The Free State Foundation's
TENTH ANNUAL TELECOM POLICY CONFERENCE

"Connecting All of America:
Advancing the Gigabit and 5G Future"

March 27, 2018
National Press Club
Washington, DC

"All-Star Panel I: Solutions for Connecting America and Closing Digital Divides"

MODERATOR:

Seth Cooper – Senior Fellow, The Free State Foundation

PARTICIPANTS:

James Assey – Executive Vice President, NCTA

John Jones – Senior Vice President of Public Policy & Government Relations, CenturyLink

Tom Power – Senior Vice President & General Counsel, CTIA

Nicol Turner-Lee – Fellow, Governance Studies, Center for Technology Innovation, Brookings

---

* This transcript has been edited for purposes of correcting obvious syntax, grammar, and punctuation errors, and eliminating redundancy in order to make it more easily readable. None of the meaning was changed in doing so.

P R O C E E D I N G S

MR. COOPER: Good morning.

I'd like to welcome the audience here to the Tenth Free State Foundation Annual Telecom Policy Conference and to also welcome the audience on C-SPAN this morning, who tuned in to hear about the latest and future issues of digital communications policy.

Our first all-star panel for today is titled "Solutions for Connecting America and Closing Digital Divides." We have four panelists with us this morning, and I will introduce them briefly.

John Jones is the Senior Vice President of Public Policy and Government Relations with CenturyLink. He's responsible for representing CenturyLink's policy and advocacy positions to federal, state, and local policy-makers. That includes the FCC, Congress, state regulatory bodies, and other agencies, and industry groups.

He has a 24-year tenure with the company that is now CenturyLink, reaching back through CenturyTel. Prior to that, he was a director and adjunct communications faculty member at the University of Monroe for a dozen

years. He's also a member of the Board of Directors for USTelecom. So we're glad to have John here today.

We also have with us Tom Power, who is Senior Vice President and General Counsel of CTIA. He has held that position since 2015, prior to which he was U.S. Deputy Chief Technology Officer for Telecommunications in the White House Office of Science and Technology from 2011 to 2014. And he was Chief of Staff at NTIA from April 2009 to August 2011.

He's worked in industry and law practice as well, and was a senior legal advisor to FCC Chairman William Kennard. And we're glad to have him because he's a recent addition to our panel. It won't be reflected in the bios that we have there. But we are certainly delighted to have Tom Power here.

We also received, late Sunday night, word that Michael Powell would be unable to attend because of an unavoidable last-minute schedule conflict. So we're delighted to have James Assey with us here today, who is Executive Vice President at NCTA, the Internet and Television Association. He's the second most senior executive at NCTA, involved in all aspects of their work.

Prior to that he was a longtime member of the U.S. Senate Committee on Commerce, Science, and Transportation, most recently including serving as Senior Democratic Counsel to the Committee. He has worked in law practice as well and taught communications law as an adjunct faculty member of Georgetown University Law School. So welcome back, James.

And I'd also like to welcome back Nicol Turner-Lee, who is a Fellow in Governance Studies at the Center for Technology Innovation at Brookings. Dr. Nicol Turner-Lee is a contributor to Brookings' TechTank. She was previously Vice President and Chief Research and Policy Officer at the Multicultural Media, Telecom, and Internet Council, MMTC.

In that role she led the design and implementation of their research, policy, and advocacy agendas. Prior to that she was Vice President and the first Director of Media and Technology Institute at the Joint Center for Political and Economic Studies. And so we're certainly delighted to have you back as well, Nicol.

So just a little bit about the format for this all-star panel. Each panelist is going to kick things off

with an opening remark, going about five minutes, and we ask you to keep that to five minutes or the Free State Foundation panel buzzer will go off.

(Laughter.)

MR. COOPER: After that time I'll give the panelists, if they wish, a moment or two to briefly respond to anything they hear. Following that, we'll have some question time here on the panel. I'll direct some questions to our all-star panelists, and following that we will open it up to the audience for questions.

So as we go along, if you have any kind of a question that comes to mind, please hang onto it and we'll hopefully get to you. For our folks in TV-land, we don't have any operators standing by to take your questions. But for those who are following on Twitter, we have a Twitter handle that is #FSFConf10. And that is active as we speak.

So for opening remarks, I will first start with James Assey. Why don't you go ahead, James.

MR. ASSEY: The curse of the A.

(Laughter.)

MR. COOPER: Actually, it's because you're

closest to me.

MR. ASSEY: Okay. I'll sit over there next time. Thank you, Seth. Thank you, Randy. It's a pleasure to be back here with everyone, and I extend Michael's apologies. I know he would have loved to have been here today to talk to you.

I think the topic that at least we're going to start on was focusing on connecting America and closing the digital divide. And let me briefly start where I always like to start when we discuss how we fill in the gaps and the holes that we have, and that is to really take tremendous stock of what we've seen over the last decade, decade and a half, two decades.

With respect to the cable industry we -- and certainly we're not alone -- through a lot of private capital invested and a lot of industry, we've built out networks that can provide access to 94 percent of America's households. That's not an insubstantial accomplishment, particularly when you consider the demands that consumers put on Internet networks continue to grow by leaps and bounds year after year after year.

That's also not to diminish the importance of

closing that last gap, that 6 percent who can't yet get access to broadband, or even closing the adoption gap of those people who could get it but haven't yet joined the rest of society in using the Internet as fully as they should.

You've already heard this morning from Assistant Secretary Redl about some new developments in Congress. There is certainly a lot of focus on what we can do to close the gap.

