0:05
Hello, thanks everybody, for standing by. We appreciate your presence for today's webinar!

0:11
Remember, today's webinar, all attendees will be in listen only mode for the duration of the event.

0:17
Today's webinar is being recorded.

0:20
If you have any objections this is probably a good time to disconnect now.

0:24.
Thanks for joining us today for another BroadbandUSA's monthly webinar.

0:29
I'm Don Williams Senior Specialist for Broadband Development with NTIA's BroadbandUSA.

0:36
Today's webinar focuses on how broadband enhances local economies. This session's going to provide an overview of how communities and broadband providers are working together to expand broadband access to residents and businesses and other institutions, to build resilient, rural economies.

0:56
We have a great cast today presenters, I'm happy to introduce them.

1:00
Our presenters today are Laura Mathena, Director of Economic Development for Mid-Atlantic Broadband.

1:07
Indraneel Kumar, PHD, Regional Planning, Principal for Purdue's Center for Regional Development. Josh Sediment, Vice President of Policy for NTCA, Rural Broadband Association. Let's review a few logistics. First, we're going to open up the webinar for questions after the completion of the presentations.

1:28
As you'll hear from each presenter, you can use the question box on the right-hand side of your screen to submit your questions and comments.

1:36
Second, presentation, along with a transcript and audio recording of today's session, be available on the BroadbandUSA website in approximately seven days. When you go to the website, you'll find that under Events Past Events tab.

1:52
Finally, I really do encourage you to do this.

1:56
Visit the BroadbandUSA website for information about our technical assistance program, which I am a part of, and it's wonderful, including useful guides, products, publications, and other tools that can assist you, and community planning, funding and implementing a broadband project.

2:14
The newest additions to our website are the exciting permitting section, as well as American Broadband Initiative Milestone Report.

2:23
That's going to be under the Federal tab.

2:26
Well, it's time for us to begin, and I'm very happy to introduce our first speaker. Lauren Mathena is the Director of Economic Development and Community Engagement at Mid- Atlantic, Broadband, MBC. In her role, Lauren serves as a regional ecosystem builder and represent MBC to a variety of local, state national stakeholders.

2:48
Including Southern Virginia, is economic developers, who rely on MBC's network for business attraction retention and expansion.

2:58
Lauren is currently leading a very interesting program for the initiative, which is a 501 C 3 non-profit, which was created in 2020, with significant investments by MBC and Microsoft Tech Spark.

3:14
Lauren, thank you so much for being here. Look forward to your presentation. Take it away.

3:20
Thank you Dan.

3:22
I'm happy to be here with you. And, again, my name is Lauren. I am here in Southern Virginia. And I'm happy to share with you all a bit about Mid-Atlantic Broadband.

3:36
Next slide.

3:56
I'm not seeing my slides yeah, next slide.

4:05
The slightest change to Martin.

4:09
OK, so. Mid-Atlantic Broadband recently hosted a US. Senator Mark Warner from Virginia, and he stopped by our office. And, and this quote is from him, “if there is one thing we've all learned from that is that broadband connectivity is not a nice to have. It is an absolute necessity.” And I'm sure that many of you on this call today agree with that, even before it became an issue for us next slide.

4:43
For Southern Virginia, broadband really became a priority back in 2004 with the creation of Mid-Atlantic Broadband. Historically, our region has been really focused in agriculture and manufacturing, furniture and textiles. As you look towards the future, our region is adapting to be in the precision agriculture space, as well as advanced manufacturing. And so, no matter what industry, Southern Virginia pursues, I'm having access to high speed broadband, is absolutely

necessary. The blue areas that you see shaded here, represent the counties that Mid-Atlantic Broadband, and now has fiber built into.

5:23
Next slide.

5:27
This map is just a different view. It shows you the blue lines are MBC is 1500 miles of Middle Mile Network. The purple lines represent the long haul that connect our network up to Ashburn, as well as to Richmond, as well as to the subsea cables in Virginia Beach.

5:46
MBC was created as a public private partnership with initial funding from the US. Department of Commerce, the EDA, NTIA, and Virginia Tobacco Commission all came together to help make MBC possible since then however we've become self-sustainable, we're able to use our business model as a way to continue to build our network and also re-invest in our communities. I do want to mention that the NTIA grant up to assist with around 700 of our 1900 miles.

6:18
Next slide.

6:21
This middle mile open access model has been proven, through this case study with MBC and other organizations that are similar to us as a proven strategy to reduce cost of broadband expansion. So, in this case, middle mile as referring to the segment of fiber optic, that infrastructure that connects.

6:44
And basically where the Internet begins, the primary network and the last-mile networks in MBC, is an open access network, meaning that we have a very focused business model. We're not in the last-mile business, but all of the last mile providers, as well as many of the, over the top content providers, are our customers.

7:06
Next slide.

