing today—bipartisan.

The internet holds incredible promise for the future, but as the technology continues to advance, we must make sure that people are not left behind. That's the concept of digital equity, and it is one I know we will all stand up for. I look forward to hearing more from our witnesses and to finding bipartisan solutions to these issues.



Silicon Harlem Comments Concerning Internet Adoption and Digital Equity

To the U.S. House Committee on Energy and Commerce
Chairman Frank Pallone, Jr., and Ranking Member Greg Walden
Communications and Technology Subcommittee Chairman Michael F. Doyle and
Ranking Member Robert E. Latta

Submitted for the Hearing on Internet Adoption and Digital Equity

January 29, 2020

The Internet is critical to ensuring there is parity amongst our zip codes. The research has proven that access to broadband and increasing digital literacy, results in increasing household income. This viable reality is an opportunity to ensure marginalized communities embrace technology and innovation as a sustainable economic engine. Increasing digital literacy, internet adoption, and more participation in the digital economy will close the homework gap, job gap, health gap, and economic gap. It is no longer a luxury to have broadband, it is a necessity.

We encourage you to support Internet Adoption and Digital Equity for all. In my neighborhood of Harlem, there are almost 40% of our residents that do not have broadband in the home. This is a crisis, but it is a crisis we can all solve. Everyone needs a connection!

Sincerely,

A handwritten signature in blue ink that reads "Clayton Banks". The signature is fluid and cursive, with the first name "Clayton" and last name "Banks" clearly distinguishable.

Clayton Banks
CEO
Silicon Harlem
mr.banks@siliconharlem.com
3476876474



City of Seattle
Mayor Jenny A. Durkan

January 29, 2020

To the U.S. House Committee on Energy and Commerce
Chairman Frank Pallone, Jr., and Ranking Member Greg Walden
Communications and Technology Subcommittee Chairman Michael F. Doyle and Ranking
Member Robert E. Latta
Submitted for the Hearing on "Empowering and Connecting Communities Through Digital Equity and
Internet Adoption"

City of Seattle Comments Concerning Internet Adoption and Digital Equity

Honorable Chairman, Ranking Member and Committee Members:

We appreciate the Committee's leadership and share your goals of closing the digital divide for all Americans. Thank you for the opportunity to share comments and our expertise in this area. These remarks reflect our experience in Seattle and Washington State as a leader in digital equity since 1996.

Closing the digital divide is a critical issue for all Americans, regardless of political party or whether they live in rural, suburban and urban communities. Cities like Seattle have made progress to connect 98% of our residents thanks to smart investments in digital equity.¹ Older adults, disabled residents, jobless and displaced workers, veterans, low-income struggling families, and youth share very similar challenges, whether they live in cities like Seattle or rural Ferry County, in the Duwamish Tribe or Yakama Nation, or in any district in the country: It is increasingly difficult to survive without high-speed internet access and the skills to navigate the digital world. Applying for jobs, finding healthcare, accessing childcare or your local school, even communicating with our loved ones in times of need – all these tasks increasingly require online access.

The internet can help people save money, access services, or have access to greater resources to operate and grow small businesses, but only if they have the skills and the ability to access it. Working towards digital equity requires targeted investment to reduce historical barriers for rural areas, people of color, and other underserved communities. Leveling the playing field means ensuring equitable access to working devices, technical support, high-speed internet infrastructure, and the digital skills needed to use broadband and online services effectively. It also requires attention to the design of online services and the capacity to ensure individual's privacy, safety and security online. One resident wrote that "learning to use the internet and technology is the same as learning to read in the beginning of last century" in our survey for Seattle's 2018 Technology Access and Adoption Study.

¹ <http://www.seattle.gov/tech/initiatives/digital-equity/technology-access-and-adoption-study>

We applaud the introduction of digital equity legislation led by Member McNerney and others, which recognizes the definition and goals of digital inclusion and equity. These definitions were developed by the National Digital Inclusion Alliance (NDIA) with input from the City of Seattle and experts across the country. The proposed legislation is the right way forward – the federal government must help to develop digital inclusion initiatives, grants and partnerships for delivering digital inclusion programs and support the research and exchange of best practices as we work towards true digital equity in our country.