I think one of the things or one of the overlays that we put on any type of strategy is to really recognize technology neutrality and the need to design policies that reflect on and respect the fact that we have a multiplicity of different broadband platforms available to us.

Who would have thought that cable technology has evolved to where it is today, that wireless technology has evolved to where it is today, that satellite technology continues to evolve? And there really is no one-size-fits-all in a country that is as diverse as the United States, with the different types of geographical challenges we have in a country this large.

We have to recognize that as we develop policies, we need to come up with ones that are focused on the multiplicity of pathways to the consumer to provide them with Internet service.

Another thing that we have hopefully learned from past mistakes, when we focus on the public subsidy portion of connecting America, is to really focus attention on the unserved parts of America, those places that don't have broadband, to make sure that the scarce resources that we have available are not going to basically layer over places we already have built broadband through private capital.

I'm encouraged by recent language that was in the Omnibus Appropriations bill with respect to the newly created RUS pilot program that is really aimed at ensuring that the dollars go to where they're needed so that we can assess whether these programs are actually working or not and hopefully make that hole smaller and smaller.

And similarly, when it comes to regulatory reform, we all acknowledge the fact that the more friction we can take out of the system, the better, because it will enable private capital to go further in building and

extending networks.

We just need to be cognizant of the fact that we do have different technology platforms, and policy really needs to be built so that it deals even-handedly with all the different multiplicity of infrastructures we have out there.

So that's the writ large approach that I think we need to continue to focus on, and I think recent signs are encouraging.

MR. COOPER: All right. Thank you, James.

We'll go on to John Jones at CenturyLink.

MR. JONES: Thank you very much. I appreciate the opportunity to be here today. It's a timely and good topic for us to cover in light of all the industry convergence out there, and also what seems to be somewhat of a renewed focus on broadband speeds and availability out in the marketplace.

Many of you know the history of CenturyLink, so I can talk from a lot of different perspectives, as we've gone through several iterations as a company, including a small rural telephone company and a broadband provider in some of the more rural markets in the country, and now

with the acquisition of Level 3, a major Internet backbone provider globally. So I'll try to weave all that together. I've got probably more topics than I have time.

But I thought it would be good to first acknowledge what's going on in the industry, and that is networks are actually combining now to become a hybrid of both fiber and spectrum. Most networks are.

And so what that means is that where focus needs to be put, in terms of enablement, is on spectrum and fiber, and both are expensive. Both have their own challenges for deployment. But when combined, they do a great job of building advanced networks and providing advanced services for others.

The real issue is this question: Is spectrum a substitute or is 5G a substitute for fiber? When you combine the two, they really need each other to be successful. So those two combined will begin the enablement process.

And by the nature of the technology of 5G, if we have to build fiber closer, especially in rural markets, to get the 5G out there, the fiber is going to be a major enabler of 5G going forward in most of the markets out

there.

One of the questions we have to ask ourselves as primarily a rural provider is: What is the future of rural America? And before, when we were a much smaller company, we had reached about a mid-90 to low-90 percent threshold of enablement in some really small markets, and that was our strong suit.

A few acquisitions later, that percentage dropped significantly with the acquisition of Embarq and also Qwest. But we still have been a leading provider of broadband in those markets.

And our view, at least from our network perspective, is that any market that had a reasonable hint of profitability or an economic basis to deploy, we pretty much have done those.

My point is that what's left to deploy to are going to be the most challenging markets, regardless of platform. The cost is going to be high and the challenges are going to be great.

And so we're looking for ways to get there. And I think what the White House has done, Congress has done, and the FCC has done, in terms of of providing additional

funding for those markets is very positive, and we appreciate the focus and renewed interest there.

But despite the large amounts of money that have been bandied about in terms of providing for those services in the funding, I think we in this room all know that it's not going to be enough money to do the total job that people are looking to have take place. So that's one issue.

The other is I had the pleasure of serving on Jonathan Adelstein's BDAC subcommittee on barriers. And that committee did a great job of coming together and identifying and coming to agreement on what the barriers to entries were.

A lot of it dealt with federal lands and permitting. Anything that is done there will actually speed broadband to market. It does very little to address the cost issues. But it's a great movement forward.

One thing that our company is looking for is hybrid solutions for the last mile. And we're at a point where, in the big square states like Wyoming or the Dakotas, those ranchers and others are very difficult even for us to reach. Some of us even have trouble with

providing voice out there due to obsolete and old networks.

Hybrid solutions are looking more and more appealing to our company. And if you look at what satellite has done recently, their speeds are much better, their affordability is getting better, and the latency is less.

So when you look at that and the partnerships there that are possible, a solution is for providers to come together in meaningful partnerships to see what those solutions are.

And then fixed wireless is another opportunity, and that is where 5G comes in again. We're looking also at ways we can not only handle backhaul for 5G, but also provide fixed wireless solutions in those markets.

The last thing I want to touch on is consumer demand. We're talking a lot about providers and networks, but consumers are a big factor for us. We're in an environment where we're chasing increased speed demands, and we've all been chasing speed for a long time.

But we're also facing a technology-agnostic, fairly sophisticated consumer element now that maybe

wasn't here a few years ago. I don't think they really care if it's WiFi or small cell or large cell or wireline.

What they're really looking for is a positive Internet experience at the end of the day. And that's our job to provide that. That also goes into the heart of network security, privacy, and other issues that they want us to provide.

This is where I will touch on the open Internet. We see, from an enterprise standpoint and a consumer standpoint, that some of the more volatile and emotional terms out there dealing with net neutrality, such as "throttling" and "prioritization," actually will become increasingly more of a customer demand issue as they evolve and consumers keep telling us more and more of what they need out of the network. Our job is to respond to that demand.