7:10
So, speaking of those large content providers, you might recognize, the sign is Microsoft, and MBC was a major reason that Microsoft was able to locate their data center and Mecklenburg County, which sets geographically on the North Carolina line. And so it strategically located between Richmond and Raleigh. That has helped with Microsoft being able to recruit the workforce that they need, as well as MBC and Microsoft have worked with the local community colleges to create data center academies and have become the model for Microsoft's data center academies across the country and worldwide. And Microsoft has now invested around $3 billion in their data center and Mecklenburg County. So you can imagine the economic impact that that has made for Southern Virginia.

8:01
Next slide.

8:03

Another case study is around foreign direct investments. And this is one situation where, the community of Martinsville, Virginia was recruiting a company called Hardide to locate their US. Facility here in Southern Virginia. And the reason that they are able to do that is, because it MBC's network. So, in this case, our network enables Hardide had to connect their carrier in the UK to their Virginia plant remotely. So they're able to operate their plant, actually, from over in the UK.

8:37
Next

8:41
So MBC has built to all of the industrial parks across Southern Virginia. And as those industrial parks become populated with new businesses and businesses expand, we continue to build that network within each park. I selected this one. Cane Creek Park in Danville, Pittsylvania County. Because it's just one that has seen a lot of really great activity lately, just in 2020. We've extended our network to serve Morgan Olson, which is an advanced manufacturing company that builds all the steps fans. So we know that online shopping has increased in part because of COVID. And so all of those delivery checks are, have some connection to Morgan Olson and are being produced right here in Southern Virginia. We've also extended our network, so that an ISP provider could serve ..., which is a health IT startup, based in Southern Virginia.

9:37
Next.

9:40
So although we do not provide last mile service, and don't have any intention to expand into that space, we're still very much part of this broadband expansion ecosystem. Part of the Commonwealth Connect, which is Virginia's Broadband Coalition, was created to partially in response to Governor Northam, broadband plan, really. His challenge, his goal to achieve universal broadband access for all of Virginia Commonwealth Connect Coalition has been charged with putting that plan together, as well as championing legislation at the state level that will assist with this. And so they're advocating to our legislators, as well as engaging with communities and localities across the region.

10:28
Next.

10:31
And so, as the work continues across the state, and MBC does partner with localities as they endeavor to implement their last mile solutions, MBC is headquartered in Halifax County. And so we're very proud of Halifax County's progress in this area. Their County Administrator happens to be an engineer. And over the past year and a half or so, he has put together a very comprehensive plan to implement last-mile coverage for the County. Right now he's working off of four different grant projects, all of which MBC is a partner on.

11:06
Next.

11:10
In our region, being a more rural area, we do have several electric co-operatives and several of those are getting into the last mile broadband space. And again, MBC is able to partner with

them. And they're a wonderful ISP solution because they're a member driven, their mission driven, they're non-profit, they're able to make these long term investments, and not worry about that time, that it's going to take them to pay back those investments. And so this is one way that the last mile solution as being delivered in Southern Virginia.

11:44
Next slide.

11:49
This is just my contact information. Thank you all for the opportunity to share MBC's story, and some examples from our work with you today. Please feel free to e-mail me or connect on LinkedIn or explore MBC's website, all of that is here for you.

12:04
Thank you.

12:09
Thank you, Lauren. I really appreciate your presentation. And apologies for the initial technical glitch.

12:16
I also just want to say, you know, MBC is a great model for how important middle-mile networks are for economic development strategies and states in rural America.

12:26
So, thanks again for being you're welcome. Our next presentation sort of started just a moment.

12:35
As a reminder, we're going to have time for questions at the end of the session.

12:39
Use the question box on the right-hand side of your screen to submit questions or comments at any time.

12:47
Our next speaker we're really looking forward to hearing as well is Indraneel Kumar.

12:54
He is currently the Principal Regional Planner at Purdue's Center for Regional Development, where he focuses on regional demographics, economic, and workforce analysis, GIS databases, spatial analysis, and quantitative methods.

13:11
...

13:11
Indraneel has undergraduate and graduate degrees in architecture, urban, regional, and community planning from both India and the USA.

13:20
He earned a PHD in transportation and infrastructure systems from Purdue University.

13:28
Thank you for being here today. I understand we're going to be hearing about a very exciting research project that was recently conducted by yourself and your team.

13:39
So take it away.

13:41
Thank you.

13:42
Thank you Don. Good afternoon, everyone. Thank you for joining us, and thank you for this opportunity.

13:49
As Don has mentioned, I will be talking about the specific study jobs creation from rural broadband companies, and my colleague, Doctor Robert ..., and one of our graduate research assistants who graduated Doctor Young D Kim.

14:08
So all three of us actually worked on this report.

14:12
And as it entailed quite a bit of data analysis. Next slide, please.

14:19
So, this project involved quite a few partners and the painful to every one of them.