It's smart business for government to invest in digital equity as we move services online. We need to ensure everyone - residents, workers and visitors - can access, understand and interact with government services online. In Seattle, community-oriented infrastructure including wi-fi and publicly-available computers in libraries, community centers, schools, non-profits and other anchor institutions have helped us distribute public safety and emergency preparedness notifications during periods of poor air quality or extreme winter weather in our region. Digital equity programs also help our residents understand and utilize critical local, state and federal services like online bill-pay, vehicle and business licensing, or communicating with their elected officials. Digital equity needs are especially apparent as more and more crucial government programs – like the 2020 Census – are moving online.

Even in “high tech cities” there are significant gaps and barriers to digital equity. Our 2018 Technology Access and Adoption Study found that low income residents are over 20 percentage points less likely to have internet compared to those above the poverty level. Those with greater incomes have higher rates of access, faster internet speeds, and are generally more comfortable completing tasks online. Ethnic minorities and non-English speakers, as well as those living with a disability, are more likely to rely on others to help them access and use the internet. Studies in Austin and elsewhere have found similar results. These are challenges that we can best address together through all levels of government in partnership with the private sector and trusted community partners.

Fulfilling our potential as a nation online requires support from the entire community, and investments in digital equity help to build these partnerships. Digital equity programs have brought the City and private sector stakeholders together with front-line advocates like community-based organizations, housing communities, educational institutions and communities of faith to help residents get online and build basic online literacy skills. Previous federal and state funding has helped internet and digital inclusion program providers across our state increase broadband capacity and training in tribal courthouses, local libraries, community centers, and social service providers.

The City of Seattle's Technology Matching Fund, started in 1998, has granted \$5.4 million to more than 340 community-based organizations and generated an additional \$9 million in matching funds. Through these trusted ambassadors 4,692 Seattle residents received skills training in 2018 alone. Our most recent digital equity plan, completed in 2016, brought together representatives from all sectors to develop shared goals and work together on digital equity. One result was a project providing training and helping residents in public housing sign up for internet service. We know that local digital equity programs make a difference, but funding for grants is an ongoing challenge.

Digital equity programs are a critical part of our education and workforce pipeline. Increasingly, our 21st Century workforce demands workers have sufficient digital skills. Employers in every industry are increasingly looking to hire workers who are diverse in their cultural background and experience, and who have the technical skills to be nimble and learn as their jobs – and the technology around us - evolves. Our nation's workforce will lack the skills to compete in the global market if we do not work to ensure a highly-skilled, digitally literate workforce.

By investing in digital equity, education and workforce development programs can help create diverse, homegrown talent and ensure that opportunities are made available to everyone. In Seattle, we heard from a young person in our Rainier Beach neighborhood who had no idea what opportunities awaited her at Amazon or Tableau or Expedia across town. That is why we've invested in programs like Computing Skills for All, a digital skills training curriculum that teaches coding and application design at our Delridge Community Center, and partnered with technology companies in Seattle like Big Fish Games and Smartsheet to take students on technology careers tours. The Seattle Promise, IT+4, and Apprenti programs help provide a ramp to IT education and skills for work, and we are working to increase the number of technology internships available at the Seattle IT Department.

Tech training is just as important for non-technical workers, helping increase skills and wages for other types of employment. Community grants for basic digital literacy yields results. In many of the programs we've supported at the City of Seattle, we have seen workers employ their digital skills to improve their lives and excel at their jobs. Students in the Seattle Jobs Initiative diesel mechanic program need digital literacy to complete online classes and the certification exam. Disabled residents at the Special Technology Access Resource (STAR) Center in Seattle Public Housing have learned to use Word and email, so they can write resumes or communicate with their family in another state or participate in City advisory boards.

One student who works as a housekeeper applied what she learned in her tech tutoring sessions to communicate better with her boss, texting them picture of something if it has broken, or copying and pasting long texts into Google Translate. In another program we've supported, a student enrolled in the learning lab computer class had never used a computer before; she now writes newsletters for her church on the computer. All these are the result of partnerships and investments in digital inclusion programs.