And one thing that Chairman Pai's order does do, is it does allow providers like us the flexibility to respond without fear of enforcement action or anything else that's out there that was in the 2015 order.

So from a standpoint of customer choice and the flexibility of providers to address that choice, we think

the order goes a long way in providing some stability and predictability for that network experience.

MR. COOPER: Thank you, John.

Tom Power, CTIA.

MR. POWER: Thank you, Seth, and thank you for having me here today. I don't think it will shock anyone in the room that the wireless industry is focused primarily on 5G these days. We see it as potentially transformative for the wireless experience across industries and across society, and that's because of what 5G can deliver.

It's capable of a hundred times the bandwidth of existing wireless technologies. We're going to connect millions more devices. And one of the most significant factors about 5G is the really low latency, which is basically the speed at which bits can hop from one point to the next. And that enables applications that are real-time or near real-time and need to be real-time in order to be useful.

So we're going to see a huge change in healthcare and transportation, and we can just go across the board when it comes to different industries. This ripple effect

will have a huge effect on the economy. We expect to see $500 billion in contribution to GDP. That's according to a report by Accenture that we commissioned.

And that's going to be supported by 3 million new jobs, and the wireless carriers alone are expected to contribute $275 billion in capital expenditures. That's just the carriers. But the point is, it's much broader than the carriers or even what we think of as the wireless industry narrowly. It is throughout the economy.

This is something that we've gotten pretty good at in this country in terms of wireless. The U.S. has really been a leader going back decades. The cell phone was invented here. The smartphone was invented here. American companies dominate the market for operating systems, the engine inside your smartphones.

You go to the app stores. Those are documented by American innovations. We've built out 4G across this country, racing past most other countries. And we see much greater demand and usage of 4G in this country per capita than we see in most other countries.

We've now reached about 98 percent of the country with 4G, and the vast majority of those people have access

to at least three carriers. So we have to keep that momentum going. Other countries see what we're doing; they want to rival us or eclipse us when it comes to 5G. We're seeing trials in cities all over the world, just as we're seeing 5G trials in cities all over the country.

So it's really important that we keep the success story alive in the U.S. And for the wireless industry, there are two pillars we build that on. One is spectrum, the airwaves over which the data travels. And one is infrastructure, in some cases literally pillars. Where do we install and how do we install the small cells that will carry all this data, and how do we do it efficiently? We've heard both Chairman Pai and Administrator Redl talk a bit about that.

For us, on spectrum, we've seen some good momentum. Just last week, Congress essentially reconfirmed the FCC's authority to move forward with spectrum auctions. You heard Chairman Pai this morning talk about two of the higher bands, spectrum bands, that he wants to see go to auction starting later this year, which is great.

We need to keep that going with other bands that

the FCC has identified for auction. We need to get those auctions scheduled as well. And it's at the high band. It's the mid band. You heard the discussion in the 3.4 to 4.2 gigahertz range.

That's really important spectrum internationally. Those bands are getting a lot of attention, and it's important that we harmonize as much as we can around the world. That helps with scale. That helps the people making the devices and making the chips reduce their cost, which means you can have faster and more efficient deployment. So we're looking for more activity there on the spectrum front.

On the siting front, we heard earlier from Chairman Pai and Administrator Redl on action the FCC took last week on siting and streamlining the siting process. Every time you want to install an antenna, there is the overlay of regulation at the federal level, the state level, and the local level in terms of getting the siting and getting the approvals you need for that.

The challenge has been that, as Chairman Pai said, a lot of those rules were written in the wireless context when we thought of big towers, 200-foot towers and

antennas, big antennas, and the associated equipment that went along with that. They weren't written to think of small cells and the much smaller associated equipment that comes with that.

So last week the FCC took a big step forward in streamlining the review process at the federal level, especially for small cells. We've been working at the state and local level to accelerate the process there because, obviously, local governments will always have a role to play here when it comes to siting, and it's important that we respect that role.

They have costs that they incur, and in terms of reimbursing those costs, that's a fair ask of the industry. But we need more uniformity and we need to make sure that the delays that we have seen in the siting process can be eliminated.

We need to make sure that the costs that municipalities do impose in terms of overseeing all this are not disproportionate in comparison to the costs that the municipalities actually incur.

So Accenture has estimated, by the way, that we're going to need about 800,000 small cells by 2026. So

the importance of getting infrastructure right really can't be overstated. So I would say siting and spectrum are the two things you're going to hear from the wireless industry for the foreseeable future.

MR. COOPER: Thank you, Tom.

And now, Dr. Nicol Turner-Lee.

MS. TURNER-LEE: All right. Last but certainly not least.

(Laughter.)

MS. TURNER-LEE: So I want to thank Randy for having me here. I want to thank all of you, my distinguished panelists, for involving me in this conversation. Glad to be up here as a friend and person who's spoken at Free State Foundation's events.

So I'm going to actually talk a little bit about people and what the conversation is about in terms of connecting America and closing the digital divide, just my perspective of what we look at when we're closing the digital divide.

What we know today is that Internet use has rapidly increased. That's a fact. Many of us in this room, and who were in this debate 10 years ago, remember

the time when we were in single digit broadband adoption and penetration. And as James said, we're actually seeing more and more people getting online because the infrastructure is becoming more readily available.

Out of that positive trajectory, however, when we look at the digital divide, there's still about 11 percent of Americans who do not have access. They tend to be older Americans.

