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NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
(NTIA)

U.S. DEPARTMENT OF COMMERCE

COMMERCE, SCIENCE, AND TRANSPORTATION

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EXECUTIVE SUMMARY

The National Telecommunications and Information Administration (NTIA) in the Department of Commerce is responsible for advising the President on telecommunications and information policy. NTIA's programs and policymaking focus on a broad range of issues that include spectrum management and availability, broadband connectivity, and the growth and stability of the Internet and the Internet-enabled economy.

NTIA manages federal government uses of spectrum and recommends policies to promote efficient use of spectrum. There are many competing uses of spectrum, both present and future, that must be balanced to ensure the Nation achieves the full public and private sector potential of this valuable government owned resource, ranging from national security and public safety to economic growth and scientific research. The tremendous growth in demand for wireless communications by consumers, businesses, and government agencies is one of the present challenges that requires innovative approaches to increase spectrum access for commercial and Federal Government users alike. NTIA evaluates present and future use of spectrum, promotes efficient and effective government use of spectrum, recommends reallocation for commercial use where possible, and encourages sharing between commercial and government users. These actions support the commercial sector's development of next-generation wireless services while also satisfying the congressionally mandated missions of all federal agencies.

Communications research also plays a critical role in identifying innovative approaches to increase spectrum access and sharing opportunities. NTIA's Institute for Telecommunication Sciences (ITS) provides important scientific research on spectrum capability, spectrum management approaches (*e.g.*, spectrum sharing) and spectrum-enabled technology development and testing for both federal agencies and private industry partners. NTIA has a statutory directive to further scientific and engineering knowledge related to telecommunications, particularly with respect to radio spectrum, and it is expanding collaborative research and development in advanced communications technologies to support commercial and government applications. NTIA's work advances research, development, testing, and evaluation to enhance wireless efficiencies.

High data-rate, or broadband, communications using both terrestrial and space services are integral in fueling a dynamic economy, driving commerce, advancing agriculture, enriching education, enhancing health care, and improving public safety. NTIA continues to address demand by state, local, and tribal governments for technical assistance and hands-on guidance in bringing broadband to American communities across the Nation. NTIA continues to respond to the need for technical services and broadband leadership efforts by partnering with unserved and underserved communities, so that they can attract new business investments and spur economic growth. NTIA's strategy capitalizes on strong relationships with broadband providers, state and local organizations, businesses, non-profit organizations, foundations, and other federal stakeholders.

In collaboration with other Commerce bureaus and Executive Branch agencies, NTIA develops and advocates for domestic and international policies that preserve the open Internet while advancing key U.S. interests. NTIA advances U.S. interests in Internet policy against the

backdrop of an ever-changing landscape of services, technologies, and increasingly global actors seeking to influence its future.   NTIA coordinates Executive Branch communications policy and represents the Administration's policy before independent agencies such as the Federal Communications Commission (FCC) and the Federal Trade Commission (FTC).

The Internet is the greatest engine of communications and commerce the world has ever known. This is an exciting time to lead NTIA, which plays a vital role in many important areas of telecommunications. Whether it is broadband deployment, the digital economy, or managing our government spectrum resources, NTIA is at the forefront of preserving and advancing our information economy.

Chairman Thune and Members of the Committee:

Thank you for this opportunity to testify on the activities of the Department of Commerce's National Telecommunications and Information Administration (NTIA). Today, I would like to describe NTIA's unique role in developing and advocating policy in the communications and information technology sectors.

Congress has tasked NTIA with a very broad range of policy responsibilities, including spectrum management, security, broadband deployment, Internet governance, and privacy. NTIA is the principal adviser to the President on telecommunications and information policy issues. It is responsible for developing and presenting the Executive Branch's position on communications and information issues before the Federal Communications Commission (FCC) and in other domestic and international forums. NTIA's goal is to assist the Administration and Secretary of Commerce Wilbur Ross in promoting the role of the Nation's telecommunications and information industries by creating more job opportunities, enhancing U.S. competitiveness in the global economy, and ensuring that all Americans benefit from the Digital Age.

This is an exciting time to lead NTIA, which plays a vital role in many important areas of telecommunications, including managing federal spectrum use, promoting investments in broadband infrastructure, and recommending policies that improve the digital economy.

Spectrum Management

Radio-frequency spectrum is a valuable, finite resource that is essential to carry out critical Federal Government functions (for example, in support of national security) and to foster broad-based economic growth across a number of commercial sectors. NTIA is charged with the efficient and effective use of the nation's spectrum.