Specific investments in digital equity also leverage other federal, state and local programs. The Department of Labor programs supporting state and local workforce training have provided accelerated training, internship and employment opportunities in the technology sector. A federal digital inclusion program linked with local efforts would help more Americans through training programs like the or homeless transition programs, Ada Developers Academy for Women, or Unloop, a program that helps train people who have been in prison to succeed.

In closing, thank you for the opportunity to be heard and to work with you on empowering and connecting our communities through digital equity. Federal action on digital equity is critical. The global digital landscape is evolving quickly, and too many Americans are being left behind every day. The Federal Digital Equity Act resources will help provide essential resources for front line workers that State and local governments are often unable to provide on our own. These investments are going to pave the way to a healthy economy, healthy communities and a healthier, more connected nation.

Sincerely,



Jenny A. Durkan,
Mayor of Seattle



City of Chattanooga

Mayor Andy Berke

City of Chattanooga, Tenn. Comments Concerning Internet Adoption and Digital Equity

To the U.S. House Committee on Energy and Commerce

Chairman Frank Pallone, Jr., and Ranking Member Greg Walden

Communications and Technology Subcommittee Chairman Michael F. Doyle and Ranking Member

Robert E. Latta

Submitted for the Hearing on Internet Adoption and Digital Equity

January 29, 2020

Dear Chairman Pallone and Ranking Member Walden:

I write on behalf of the City of Chattanooga, as the Committee explores these bi-partisan issues of Internet adoption and digital equity, to share our community's work to improve and leverage both for the betterment of every resident.

Once dubbed "the dirtiest city in America" by Walter Cronkite, Chattanooga has long-since reinvented itself, launching a decade ago the first fiber-optic network in the Western Hemisphere capable of delivering 1-gigabit (and now 10-gigabit) speeds to any home or business. In the first five years as a community asset, according to researchers at the University of Tennessee at Chattanooga and Oklahoma State University, EPB's network has returned a \$1.3 billion dollar economic impact - quintuple its initial investment - and created or saved more than 4,000 jobs.

This is all to illustrate how deeply rooted Chattanooga's story is in Internet adoption. But, as the world continues to be transformed by rapid technological change, increased access is, on its own, simply not enough. We must absolutely invest in the essential infrastructure required to connect every American, but we need to account for and fund the digital equity and inclusion efforts required to give that connectivity meaning and value.

Chattanooga's success has depended not just on an "if you build it" broadband strategy, but through investment in digital equity and inclusion. Talent is distributed equally throughout every neighborhood in this great country, but, too often, resources are not. Even with the fastest, most pervasive internet in the world, still some Chattanooga residents, urban and rural, remain disconnected. Being caught on the wrong side of the digital divide — whether due to affordability, lack of access to a device or a host of other barriers — can have a devastating impact on economic mobility, educational outcomes and overall quality of life.

Our city and county governments both have worked to support efforts and organizations doing the vital, on-the-ground work of connecting residents to 21st century opportunity. From charging EPB with providing a reduced-cost, high-speed home internet plan for low-income families with students in our local schools to directly investing in the digital inclusion efforts of non-profit partners through our City's budgeting process, equity remains at the very core of our community's strategy.

One such initiative, Tech Goes Home, has connected more than 4,500 residents since its first course in 2015. Adapted from the successful Boston model, Chattanooga and Hamilton County's marquee platform works with trusted local partner organizations across the community to provide residents with 15 hours of digital skills training; a new, subsidized device like a Chromebook or iPad; and assistance to acquire low-cost home Internet. Not only does the program support agency in a technology-driven economy, it deeply connects issues of digital inequity with the core work of other service-oriented organizations.

Uzma, a recent participant in a Tech Goes Home class through her employer, had to re-start her career as an early childhood educator when she emigrated from Pakistan to the United States, re-enrolling in college. "I got my admission, went to college, and when I looked around, everybody pulled out their laptops," she lamented, "And I was just looking at my paper and pen." Thanks to Tech Goes Home, she now says, she's confident with a computer, has completed two certifications and is getting her associate's degree - in addition to being back in front of her own early childhood classroom.

Indeed, digital equity and economic development go hand-in-hand. According to a recent analysis by the Federal Reserve in St. Louis, 82% of all middle-skills jobs, which represent the largest workforce in the South, require digital skills - and those jobs requiring digital skills pay, on average, 17% more than those that do not. By working to both connect and educate job-seekers, we're growing a more resilient, future-ready workforce.