A Pew report said 34 percent of people over the age of 65 do not have Internet access. They tend to have less than a high school diploma at 35 percent. They are rural. As we all have come to settle on that fact, Pew recently reported again in March about 22 percent of people who are not Internet adopters are rural residents and they're poor. That's 19 percent.

Yet despite all of these obstacles, and many of you have heard me say this, they are still Americans and they still deserve to be connected in a way that is meaningful or they risk the chance of becoming digitally invisible. And for those of us that have been in this debate, that invisibility has consequences over the long run if we do not get this right.

Many of you know that I'm a sociologist. I'm a big fan of Michael Harrington's book, "The Other America." When he talks about the war on poverty, he stated that we in the U.S. had understated the amount of people that were actually disconnected from economic mainstream institutions. I would argue today, and I'll be arguing this in a book that I will have coming out at Brookings, that we still have that same problem when we look at digital disconnectedness.

So in response to what this panel is about, what I'd like to keep pressing upon people as we move towards a more ubiquitous access and more ubiquitous infrastructure is that the cost of not being online is even greater today than it's ever been before.

There's a cost to digital exclusion. If you close your eyes and you imagine yourself without your device in your pocket, without your ability to actually engage in various functions, you would feel disadvantaged just like the 11 percent of non-Internet users who feel that way today.

So what does that mean? And I'll just leave us with a couple of points because the panelists, I think,

adequately picked up and sufficiently picked up on infrastructure.

I'd like to say this, and also couch my remarks in this context for those of you who have been listening to me lately, that the digital divide is no longer binary. So it's not an issue of the haves and have nots. And my last point will actually suggest that.

So let me first say that I think it is important to accelerate broadband access to the underserved whether it is through what Tom just talked about, the acceleration of 5G technologies, which we know will bolster the capacity of people to get things done in a meaningful way. That's obviously going to require much more work in small cell deployment, spectrum management, et cetera.

But I also think that we can't count out the ability of fixed wireline to do the same job. We've got to get Internet access into communities in any way possible. So I don't see us, in the marketplace, picking winners and losers.

I honestly see us trying to figure out ways that we can bolster and accelerate access where people live -- urban, suburban, rural. And I think most of the panelists

have suggested that it's not a one-size-fits-all solution.

I also think that it's important that we call attention to the fact that the Lifeline program cannot be gutted. The Commission right now is working under the guise of where there is some sort of time stop when it comes to Lifeline.

You go back to those 11 percent of people who are not online. What it means to be low income in this country is something that we all should not assume to actually understand, nor should we assume that we should place barriers on people's ability to get access to opportunity.

Streamlining, cutting the Lifeline program, and imposing unnecessary caps will have a detrimental effect on closing the digital divide, especially if the program starts with the assumption that people are trying to outsmart the benefit.

So I share that in my report at Brookings, in looking at this issue and what that means for low income Americans who are becoming rapidly digitally marginalized.

Finally, I'll just say this. To close the digital divide, we have to remember that today's

technology is not tomorrow's solution.

And we've got to come up with regulatory certainty that adopts itself to decisions around investment expansion, good public policy that supports, what Tom said, spectrum allocation, while at the same time recognizing that the Internet of today is not going to be what we regulate tomorrow.

Artificial intelligence, machine learning, algorithms, and other technologies will become the next driver towards why America's not fully connected if we don't get this right. And so I say that because I think that regulatory certainty plays a lot into the current debates that we're having over picking winners and losers on the Internet.

I say publicly that we probably need to move away from frameworks that restrict us around 1934 regulations and move towards conversations and debates that allow for the full utilization and effective utilization of the Internet.

My final remark: What would precision medicine look like in 10 years if we had regulatory policy that did not adapt to what someone already said, consumer demand?

How would artificial intelligence help young people become educated if we actually regulated the Internet the same way that we regulated the telegraph and the telephone?

So I put that out there in terms of this conversation of connecting America and closing the digital divide. It's more than just infrastructure. It is not a one-size-fits-all solution. It's actually a comprehensive approach to how we want to ensure that more people get access to the benefits of being online.

MR. COOPER: Thank you, Nicol.

Tom, if I could turn back to you on the issue of infrastructure again. What can the 115th Congress do going forward? You mentioned reauthorization of the FCC. But what can they do on the issue of infrastructure in making 5G infrastructure less costly? What could speed up and accelerate the process? What legislation might be the most promising vehicles right now?

MR. POWER: There are actually a number of efforts pending on the Hill, and bipartisan efforts, I should say. This is one area where folks on both sides of the aisle get the big picture.

So there are a number of bills I could choose from, if I had to pick among my children, and I'm at the risk of offending different sponsors of different bills who hopefully are not watching C-SPAN too this morning. I think the efforts that Senators Thune and Schatz have undertaken on infrastructure siting is probably the most effective vehicle that I've seen right now.

It would do a couple things in terms of making more uniform the siting rules across the country so that when you apply to site an antenna or a tower in a public right-of-way, you know what the rules are. It would put timelines, deadlines, on local governments to act on those siting requests, with the length of time depending on the nature of the installation.

It would also ensure that the localities are paid the costs that they incur in overseeing this process. Those costs would have to be disclosed publicly. And it would have to be neutral so that you don't have different players paying different costs for essentially getting the same rights of access. So I would say the Thune-Schatz effort is one we're strongly behind.

MR. COOPER: Okay. Nicol, if I could turn to

you, I believe that earlier this month you spoke to a group regarding 5G cell deployment and engaging with local stakeholders. If you could just give a bigger picture or round out that aspect of 5G deployment. Could you do so?