14:26
So foundation for rural service, NTCA, your JSI and then Rural Telephone Finance Co-operative. They all share their data with us. Some of the data actually had come with confidentiality parameter, and we followed those protocols, so, so quite a bit of data was gathered, and compiled and analyzed for this project. Next slide, please.

14:55
So, what, exactly it was. So, it is, the objective was to evaluate the economic effects. We can call it economic footprint, or economic impacts.

15:07
Essentially, for a small, rural communications provider, in the US, and then it is for a single year. So, so we need to understand that.

15:17
The study is limited on the Economic Impact Snapshot, for a single year. That said we also see the ripple effects from the jobs created by the rural broadband companies.

15:31
So, a bit of idea for the scale that we are talking about.

15:36
Rural broadband providers, this a large proportion of the nation's land mass, but roughly only 5% of the Country’s telecom subscriber. So, we need to keep that skill in mind that these rural providers, next slide, please.

15:59
So what exactly, this is, study is and what it isn’t. And we need to keep that context in mind first. It is static.

16:09

So it's actually a single-year study and not a dynamic economic impact where we are studying a multi-year impact of foreign investment.

16:19
Then it is a single year, single geography, economic input, output type analysis.

16:25
And when I say single-year, single-geography is that we are delineating the states. These rural broadband companies advocated an individualist state. So we identified triangulated both states and then developed IO tables and IO models for those individualist state.

16:45
So, so what happens is, whenever there is an economic shock, it can be gain or loss.

16:51
The spill overs can also happen, what is space as well as time? So we need to keep in mind that the economic impacts we are presenting is limited to that geography is in that report. It is not accounting for spillovers which can actually add to the economic impact.

17:11
But the important thing is that these IO tables are made at the level of six digit, NAICS, what we know as North American Industry Classification System, or industry sectors, and that is the highest detail possible.

17:28
So, essentially, we are talking of IO model or IO table will, which are like thousands of rows by the thousand columns.

17:35
So, pretty, pretty significant data is there.

17:40
Now finally, it is not a general equilibrium analysis. So this, this type of analysis is providing a static snapshot of economic impact. Is this, we are not doing a social accounting matrix of typing when we can, we can analyze the policy impact that those kinds of study while quite a bit of additional data additional. Next slide, please.

18:13
So, data for this analysis we obtained from JSI and Foundation for Rural Service. We also used Reference USA to tag those data.

18:22
And essentially they will actually go from the members of NTCA or Rural Broadband Association and which represents roughly 850 community-based telecom companies serving the sparsely populated rural areas. And, and, and when we started triangulating those members, we were able to locate at least two third of NTCA and members to 44 states. And then, we gathered all the data related to that. What are the individual lakes called the revenues and sales information and things like that? So, actually, economic impacts on, based on the specific information of those companies. Now, remember, it's about two thirds of companies, the data that was used for the study.

19:13
Next slide, please.

19:21
I think we have missed one slide, one slide before.

19:27
Thank you.

19:28
So, So the IO models were actually established for each of the 44 states separately, so that we've got these companies are located in different states, and each state's economy is unique, that the supply chain value chain linkages are unique, and that's why individual IO models were established.

19:49
We specifically used the CHMURA economics and analytics, it's an online modeling group.

19:57
And, and they have a platform known as Jobs EQ.

20:01
So we are using the input output modeling component on this modeling group, and then that these models are capable of actually estimating the ripple effects of ripple effects, you know, from jobs creation or even retention, sales outputs, earnings. So, these are some of the economic output that we can get from these models.

20:25
If we run those models for a regional economy, now, when we talk about economic impacts, we need to know that the least economic impacts happen when an industry, or a member getting jobs they are creating, or retaining.

20:43
Right. But then, then, the next step comes in, is estimating the ripple effect. And those are of two types: the indirect and induced effects.

20:53
The indirect effects actually happens because of the supplier and other industries that are part of the value chain.

21:01
And this is where each state's economy becomes unique.

21:05
And then the induced effects or induced jobs can happen in the services and other support industries that are actually the supporting these suppliers, and that may be actually supporting the main industry or main business entity as well.

21:23
What happens is the economic impact is actually the sum total of the direct indirect and induced impacts.

21:32
Next slide, please.

21:37

So, here is an example, so, wired telecom carrier that is the rank one that is the tier one, where the jobs created or retained. And then, you know. And it has some sort of business operations, some sort of revenue, sales activities, economic activities, that are happening. And then, the suppliers can be, you know, the engineering companies, or semiconductor company.

22:00
So, so, so, the supply chain that, that that is part of that is coming in tier two or rank two and then rank 3 tier 3, where the induced impacts that happening. It can be accounting firms, lawyer, and even retail in the context that the wages and earnings, the money that is spent by the households. That can actually, so the service economy, the economy of the local, local areas and regions.

22:30
Next slide, please.