A core component of NTIA's spectrum responsibilities is managing federal agencies' use of spectrum. This includes ensuring that spectrum is available to support proposed federal systems and then assigning specific frequencies for operational use. In this spectrum management role, NTIA works with federal agencies to coordinate their spectrum usage, improve the performance of their spectrum-dependent systems, and consider other means for increasing the efficient use of spectrum. Through its Office of Spectrum Management and its Institute for Telecommunication Sciences, NTIA uses advanced research, measurement, and assessment to expand access to spectrum for all uses, from mission-critical government operations to emerging space based services and next generation 5G commercial services. NTIA also works to develop novel spectrum sharing approaches. ITS works collaboratively with Commerce's National Institute of Standards and Technology (NIST) and the Department of Defense through the National Advanced Spectrum Coordination Test Network on many critical spectrum projects.

Working with the FCC and with other federal agencies, NTIA has made great progress over the last five years to make more spectrum available for flexible commercial use, including hundreds of megahertz of low and mid-band spectrum and about 13 gigahertz of spectrum in the millimeter wave range. From the great progress in transitioning the AWS-3 spectrum band post-auction, to the innovative approach for sharing the 3.5 GHz band between military radars and a

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new Citizens Broadband Radio Service (CBRS), to the untapped potential of the *Spectrum Frontiers* millimeter wave bands, we are in many ways in the midst of a spectrum access boom. We are acutely aware, however, that demand for additional spectrum will only increase in the years to come as commercial activity in space expands, the Internet of Things (IoT) proliferates, cities become smart cities, and cars become even more connected.

Over these next few years, one of the biggest challenges will be balancing the needs of an expanding commercial space sector, ensuring the availability of the spectrum we need to support competitive, ubiquitous, and secure 5G in America, and at the same time ensuring federal agencies can continue to perform their important missions for the American people. Finding additional spectrum to fuel the growth of advanced wireless is not a particularly pretty or elegant process. It involves a lot of hard work thinking through the second, third and even fourth-level effects of transitioning incumbents, or determining effective methods to share spectrum on a transitional or long-term basis. Much of the progress we have made is the result of relationships and trust developed within government and between government and industry. NTIA's spectrum team has spent years building those relationships, and I am fortunate to have such an amazing team working to ensure that the spectrum-evaluation processes continue to meet our country's needs.

One of the tools Congress wisely adopted in 2015, through the Spectrum Pipeline Act, is a change to how the Spectrum Relocation Fund may be utilized. Specifically, federal agencies can now make proposals and seek funding to study the potential of making specific government-used frequencies available for commercial use. This fills an important gap because previously funding was available to agencies only after a particular band was identified for auction. In short, we faced a chicken-and-egg problem. Already, studies are underway in two bands, 1300-1350 MHz and 1675-1680 MHz. Most recently, I was pleased to announce that, working with our Policy and Plans Steering Group—an interagency body that advises NTIA—the 3450-3550 MHz band will be the next band up for study of its potential to accommodate future commercial access. Although we are at a very preliminary stage with this band, it represents an exciting opportunity, in large part because of its adjacency to the 3.5 GHz CBRS band mentioned earlier.

Returning to 5G, last year the President made it clear that 5G network security is a critical element of our overall national security. With IoT and other connected devices, security—both in the device and in the network itself—will be important not only in ensuring U.S. leadership in 5G, but also in avoiding disruptions to our increasingly technology-driven economy. NTIA will continue to work with our colleagues across the Federal Government on an America First 5G strategy that address this important national interest.

NTIA also plays a key role in international spectrum policy, working with other federal agencies to prepare for key spectrum negotiations and standards-setting activities. This includes intergovernmental participation in the International Telecommunication Union (ITU), which will hold a World Radio-communication Conference (WRC) next year in Sharma el-Sheikh, Egypt.

WRC-19 will tee up important agenda items, including one addressing harmonization of spectrum in the millimeter wave bands for what the ITU calls "International Mobile Telecommunication (IMT)"—which we know as advanced mobile broadband, including 5G.

These bands are also of great value for communications satellite services that can serve rural and less developed areas of the world, often beyond the reach of traditional terrestrial infrastructure. Our approach will be to advocate for space and terrestrial services that most effectively meet the needs of consumers, wherever they may be.