MS. TURNER-LEE: Yes. I've spoken on several panels around 5G. I do believe in the power of 5G. I think 5G is actually going to accelerate the type of effective utilization that we want to see from particularly the groups that I'm interested in, low-income and historically underserved communities.

The ability to do, as I mentioned before, more remote medicine, better and improved educational opportunities among young people, it's immeasurable. I have told state legislators, and I'll continue to say this: the train has already left the station when it comes to actually rolling out 5G within communities.

You don't want to be that city that's not really working to get it in your community. I tell people, I live in Alexandria. I'd hate to go to Arlington and not be able to access 5G just by crossing over into a different city line.

And so I think as we go forward, what we've urged

people, what I've urged in my conversations with various groups, is let's embrace the process and figure out how to work together on this and collaborate.

I built, and I have to admit this because I've been saying it all across town, the first small cell network, Tom, when I was in Chicago working for One Economy. We used duct tape and delinked routers. It was a very hard issue to solve when you try to propagate against concrete buildings in the West Side of Chicago.

So I get it with regards to technical architecture, and it will take a team of people working together to make sure that we can really roll it out at a pace that is equal, seamless, and allows people that opportunity. We can't wait.

Low-income people in particular over-index on the use of their smartphones. Do we want them at a rate where kids are trying to get homework via 3G speeds? I don't think so. And so I think we've got to really figure out, with local legislators, how do we make the process friendly enough where there's cooperation and potential collaboration?

I think we're starting to see that. A recent

panel that we held with Commissioner Carr, in talking about the exemptions of environmental remediation reviews, as well as historic landmarks, there were legislators or city representatives in that convening. And I could tell you, the thing that got them the most excited about it was workforce and the ability to engage and put their people to work as well.

MR. COOPER: Okay. James, do you see anything that Congress can do going forward, the 115th Congress, in terms of wireline or cable infrastructure that's going to be necessary for gigabit fiber, and even necessary for the backhaul for 5G. Do you see any promising vehicles on that front?

MR. ASSEY: Well, I take some encouragement from what they've just recently done. I know a lot of this discussion focuses on 5G, but I don't want us to forget about other technologies. I think the point that John made initially is right, which is, all of these networks are going to start looking a lot like everybody else's.

We're all going to be using a mix of technology, whether that's EPON or DOCSIS or WiFi or 5G. Consumers will make the choices based upon the services they want,

and infrastructure providers will provide the flavors of technology that people want. And consumers, candidly, are pretty indifferent to the type of technology. They just want the thing they want to get to work.

One of the things, I think, that was set up in the legislation recently passed is Congress's recognition that we do need a balanced approach when it comes to spectrum, both with respect to licensing of the spectrum that we make available to meet the needs of 5G, but also to meet the needs of WiFi.

When we consider all of these devices that we have that are connecting wirelessly, the fact that 80 percent of that traffic is going over WiFi, that's a pretty strong amount of work. And that workload is only going to increase over time, as it will for licensed wireless as well.

So I say that not to really try and argue that this is an either/or because it's not. It's a both type of approach. And I think the problem, as I think we all know, with spectrum is you can't turn on a dime. You have to essentially go through a process of planning. You have to deal with incumbent users as you find them, and try to

plan out a long-range strategy over time.

So I think it's critically important that NTIA and other parts of the federal government really take that long-term view and really put out our national plan with respect to both licensed wireless and unlicensed wireless.

As far as legislatively, things that they can do, I think obviously, with the amount of money that's now been put out, that is really a down payment, as John suggests. It is going the places where it is currently uneconomic to serve. It's going to take significant resources to get broadband to them.

I think Congress will continue to play an important role in oversight, making sure that the funds that it provides is used for its intended purpose.

If we want to look at places for us to re-look at broadband policy, one place that might be fertile territory would be the rules with respect to pole attachments, both to speed up the process by which there's an orderly effort to add new lines to poles, and also maybe to deal with something that Congress didn't deal with back in 1996 when it exempted municipal and co-op poles from the federal scheme that we have for poles. So

I think those would be two places to start.

MR. COOPER: Okay. Sticking with, for a minute, the issue of spectrum and licensed versus unlicensed, what kind of rules of thumb or principles do you take in approaching them? How do we decide what kind of spectrum bands get allocated to one kind of use or the other in terms of licensed or unlicensed?

MR. ASSEY: I think it really depends. It depends upon the propagation characteristics of the bands, who's in that band, what other uses are we going to have to contend with. The fact of the matter is, I think we all recognize that the consumer demand for connecting via the wide variety of devices that we increasingly have in our homes and on our person just continues to increase.

So in some sense, there is always going to be a desire for more spectrum. But there's no one size fits all. We need lower-band spectrum, mid-band spectrum, higher-band spectrum. We've seen the FCC do some very important things with respect to the millimeter wave bands for particular types of uses.

But it is going to be a constant challenge for us and for the regulatory agency to figure that out. But

ultimately, consumers will drive the demand for these services, and hopefully that will give us some sense of where we need to find space to allow things like gigabit WiFi to grow.

MR. COOPER: Does anyone have anything they want to add or respond to that? Tom?

MR. POWER: I would agree with a lot of what James has said. I think we need more WiFi,both unlicensed and licensed. They both add considerable value across the board. Looking around this room, I can tell you the WiFi is pretty good or people are praying a lot. But --

(Laughter.)

MR. POWER: Maybe a little.

MR. ASSEY: 4G.

MR. POWER: Maybe some of both. But the FCC has, I think, over the years taken a number of steps to try to suss this out. And it's a bit of a challenge for the regulator because they're trying to make predictions based on where they think technology is going to go, and where they think consumer demand is going to go, and where they think product development's going to go -- all of which you want to be in the hands of the consumer and the

entrepreneurs and the innovators on the private side.