22:35
So, what kind of economic impacts we are talking about as they say that this is a single year snapshot, so, and only 2017, all these firms actually created, roughly created, but supported more than 77,000 jobs across different industries.

22:54
And this is the snapshot for the 44 states in total. And the total economic impacts or the total economic output is approximately $10 billion. So, that's a substantial economic footprint that we are talking about.

23:10
And then almost 2.5 billion dollar is in compensations. And then, you know, the effective industries, the industries that are part of this, the padding from communication carrier, then a variety of suppliers. We talked about it, manufacturers of semiconductors, engineering services, a certified public accountant, and even legal counsel.

23:33
And these, the last bullet point, which is about different ranks, I think I had explained in the graphic previously.

23:40
Next slide, please.

23:44
So, these NTCA, a member rural broadband companies, which we were able to analyze about two-thirds of those companies. They are actually a significant economic drivers in the rural communities.

23:56
Now, the large economic impact can happen, also, if the jobs created are in large number, but then there is an additional role, which I may want to highlight, is the catalyst role or broadband services in industries. So, you know that catalyst is in any chemical reaction. What does catalyst do when it's not creating new chemical?

24:19
It is basically increasing the efficiency or the speed of that chemical process.

24:25

So industries like broadband or logistics have the capacity to operate as a catalyst role.

24:33
This particular term was actually apply in the context of logistics, by Dr. Shift from MIT. That is a significant amount of research going on, that it will miss you need logistics for efficient manufacturing and goods movement. Similarly, you need broadband means it has it has sort of a catalyst role supporting multiple types of industries in increasing the efficiency, and that's why mister economic footprint or impacts are ripple effects can be even larger.

25:04
So, so a little bit on multipliers. So for every job created by an NTCA, remember, approximately two additional jobs were created in the regional economy.

25:15
Now that these job multipliers are actually varying by individualist states because we ran individualist state models.

25:22
So, it was about 3.14 and 2.2 in Alaska.

25:28
Miss all that said, the spatial variation over the states, I have mentioned previously that every state is, is a unique economy on its own.

25:38
And then finally, note that these impacts are a single-year snapshot only.

25:43
Next slide please.

25:46
And here is my contact and you can access the report from Purdue Center for Regional Development Website.

25:54
And the address is there.

25:56
Thank you very much.

25:58
Thank you very much Indraneel, really appreciate your comments and interesting study. Fascinating, thanks. Hey, our next presenter is so Josh Seiddemann, and Josh is the Vice President of Policy for and NTCA.

26:12
The Rural Broadband Association focuses on federal regulatory issues as well as technology and market trends affecting rural telecom industries.

26:23
He supports research initiatives and programming for a Smart Rural Community, an NTCA initiative promoting broadband enabled economic development, education and healthcare. He's also co-chair of one of my favorite groups the NIST Global Cities Team Challenge and Rural Ag Superclusters sorry.

26:46
And he's also working with its high-tech jobs group of the FCC, the Precision Agriculture Taskforce. He's a regular contributor to the N T C A blog and other media.

26:58
He holds an undergraduate law degree from Michigan University, and is submitted to practice law in New Jersey, New York, and the District of Columbia. Thanks for being here. Josh, looking forward to your presentation.

27:14
Thanks very much, Don. Can you hear me OK?

27:17
It's just great, OK. Great. It is really great to be here today. It was really quite a surprise to see that Kumar highlighted the economic impact of the ... membership in this study. That was a study that I've been aware of and been involved preferably in the development of it. Not substantively, but at least working with our Foundation as they were trying to manage it. But to see it presented to this audience and it's just very gratifying. And I'm just really pleased to see that those numbers come out as well.

27:51

What I'd like to do today is tell you a little bit about Smart Rural Community, and not so much the program itself, but more.

27:58
So the impacts that the small broadband provider member companies, at NTCA have on their communities, spillover…can occur throughout the nation in their regions.

28:11
By way of introduction, NTCA, the Rural Broadband Association represents about 850 small community-operated, facilities-based broadband providers. These are companies that began as telecom companies in the early part of the 20th century. Certain areas where the Bell Company didn't build out because there just wasn't the business case to go to a town of maybe 5000 or 10000 people.

28:37
All of our members are broadband deployed.

28:39
We serve about 37% of the landmass of the United States, but only about 5% of the US population.

28:48
The, by using programs administered by the Federal Communications Commission like Universal Service by using the loans and grants administered by the Department of Agriculture's Rural Utility Service. Our members have combined those with private capital and innovative investment strategies and their broadband achievement.

29:07
And right now, 67% of our members can get speeds to their customers of 100 meg or higher.

29:16

And 45% of our members can get those sorts of speed to reach that sort of their membership base with a gigabit service. Next slide please.

29:32
Interior designer Barclay Butera reportedly said that if you really want to understand the best way to arrange the furniture in your house, take a look at how your guests arranged your furniture when they were at your last dinner party.