Entrepreneurship, too, increasingly depends on these digital skills - from the products and services themselves to marketing and raising capital. Small businesses are the heart of the American economy. In Tennessee alone, businesses with fewer than 100 employees account for more than 50% of all jobs statewide. As technological innovation disrupts existing industries, new startups are becoming even more important to Chattanooga and Hamilton County's economy. These entrepreneurs are creating the jobs of the future and ensuring that the community stays innovative and competitive for years to come - and, through digital inclusion partnerships with entities like our local Urban League, La Paz and various startup accelerators, we're ensuring inclusive access to this economic growth and prosperity.

Through this lens of digital equity, we recognize that disconnectedness - whether a lack of internet access, limited or no access to a device or a need for fundamental digital literacy and training - has a disproportionate effect on success in the 21st Century. As an increasing percentage of life takes place at least partially online - from how we communicate, to job applications, to banking and so on - we must work to ensure that not just some, but all residents, can participate fully in the digital world if we expect our communities to thrive.

Sincerely,


Mayor Andy Berke
City of Chattanooga

January 27, 2020

The Honorable Michael F. Doyle
U.S. House of Representatives
306 Cannon House Office Building
Washington, DC 20515

The Honorable Robert E. Latta
U.S. House of Representatives
2467 Rayburn House Office Building
Washington, DC 20515

Dear Chairman Doyle and Ranking Member Latta,

Ahead of tomorrow's hearing, "Empowering and Connecting Communities through Digital Equity and Internet Adoption," I write urging the Committee to not increase funding for ineffective government programs.

Internet access is no longer a luxury few can afford. In the past, individuals would go to internet cafes and pay by the minute to get online. Now, access is freely available to nearly everyone at local coffee shops, fast food restaurants, public libraries, and schools. The rise of smartphones has also dramatically increased individuals' access to the internet, with the FCC [finding](#) that 99.8 percent of Americans have mobile LTE with speeds of at least 5 Mbps/1 Mbps.¹

While the aim to increase broadband adoption and digital literacy, or understanding of available digital tools, is a worthy goal, experience shows that government programs are largely ineffective at achieving it.

In 2012, the Federal Communications Commission (FCC) [introduced](#) 14 experimental programs for its broadband adoption Lifeline pilot program.² The pilot program authorized approximately \$13.8 million to examine how factors like discounted broadband service, digital literacy training, and broadband speeds affected adoption rates among low-income consumers who were not currently subscribed to broadband.

But in practice, fewer consumers participated in the pilot programs than the wireline and mobile providers expected, according to the FCC's [staff report](#) on the project.³ For example, one of the providers, XChange Telecom, sent approximately 9,000 mailers to their subscribers, in addition to making phone calls to market their subsidized program. Despite their efforts, only 214 individuals signed up.

This demonstrates how it is exceedingly difficult to encourage individuals to participate in subdivided programs about broadband adoption and digital literacy. As Technology Policy Institute President Scott Wallsten [wrote](#) "subsidies are likely to go to people who already

¹ Wireline Competition Bureau, "2019 Broadband Deployment Report," (Federal Communications Commission, May 29, 2019), <https://docs.fcc.gov/public/attachments/FCC-19-44A1.pdf>

² Wireline Competition Bureau, "In the Matter of Lifeline and Link Up Reform and Modernization," (Federal Communications Commission, December 19, 2019), <https://www.fcc.gov/document/14-projects-chosen-lifeline-broadband-pilot-program-competition>

³ Wireline Competition Bureau, "Low-Income Broadband Program Staff Report," (Federal Communications Commission, May 22, 2015), <https://www.fcc.gov/general/low-income-broadband-pilot-program-0>

subscribe rather than working to close the digital divide.”⁴ Also it is likely that at this point in time, unconnected individuals who may also lack digital literacy Likely prefer to remain unconnected. According to National Telecommunications and Information Administration [data](#), 58 percent of offline households claim to lack the need or interest in broadband.⁵

Another interesting discovery from the project was the lengths consumers will go to avoid digital literacy trainings. In one project in particular, participants opted to give up \$10 in monthly savings or a free computer to avoid digital literacy courses. According to the FCC’s [staff report](#) on the program, “requiring [eligible telecommunications carriers] to offer or provide digital literacy training does not appear to be an efficient or effective model for converting non-adopters to adopters.”⁶

Judging by this project, government programs to increase broadband adoption and digital literacy do not work. Any attempt to replicate this program on a larger scale would likely waste taxpayer dollars.