On the other hand, you do want the government thinking ahead. There's that quote that's always attributed to Wayne Gretzky, that you want to skate to where the puck is going to be, not where it is. But the FCC isn't playing hockey; the FCC's the referee.

So it's always a challenge. But we've certainly learned a lot of things about where at least the sweet spots for some of these services are. For unlicensed, clearly, when you're at home, you're in the hotel, you're at the office, in an environment like this, where you can more control a lot of the use that's going on.

One of the characteristics of unlicensed spectrum is you're not protected from interference from other users of the spectrum. So you do risk challenges there as you put more and more demand.

On the other hand, for licensed spectrum, certainly for mobility that's a big plus. And the more uncontrolled the environment when you're out in the public and where demand can spike up and down, spectrum is a little bit better suited for licensed because the carrier can exclude others from the band. They do have exclusive

use there and therefore can control the quality of service that's being offered. And that can be very important, especially as we move into 5G.

But I think the FCC gets great credit for the way they've managed this over the years. And as James said, it'll just keep growing on both sides of it and will just both hopefully continue to develop in a way that meets consumers' demand.

MS. TURNER-LEE: Can I just say one quick thing, too, Seth? I think on the unlicensed side, at least, for the topic of this panel, that it's also important to leverage the unlicensed spectrum for pilots.

We've had conversations over the years with the FCC on where are there appropriate contexts to actually play around with unlicensed spectrum, to do experimentation that may actually lend itself to closing the digital divide in unique ways that we may not identify through large-scale rollouts.

MR. COOPER: All right. Let's move on to universal service really quickly. And John, maybe I'll turn to you first. We've got the Mobility Phase II auction. We've got the Connect America Fund Phase II

auctions. We have some of those things coming up for this year.

Are we all set going forward? Are there rule changes that need to be made, or are you confident that things going forward can help reach some of these rural areas through how that's set up?

MR. JONES: I'll say that I think the FCC does a very good job with auctions, the auction process. The way we're looking at the auctions is from a provider standpoint, is that we really have limited opportunity from a CenturyLink standpoint. And we declined, I think, two states basically during the CAF-II process.

And my understanding of it is that that same funding will just track in the auction. So it's still the same amount of funding. So I'm not sure how much relief it's actually going to give a bidder. One of them is Wyoming; the other is in Mississippi.

So I'm not sure how much that is going to help, but I think they're both good gap fillers from the standpoint of seeing an incremental need and addressing it. But there's still a lot more to do. And we're also interested to see if there'll be a CAF-III and other

mechanisms out there for us.

MR. COOPER: Very quickly, James, going forward, you mentioned the Rural Utility Service and having encouraging language in the omnibus legislation about avoiding overlays. That's government funding networks to be built on top of places where consumers are already served.

Does that continue to be an issue on universal service in these things going forward? Do you find the same kind of encouragement on that front?

MR. ASSEY: We're encouraged by the direction that has been taken in CAF. Obviously there are probably things around the edges we would quibble with. But it seems like we are finally focused on really judging the effectiveness of the funds that we are providing based upon how many new homes are we signing up.

And as for that type of accountability, I won't say it's been a sea change. But it's been an encouraging development. And we see it replicated in many states, which are really following a more focused approach to funding that they may provide to allow existing carriers to extend lines to communities that don't have access to

broadband, and really giving us a new measuring stick for how we are actually accomplishing the task we set out to do.

There's obviously lots of historical evidence where we've seen that funds have really not been used for their intended purpose and really gone to places where broadband already exists.

So I view the changes that have been made at the FCC to be really encouraging. I view the models that states are following to focus line extensions, and really get funding targeted to unserved areas to be a follow-on to that; and a further follow-on being Congress's insistence that when we are going to spend the public's money through this new pilot program, that we ensure that at least 90 percent of the funding for any grant go to supply broadband to households that are unserved.

MR. COOPER: Sticking with the universal service but moving it over back to Lifeline, Nicol, in your remarks you talked about the proposal the FCC has of having a self-enforcing budget or a hard cap. And that same proposal would limit Lifeline subsidiary support to facilities-based providers.

So what's your position regarding this aspect of the proposal, to limit Lifeline support to facilities-based eligible carriers?

MS. TURNER-LEE: I'll summarize it.

MR. COOPER: Sure.

MS. TURNER-LEE: As my mama would say, if it wasn't broken, don't fix it or try to fix it. It's challenging because I think some of the assumptions that are in the Lifeline proposal right now, particularly the limitation to facilities-based providers, regresses on some of the work that was done over the last couple years to ensure more competition in the marketplace.

So you're now going to have a situation where we may have constrained competition and a hard cap that presupposes some hypotheticals around use, where in the beginning of this debate on Lifeline reform a couple years ago, the conversation was the low use of Lifeline in terms of capture rate versus the high use.

So I think it's really important to sit back and look at what are the implications. I would argue that some of the Lifeline reforms are still driven by a partisanship approach to this waste, fraud, and abuse,

which is not true. Prior to the GAO report, there was actually conversation about the waste, fraud, and abuse being reduced, and so the GAO report was based on old data.

I also think that it's important that we allow the USAC to put in the national verifier to reduce some of the redundancies. I think until you actually do some of that stuff, it's very hard to go back in a program that is the only potential lever for people to get online.

And we don't want to find ourselves in a situation, particularly when we talk about closing the digital divide. The digital divide, yes, it is about deployment, my friends. It is about infrastructure. But it's about people. People stand at the heart of what we're trying to solve.