29:46
Because how your guests re-arranged your chairs and tables and furniture gives you a sense of what works best for others.

29:54
And we can tend to see in many of our daily lives, whether business or personal. We might think that this is the best way to do it, but then someone comes in and says, you have something to pivot a little bit. Looks better, Just what's re-arrange the furniture?

30:06
My guess is that when the current crisis is over, we're not putting our broadband chairs back where they were before.

30:15
We've learned a little bit.

30:16
We've learned a little bit about how broadband is really used for education, and for telehealth and for economic development.

30:22
These are things that are NTCA's members have been practicing for years, but the scope and scale, the intensity of the increase in the last eight months has just been astounding what maybe not just a few students learning for all students from home and maybe not just a few people telecommuting but suddenly everyone, telecommuting or many people telecommuting.

30:44
My proposal, as we walk through these few slides today, before the discussion, is that, if we're really interested in building resilient rural community economies, what we need to think about are what are the important things for a rural community.

30:55
There are jobs, it's educational opportunities for children and adults.

30:59
It has access to good health care, and broadband can support all of that.

31:05
Let's go to the next slide.

31:07
We're going to talk about education for a moment.

31:10
During the COVID pandemic, 55 million K through 12 students in the United States were affected by COVID school closures.

31:20
There are 49.5 million households with children 18 and under in the United States. And if we crunch the numbers a little bit more, if we take a look at households that have children who are between the ages of 6-18 years old, who are school age.

31:34
And then we develop that number to determine how many of those households have at least one working parent.

31:40
And then think about how many of these working parents have the ability to telecommute.

31:44
We're looking at 15 to 17 million households throughout the United States that will, now, you know, certainly over the last few months, possibly in the coming weeks.

31:54
And maybe in the future, as we begin to rethink about how we work from home and to learn from home, 15 to 17 million households must serve multiple broadband users simultaneously.

32:07
Our members have really just an example of what small town, broadband companies have done, members who are members of our Smart Rural Community program in Rush Center, Kansas, Golden Bell Telecom and Association. Their students participated in a virtual field trip to Yellowstone National Park.

32:27
They used a gigabit, symmetrical connection that's provided by Golden Bell telephone to school. They have an industrial arts classes, and built in an award winning, tiny house, and part of the educational process was teaching the kids how to deploy Cat five cable throughout the house. Again.

32:44
All getting people really calculated with a notion of how important broadband is Copper Valley in Valdez, Alaska, supplement local staff, with online tutorials, lectures, homework tracking, and continuing education. Now, again, these are all actions that were undertaken before.

33:05
The COVID crisis hit, but these are the sorts of building blocks that have been in place for years that several, we will now see are so important. Let's take a look at the next slide. Let's talk about rural telehealth.

33:17
Again, access to jobs, healthier educational opportunities.

33:21
48 million Americans live in rural areas, except that rural areas have 25% fewer physicians per 100,000 residents in urban areas.

33:32
60% of the nation's 7200 health professional shortage areas are in rural counties.

33:39

Poverty in rural areas can increase complications from chronic conditions who decreases the likelihood of obtaining treatment to prevent adverse outcomes.

33:48
In our Smart Rural Community Program, a few years ago, we wrote a paper. It was called Anticipating the Benefits: the Economic Benefits of Rural Telehealth, And we found that, per facility, on average rural telehealth deployment could save an average of $30,000 per year in lost wages and travel expenses that would otherwise be incurred when rural residents have to travel to distant hospital or health facilities.

34:13
Rural Telehealth can increase a local laboratory and pharmacy revenues ranging 12,000 to 45,000 dollars a year.

34:21
How is Telehealth used to take a look beyond these numbers to the human side?

34:26
And in Carrington, North Dakota has a population of fewer than 2000 people, Dakota Central Telecommunications, and broadband network that supports the use of robotic devices in the home that can administer tests and medications and report patient information to the hospital over fiber connection.

34:45
In Monk's Corner, South Carolina population of 12,000 that's a thriving metropolis compared to Carrington.

34:52
The Roper Saint Francis, Monk's Corner Medical Center uses tele psychiatry.

34:58
They have been able to reduce the average stay of patients from 36 to just four hours, and you can think the cost savings and patient comfort knowing that they can be treated so quickly and not have to stay.

35:12
Let's take a look at jobs. Let's take a look at the next slide.

35:15
We know that telework is so important.

35:18
There are 43. 63, rather, I'm sorry, 63 million Americans are going to work from home.

35:26
40% of Americans can actually telework, and during the COVID pandemic, all of those 40% of Americans have telework in some capacity.

35:35
The importance of telework can't be underestimated when you're thinking about the impacts of job loss, drop decline during the COVID pandemic.

35:43

Telework capable jobs at the beginning of the pandemic, the job decrease was just half percent, just 0.5% shrinkage in job loss.