As a further example, programs to increase adoption have not only been ineffective, they’ve been abused. The FCC Inspector General report for 2018 [found](#) that the percentage of improper payments from the Lifeline program was 18.47 percent.⁷ In one particularly egregious case, one recipient of Lifeline funds [became rich](#) off these subsidies, using millions of taxpayer dollars to pay for vacations, tuition, and real estate.⁸ If digital literacy programs funded by taxpayer dollars were to be instituted, proper checks and guard rails would need to be put in place to prevent the fraud and abuse that has been rampant throughout government programs giving away dollars under the guise of digital adoption and literacy.

The goal to increase broadband adoption in the United States is admirable, but we must consider past experiences before creating expensive, ineffective programs. If you should have any questions regarding this issue, please reach out to me at kmcauliffe@atr.org or 202-785-0266.

Sincerely,

Katie McAuliffe
Executive Director, Digital Liberty
Federal Affairs Manager, Americans for Tax Reform

⁴ Scott Wallsten, “Learning from the FCC’s Lifeline Broadband Pilot Projects,” (Technology Policy Institute, March 2016), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757149

⁵ Rafi Goldberg, “Unplugged: NTIA Survey Finds Some Americans Still Avoid Home Internet Use,” (National Telecommunications and Information Administration, April 15, 2019), <https://www.ntia.doc.gov/blog/2019/unplugged-ntia-survey-finds-some-americans-still-avoid-home-internet-use>

⁶ Wireline Competition Bureau, “Low-Income Broadband Program Staff Report,” (Federal Communications Commission, May 22, 2015), <https://www.fcc.gov/general/low-income-broadband-pilot-program-0>

⁷ Mark Stephens to Chairman Ron Johnson, August 27, 2019. <https://www.fcc.gov/sites/default/files/improper-payments-compliance-report-fy2018.pdf>

⁸ Katie McAuliffe, “Fraud still plagues the FCC’s Universal Service Fund,” (The Hill, February 14, 2017), <https://thehill.com/blogs/pundits-blog/technology/319446-fraud-still-plagues-the-fccs-universal-service-fund>

Attachment—Additional Questions for the Record

Subcommittee on Communications and Technology
Hearing on
“Empowering and Connecting Communities through Digital Equity and Internet
Adoption”
January 29, 2020

Ms. Angela Siefer, Executive Director, National Digital Inclusion Alliance

The Honorable G.K. Butterfield (D-NC)

1. How would access to more unlicensed spectrum promote broadband adoption?

Response:

In order to obtain a more nuanced understanding of this issue, the National Digital Inclusion Alliance defers to the Director of the Wireless Future Project from New America, Micheal Calabrese’s Testimony to Subcommittee on Communications, Technology, Innovation and the Internet:

Access to more unlicensed spectrum opens up the potential for more local solutions, particularly in rural areas. The 5.9 and 6 GHz proceedings pending at the FCC exemplify both the promise and peril of the current imperative to share or reallocate spectrum to advance America’s 5G future. Unlicensed spectrum is what ultimately makes both mobile and fixed broadband service more available, fast and affordable to consumers and businesses nationwide. More unlicensed spectrum is needed to distribute a gigabit or more of bandwidth to all the users and devices in our nation’s homes, offices, schools and other venues. Since the NTIA is primarily an advocate for federal spectrum users, and the FCC is focused primarily on promoting private industry and the economy, in our split system of spectrum governance it is imperative that Congress play a mediating role in defining the balance that best serves the broader national interest.¹

¹ Michael Calabrese, *Director Of Wireless Future Project at Open Technology Institute, Testimony from “The State of U.S. Spectrum Policy” United States Senate Committee on Commerce, Science and Transportation: Subcommittee on Communications, Technology, Innovation and the Internet.* p. 4-10.