And it's just critically important that the program and Congress reevaluate how we're approaching this program. The FCC is not a social service agency. The FCC is an enabler to get people access. The prior proposal had areas in there that were going to facilitate the ability of people to have social mobility by leveraging the benefit. We shouldn't make assumptions, as I

said earlier, about how the poor live in this world when we're not poor.

And so I would say, on the hard cap and others, I'm just a big, big proponent of people. And I think it's important that we really look at some of the subliminal messages that are within that order that will potentially restrict the uptake and affordability to people in urban communities.

It will have an effect on people who live in rural communities, but more so urban, who happen to also be predominately people of color, poor, disabled, and isolated.

So I just think it's something that we have to continue to discuss. But I would really caution us to put in some numbers, hypothetical numbers, that may not actually be the measure of success for that program.

MR. COOPER: Well, Nicol, I'll stick with you for one more minute. So if we were to install at Brookings a Bat phone to Chairman Pai's office and you're to address the issues of digital exclusion and disconnectedness, I would imagine you would have touched on this.

We've touched on the spectrum. We've touched on

the Lifeline. Is there anything else that you would recommend here to address digital exclusion now that we're a year into his chairmanship?

MS. TURNER-LEE: Yes. I know. I've participated on BDAC, in a marginal way but I participated, not on the main committee. But I think the Chairman is moving in the right direction in terms of, again, putting the gap stops in place where we actually inhibit, we stop, those barriers that have traditionally kept people offline.

People have more choices. James is right. People can get online the way that they want to, how they want to, in more meaningful ways than they could before. I tell my kids, I can't beat you at an interactive game, but I can certainly get you in Pac-Man on Atari. Right? Because technology has changed.

However, we're in a space where disruption is going to upset the applecart. So the regulatory conditions and criteria that we talk about today, when you look at machine learning, when you look at algorithmic bias, when you look at those areas, the cost of digital exclusion is going to come through big data analytics and other things.

And so we have to be careful as we balance this conversation. The digital economy and the sharing economy are making up large proportions of our GDP. The future of work is dependent on the ability of people to be involved. The digital divide amplifies barriers when you live in communities where you don't have access to interface with the new tools of technology.

You want to talk about a cost to America to actually not build 5G, not have ubiquitous wireline access, not be able to get it to rural communities. The cost to all of us will certainly be that they will be left behind.

And I think again, Seth, I left you all. I'm like a marathon runner that's actually up above in that fast-forward thinking piece that I think Randy is starting to go to, all of us are starting to go to. Regulation has to catch up with where the disruption is actually taking us versus us actually sitting back and trying to figure it out. The pipe has to be bigger because the needs have become bigger.

MR. COOPER: Dealing with the subject of moving on in terms of regulation, John, CenturyLink and through

earlier incarnations of CenturyTel and Qwest and all those companies, they have a real long track history in dealing with Section 10 forbearance to try and get rid of legacy telephone regulations that still apply, that are still on the books. And we also this year will have a Section 11 biennial review, I presume.

Do you see any candidates, in terms of old legacy rules, that could still be taken off the books, or at least modified or reduced within the next year? Is there anything that's a real contender that's left?

MR. JONES: Yes. I'll stay at a very high level. But I think it's really fairly simple from our standpoint. If you look at the rules we're dealing with forbearing from, ILECs have lost 70 percent of their market share across the board from a voice and broadband standpoint. And we still have rules that are pretty far back in time.

So any forbearance from rules that keep James's point about how the industry is converging in so many ways, and just something I touched on earlier, so any rules that can be forborne from that keep our segment of the industry basically still hamstrung in a wide-open field running environment of competition, would be, at the

highest level, what we would ask for.

MR. COOPER: Okay. Terrific. I want to touch on the issue of net neutrality really quickly, an issue of legislation. Could you describe, John, what would be the essential elements of a legislative compromise on this issue? What would be the bare minimum of what would need to be in there?

MR. JONES: Yes. I'll go back, even, to the question you asked James. I think that a piece of legislation setting the net neutrality rules in motion with a lot of clarity would be a good piece of legislation to remove some of the barriers and uncertainty that are out there today. So that's just one piece of legislation.

I think everybody understands that blocking is just something that needs to not happen. And so any legislation would probably deal with blocking. I do still think that Congress will not be able to keep up with evolving consumer issues and demand, and so there's got to be a certain degree of latitude and flexibility for providers to continue to meet evolving needs.

But the blocking is one thing. I don't really know how much more could be done around that. But I think

the main thing is that there will be clarity among the rules.

There will likely have to be some revisiting of interconnection issues because we're still working under the Telecom Act interconnection rules, and now we're in a world of peering. And unfortunately, you get back to compensation for use of the network, which is an age-old debate, and so there will have to be some clarity around that.

The last thing, probably, would be some form of regulatory backstop. The Commission did not really deal with issues that cannot be negotiated fully between carriers, and there is probably going to be some of that out there as we continue to move into that environment.

And so I think a limited regulatory backstop where at least you could resolve some issues at the federal level would be something that everyone would benefit from.

MR. COOPER: Tom, do you have anything to add on that in terms of a net neutrality legislative compromise?

MR. POWER: Just the need for uniformity. It's a challenge to try to do this on a state-by-state basis.

The problem is we have a hard time agreeing on the details of what a uniform net neutrality regime would look like. And I don't think we're going to see it this year.

MR. COOPER: Well, there's some high-caliber legal firepower on this panel, including yourself, Tom, and James.

(Laughter.)