35:53
But, during that same period, for those jobs that weren't telework capable, the job decrease, was 2.7%.

36:01
Where do we see this again spilling out to human to an impact?

36:05
And I know that these numbers can sometimes be overwhelming, or numbing are so large, but in McKee, Kentucky in Appalachia: People's Rural Telephone Co-operative.

36:15
It's part of a program that covers 23 counties in rural Kentucky.

36:21
It brings cutting-edge telework opportunities to workers, especially in rural areas and small towns.

36:27
It has generated more than $70 million of economic activity, and has supported more than 3100 jobs connecting teleworkers to employers who are well beyond this geographic region. But with broadband, these people can work anywhere.

36:47
We're going to take a, jump on to the next slide. I know that we can't talk about rural America without talking about precision agriculture.

36:54
And, as Don mentioned, it's so important to us, the rural, Ag. Superclusters work at NIST and NTIA.

37:02
I know, we talk about GPS guidance on a tractor and people say, Well, what do I need GPS and I'm just going from one field to the other.

37:09
But when you go from one end of that field to the other and you have to turn around, get that next row, plowed and seeded.

37:17
You're manipulating a boom arm that's 25 to 30 feet long.

37:22
And you want to keep a tolerance of about eight inches Because, imagine if you're just a little bit off it over distance, how that skews.

37:30
Imagine how much land is consumed that doesn't need to be used the inaccuracy of seething a fertilizer application of irrigation. It's just the yield increases are measurable, and astounding.

37:45

We find it again, taken another. We've got a town in Sioux Center, Iowa Premier Communications, Sioux County, Iowa is the 12th, largest revenue generating county from agriculture in the United States as one more than 1.6 billion dollars in annual crop and livestock sales.

38:04
Where does Broadband come in, broadband enabled sensors, feeding bins that can measure and dispense the exact amount of feed?

38:11
There are other sensors that enable farmers to calibrate planting with soil conditions and track rainfall to create a mapping database of crop harvest by the acre.

38:21
There are systems that can scan image crops as they as the tractor moves through the field centers, images to the cloud using artificial intelligence.

38:31
Read the images and then direct actions with fertilizer or perhaps they support or irrigation back down to the tractor in milliseconds, you're talking about blockchain and the value for agriculture.

38:45
Systems that can load and track, let us, you know we have all these.

38:48
Sometimes we have these recalls and what happens is you have major grocery retailers across the country have to just get rid of an entire crop. We have to get rid of this type of lettuce. There's no but where did it come from?

39:02
But with blockchain, we can isolate the farm.

39:04
That bad batch may have come from the rest of the food can stay on the shelves.

39:09
Think of the food waste that's avoided, cost savings. Next slide, please.

39:18
This, I really think is what it's all about.

39:21
Access to health care, Access to jobs.

39:26
Access to educational opportunities, local broadband providers, working with other local leaders to find collaborative solutions in order to create these opportunities so that when we think of rural America, we think of strength, we think of resiliency, we think of optimism, and it's welcome. Welcome to our town. Let's build it now.

39:49
Don, thanks so much for this opportunity.

39:54

Well, thank you Josh. Appreciate your presentation. Well, now we're going to come to the question and answer component of this webinar.

40:04
We've got a number of questions that have been raised by her audience and Lauren, The first one is for you.

40:13
They want to know what role MBC has in recruiting a company such as Microsoft to Southern Virginia.

40:26
Yes, so looking at the Microsoft example in particular, Microsoft was working with the Virginia Economic Development Partnership, which is our state level group that focuses on business attraction as well as expansion. They had identified, and we're in the final stages of actually another site in another part of Virginia, and kind of towards the end of that due diligence found that there is a reason that that site wouldn't work.

40:58
Fortunately, Virginia maintains a very detailed database available sites. And so rather than losing Microsoft as a client, they were able to refer them down to Southern Virginia, where the State Partnership then worked with the County Economic Developers. At that point, MBC was at the table to ensure Microsoft that our fiber could meet their needs.

41:24
Thank you, thank you. I'm sure you're working very closely with the economic development organizations in Virginia.

41:31
Yes, absolutely, on a regular basis, we receive, as the economic developers, are filling out their responses for inquiries is then they're forwarding the telecom piece to us to fill out that portion along with them.

41:44
OK, thank you. Indraneel, the next question is for you, and it's obviously from someone in the audience who also likes quantitative methods.

41:55
They want to know why you picked the CHMURA platform, and for those in the audience that is a labor and wage data platform. 42:09

Oh, yes, it's a labor market platform, but it also has an economic component it is actually part of the jobs EQ platform. I think CHMURA has a platform.

42:25
So, we actually only use the input output modeling part of that one. Now, that said, as I mentioned, there are other models also, and, actually, we did a good thing, also.

42:42
So, we have a subscription, and that's why we use that.