MR. COOPER: We've seen, at the state level, some net neutrality executive orders. We've seen some legislation. Will those succeed? What should be the response? What should be the next step in addressing these at the state level? James, I'd like to hear your thoughts.

MR. ASSEY: Look. I think it all fundamentally goes back to this is really not a question of ability. This is a question of will. And when we look at the online ecosystem writ large, of which ISPs are certainly a part of but not the only part of, I think we have the ability to set consistent standards and norms of behavior that consumers want. And short of going on the rooftops and shouting from the top of our lungs that the ISP industry is interested in resolving this issue in a

context that will promote continued investment in networks that we all, I think, agree need to continue to grow and thrive, it becomes a vexing problem.

It's like you're searching for a dance partner here. But the fact of the matter is, to your question, it makes no sense to have one state have one interpretation of a particular rule and another state have a different interpretation of a particular rule because no ISP builds its network that way.

So to the extent we want to have this conversation, we want to engage on it. We want to welcome rules of the road that will discipline not just ISPs but other online participants that might engage in practices that we would worry about as consumers. We ought to have that conversation, and we ought to have that conversation at the federal level.

And it's always darkest before the dawn. But I remain hopeful that at some point we will get around to realizing that this is a problem that is fixable and that we can fix it.

MS. TURNER-LEE: Seth, can I jump in?

MR. COOPER: Yes.

MS. TURNER-LEE: I'm not the lawyer, but I have watched this debate. And without taking a position on where it stands, I definitely think that Congress needs to pass legislation. I think Congress needs to come to the table and have a straightforward conversation on where do we go from here at this point?

Picking up on, again, some of the comments that I said earlier, what has affected my thinking about this is some of the caveats that we need to think of in that legislation. If we're talking about autonomous vehicles and other real-time applications, we may want to go through and really talk about what does that mean in terms of balancing public interests with innovation and some type of regulatory state.

I think James is also quite right that the Internet has transformed without a start and stop button. All of these industries are converging, in a way. We have to be sensitive to the fact that a conversation that started nearly a decade ago is not going to be relevant in the future if we do not figure out the intricacies of how the Internet actually works.

Consumers, as somebody said, are really telling

us how it works, but we're not paying attention to that. And I think that's going to be really important for us to move on to some of these other issues.

MR. COOPER: All right. Terrific. So we're going to open this up to the audience. We've got about five minutes for any questions. Is there anyone there who has questions? We have a microphone coming around, and I see Tom Tauke right there.

QUESTION: Good morning. Great panel. When Congress established FirstNet and provided spectrum and allocated funds, the expectation was that there would be some buildout. This would spur buildout in rural areas of wireless networks.

Now, several years later, is there any evidence that this is happening? Or do you see this as part of the solution to closing the gap in rural America?

MR. POWER: We need the AT&T representative up here.

(Laughter.)

MR. POWER: Stacy, you want to give that one a go? No. I'm not familiar with the details. That was, obviously, part of the goal to get the sharing of spectrum

between the public safety community and the private sector. AT&T is in the middle of that, built a network working closely with the folks in NTIA and in Commerce.

I think it's still a wait and see. Hopefully it can bring a lot of benefits because particularly in rural areas where the spectrum is probably going to be less needed on a day-to-day basis for the public safety community, there should be excess capacity there that could be made available for consumers and businesses in those areas.

MR. COOPER: All right. Do we have another question in the audience? I see Rick Cimerman over there.

QUESTION: Thanks. Hopefully we're allowed to ask the moderator a question. You asked about state preemption, and you have written about state preemption. So I'd be curious if you could tell the audience your view of whether these state net neutrality efforts will survive legal challenge.

MR. COOPER: Right. Well, they're all over the place.

(Laughter.)

MR. COOPER: All right. Tough panel. They're

all over the place, of course, with states. Some state's governors have signed executive orders saying their states won't do business with Internet service providers unless they agree to run their networks the same way that they would have under the FCC Title II rules that were repealed.

That narrow issue is one that I have written on in particular. Our conclusion, or at least my conclusion, is that these are highly problematic under the Supreme Court's market participant doctrine because broadband Internet access services are available to every customer.

They're usually a kind of click-wrapped or take it or leave it kind of deal, like I can go to one provider that serves my neighborhood, I can choose to sign up for their service, whatever speed tier or not; or I can go to whatever, the alternative, the competitor, and choose it or not. What's not something I get to do, is to tell my provider how to reengineer their networks in order to serve me.

And the Supreme Court has a jurisprudential doctrine that's very sensitive to the fact that, yes, states, state governments and local governments can act

like a participant in the market and buy or sell from whom they want to. But they have to act in a manner consistent with other participants in the market.

And so I think it certainly runs into difficulty that way. And there are a lot more wrinkles on this issue. We may be writing on them more. In particular, my colleague, Randy May, has written in one of his series on "Thinking Things Through," regarding some matters there, because the FCC does have a provision in the *Restoring Internet Freedom Order* that says that if any state or local government that seeks to, in essence, reinstitute the rules that are being repealed they will be preempted.

So I think there's a dormant commerce clause issue as well. That's more complex and kind of yucky, and I don't think about those things since law school days.

(Laughter.)

MR. COOPER: But I would actually consider that a very potent argument as well, that would recognize these services are inherently interstate. They don't respect state borders. The data flows around where it goes. They're not engineered to state lines.

So that's the moderator's answer. And since I'm

on the microphone, no one's going to be able to challenge me on that, partly because my boss is here to pull the plug on this all-star panel and transition us onto what's next.

(Laughter.)

MR. COOPER: So I want to thank everyone here today on the panel.

(Applause)

* * * * *