42:47
And another thing was the impact that run the revenue and sales, and all those compliments.

42:55
And then, we were able to build individual state models.

42:59
That slightly, OK, yeah, it's a very useful platform library job, I agree. Josh, there's a question for you. And most of your members are obviously serving rural America.

43:15
And I'm wondering, and the question is wondering, what do you see is the relationship?

43:21
I mean, fiber, certainly a gold standard, premise connection.

43:26
But a lot of places I work and I take a lot of your members are also doing wireless systems.

43:31
I want to talk about how you view the relationship between hard-wired and wireless systems in rural America.

43:40
Sure. I think that I think that the FCC summed it up best. They refer to them as complimentary but not perfect substitutes.

43:51
We know that that certainly, there's a ton of work that gets conducted with telephone calls from our call, when we're out in the field, when we're traveling.

44:00
But we also know that, as Don said, that fiber-rich connection is necessary for so many of the data intensive applications that we might be using.

44:09
We also know that 5G is on the horizon. That's going to give us blazing speeds in capacity and speeds when we're out and about.

44:16
But, it's, again, it's always important to remember that 5G, like, all wireless services. It does require a wired connection within the network.

44:24
So I'm going to stop now, but. Again, I'm happy to talk, I'm happy to just really talk through this with anyone anytime. I hear that.

44:40
Another question they have, the audience had was you use the word “open access”.

44:46
Could you briefly explain MBC as an open access network to explain what that means?

44:54
Sure. So essentially, I guess, by comparison, if another provider was building their own middle-mile component, then only they wouldn't be able to access that. And if another last-mile provider wants to get into that area, than they would have to access their own middle-mile component. And so, where middle ware MBC has the social welfare mission and we're open

access means that any number of ISP's can build off of our middle-mile. So we're not trying to block competition. We're actually trying to encourage it so that multiple ISPs could serve the same area. It helps to reduce their costs to get into the region, then, and that was really the whole basis of bringing MBC to creation in the first place.

45:43
Thank you. Thank you. Indraneel, now, a question for you.

45:48
Um, the Job Impact Report, the Economic Impact Report seems really significant to me and your study.

45:58
Would you say that?

46:02
Wish I had an extraordinarily high impact. We were expecting something like that or was that a surprise?

46:09
I know produced on a number of other such studies but it seemed like a pretty dramatic impact from my point of view.

46:18
It is not actually that dramatic.

46:20
If you look into the multipliers. Multipliers are one way to come here and you know 2.2 or 3.4. That means you know one job and approximately close to two jobs creating in the local and regional economies are not that dramatic.

46:37
You know, I will this I would have surprised if the job multipliers would have been higher, which they were not.

46:45
You miss this is not like an automotive sector.

46:48
Its automotive sector, have really high multipliers dependent on the supply chains and then there are other studies also that have established some major impacts.

47:00
So late, Professor ...

47:02
From Department of Agricultural Economics at Purdue University, did a very rigorous analysis that was a benefit-cost analysis for the broadband.

47:15
And then, and in a relatively rural area, because that of the co-operative is actually serving somewhat, quite a bit of rural counties are there, and he came up with the estimate of what is to one. That's the benefit-cost ratio. So every dollar invested may come up as a return as a benefit of

approximately $4. So, so now this study is not exactly a benefit-cost to study this, this is a slightly different flavor.

47:45
But when you are talking of the entire US, 44 states approximates, where the data, we were able to triangulate.

47:53
So but the multipliers I think are reasonable and deliverable. I think the study, you're talking about that 4 to 1, that was the one where US the Purdue folks estimated.

48:06
What would happen in the state, if the rural co-op models were generally accepted throughout the state, OK, OK.

48:19
Let's see, Josh, a policy question for you and that is, what do you think's the single most important benefit of broadband and in rural, rural Americans?

48:35
Oh, wow, single most.

48:40
I'm going to dial it back, and I'm going to say that I was going to say that that question, I would frame the question differently from, I'm going to answer it this way.

48:53
There are numerous economic, sociological and other interdependencies between rural and urban spaces.

49:00
So, if you asked me what the greatest single impact is for broadband in rural America is that.

49:05
It connects it to the rest of the nation, no different than the post-road that are provided for in the Constitution.

49:12
And what that does is it allows rural Americans to import from urban America and to export to urban America, and it enables people in urban areas to export what they have to the rural areas and to bring to their areas with the rural areas.

49:29
Yeah, that makes sense to me.

49:30
I know a few years ago, the Hudson Institute did a study and they said, if you invest in rural broadband, the local, more populated areas benefit almost as much as the rural areas in terms of economic growth and activity.

49:46
I often use that when we're doing technical work, because it's nice to tell people who already have broadband.

49:54

Then if you help invest in rural places nearby, you also benefit economically, Right?

50:00
I mean, it's the, I remember the study that you're talking about, there was almost a 50-50 split on jobs that are supported by rural, broadband endeavors because all of the IT supplies are not produced in these towns of 5000 people in those are produced and major. Metro centers and the fleet vehicles, everything else that these companies use.

50:21
So, it's a, again, symbiotic relationships and interdependencies that really make that really connect the nation.

50:30

Lauren, we have a very particular question from somebody who lives in the Rappahannock Electric Co-op area.

50:38
They want to know if MBC is providing any middle-mile services to the co-op.

50:46
And Rappahannock is a bit north of where the bulk of our network is. I believe, if I'm looking at my map right in front of me. I will say that we, if I'm correct, then, we do have an EDA application and right now, to continue to expand our network east and north.

51:14
I can't confirm off the top of my head if we are working with that electric co-operative. But we are moving and these other directions to continue to expand.

51:24
OK, thanks.

51:27
Indraneel, I have a question, I guess, it seems, to me, there's a lot of good answers to it, but mainly.

51:37
Why do you think fundamentally broadband is?

51:42
I like to say it's not a magic bullet for economic development, but if you don't have it in your economic development strategy, rural America is not going to do well. What do you think the fundamental reason for broadband being so important?

51:57
As a part of rural Economic Development Strategies, what, why is that so important?

52:06
As a capitalist.

52:12
Is that for me, right? Yes, yes, thank you, thank you.

52:16
So, catalyst is, is a term, actually, that came out from logistics research.

52:24
And, and, and, as I mentioned, I think in the talk that Doctor…, he has written a lot of book on logistics clusters and, and essentially teasing out that, you know, this, we understand logistics a bit more. And I'm speaking, because my background is transportation and infrastructure systems.

52:45
Uh, so, essentially, you improve logistics or invest in there any kind of bulk, good manufacturing and bulk goods, movement efficiency increases.

52:57
And, and, and essentially it actually then reaches out to the entire economy.

53:02
Similarly, broadband is actually a network, right? Logistics and transportation is a network.

53:09
Broadband is a network or that's what we want to see and Don, Josh and Don both mentioned, the season, Ag and all those kinds of high technology initiatives that are going on.

53:23
And those are only feasible if you have a proper type of broadband infrastructure to support that.

53:30
And, and, and that's where the, the efficiency or adding to the efficiency part comes in, now, teasing out that catalyst role through calculations.

53:40
And that's a lot of work, that, that is the future part, maybe, but that's why I alluded that you improve broadband, and you will be surprised how many different kind of industry sectors and, and hope this businesses, everything, that every part of the socio-economic system will, because, because it's, it's almost the network, it's the network behind it.

54:08
So, was I able to answer that a little bit? Oh, well done.

54:13
Well, listen, there's another quantitative person was interested in your choice of using CompuServe data, and we'd like you to talk about the quality of the CompuServe data used in comparison to, perhaps, federal databases about establishment.

54:34
So, so this depends on the, the, the establishment's data that we got, and thanks to Josh.

54:43
A lot of data was given to us. Some of them went under the confidentiality parameter.

54:49
As we mentioned, we had to locate these data.

54:55
These companies do individual states, we knew the zip codes, and things like that.

55:00
And, and that's where we used a list.

55:04
You know, I have just given one example, reference USA, but you know, let me tell you we have access to all sorts of establishment databases from Google and Dun and Bradstreet and different kinds of databases, so in the slide. I had mentioned that but actually we looked into different options to triangulate and look at these companies to different states.

55:27
That said, you know, also, in the previous question about the economic model, we have different economic models, as well, and we did look into, you know, whether the, whether the results are reasonable, or not.

55:41
We, we chose to go with one, so, so, so that's that. That is one reason why we use that, and, and as I mentioned about 2/3rds, we were able to located properly.

55:54
And because of the confidentiality parameters, some of the companies we could not triangulate properly, but different kinds of establishment databases were used. Reference USA was just one of them.

56:08
We have access to several of those in the sense. Thanks you. Appreciate that. Listen, the webinar is just about over. We've got about another minute. Um, little bit of advertising for the future, we're going to take a webinar break in December or January, but please join us again on February 17th for the next webinar, which is entitled, “Data As the Foundation of Broadband Planning”.

56:35
That seems reasonable. I want to thank all our speakers again today. Everybody did a great job, really. Thanks so much for being here.

56:44
Remember, the presentations, transcript, and audio recording should be available in about seven days on USA, BroadbandUSA website.

56:54
Finally, I just wanted to take a moment to say that broadband technical assistance is available for on BroadbandUSA, and that includes broadband deployment, broadband expansion, and also very important digital equity issues, digital adoption, digital literacy training as well.

57:16
So, please, if you have any questions and would like one-on-one, technical assistance on any of those issues contact BroadbandUSA and we'll be happy to work with. Thanks very much, everybody, and happy middle of the week.

57:35
Thank you.

57:36
Thank you.

57:37
Thank you.