WRC-19 will be vital in facilitating the global ecosystem for 5G services, development and roll-out, and NTIA is working now to promote outcomes that support U.S. industry's 5G development plans, on the ground and in space, as well as evolving global federal missions. WRC-19 also will review the operation of unlicensed radio local area networks—think Wi-Fi—in the 5 GHz band.

Additionally, WRC-19 will consider studies on agenda items in support of space science and meteorological satellites missions for monitoring the climate and weather forecasting. WRC-19 will have to decide on satellite regulatory issues concerning commercial NGSO "mega-constellations" that are capable of delivering broadband Internet from space. NTIA is working with the FCC, the commercial satellite operators and federal entities to ensure that satellite operators continue to have the regulatory certainty they need to provide reliable performance in a more congested and competitive global environment.

Cybersecurity and the Internet of Things (IoT)

Recognizing the vital importance of the Internet to U.S. innovation, prosperity, education, and civic and cultural life, the Department of Commerce has made it a top priority to encourage growth of the digital economy and ensure that the Internet remains an open platform for innovation.

Last May, the President issued Executive Order (E.O.) 13800 on Strengthening the Cybersecurity of Federal Networks and Critical Infrastructure. The E.O. sought to address many issues, including identifying international cybersecurity priorities, protecting our own systems and public data inside the Federal Government, and supporting the growth and sustainment of the Nation's cybersecurity workforce. The Department of Commerce played a significant role in developing several of the required reports. NTIA and NIST worked collaboratively on a report on promoting stakeholder action against botnets and other automated, distributed threats.

Botnet attacks can have large and damaging effects, and they put risks on the broader network at risk. Risks are only going to increase as connected devices continue to proliferate. Notably, this specific report was developed through an open and transparent process for the specific purpose of identifying stakeholder actions as opposed to government regulation.

The Departments of Commerce and Homeland Security spent a year collecting broad input from experts and stakeholders in the Federal Government, industry, academia and civil society. We held two public workshops, analyzed over a hundred responses to our requests for comments, and reviewed the Report to the President on Internet and Communications Resilience from the President's National Security Telecommunications Advisory Committee.

The report outlines a positive vision for the future, cemented by six principal themes and five complementary goals that would improve the resilience of the Internet ecosystem. For each goal, the report suggests supporting actions that can be taken by both government and the private sector.

To highlight some of the themes: The botnet threat has multiplied and now we have to address risks coming from a multitude of connected devices, not just computers. We know that these automated, distributed attacks are a global problem. Botnets can use compromised devices around the world to attack American targets. We cannot solve this problem alone. And no single sector can fix the problem in isolation—this is an ecosystem-wide challenge.

We also know that effective tools are available to help mitigate these threats, but they are not consistently used. In order to change this, we need more education and awareness, but we also need to promote market and policy incentives that drive developers to ensure that security is a key focus as they innovate and expand technologies like those that support the IoT.

I believe the greatest challenge for advancement in the IoT will be cybersecurity. While many Americans understand the idea that they need to do more to protect themselves when they are on their computers or smartphones, IoT presents different challenges. Many people do not think of their thermostats, lightbulbs, cars, or appliances as digital devices that may carry cybersecurity risks, but in the age of IoT, they can. If we want to promote innovation and growth, we must ensure that Americans can trust the IoT devices in their lives. NTIA is working across the Federal Government, with stakeholders both at home and internationally, to promote smart IoT policies that incorporate security and protect American consumers. One example of this work is close coordination with NIST's Cybersecurity for IoT Program.

NTIA's spectrum planning and management activities anticipate the continued growth of IoT, and its Institute for Telecommunication Sciences (ITS) has begun testing the possible effects of IoT on spectrum usage. NTIA has been actively engaged with international organizations on aspects of IoT and other related areas.

Other Commerce agencies are also working on these and related challenges. NIST supports the development and use of standards, guidelines, and related tools to advance the use of connected devices and to secure the environments in which they are deployed across industry sectors. Commerce's Economic Development Administration provides grants to communities around the country to build up their technology-focused innovation ecosystems in order to grow their local economies and create jobs. The U.S. Patent and Trademark Office (USPTO) continues to improve its patent process and focus on new technological domains, including IoT. USPTO also plays a key role in the alignment of intellectual property policies around the world, so that U.S. inventors of IoT technology can have access to the protections they need to continue innovating and selling their products and services everywhere. The International Trade Administration is an active promoter of IoT and Smart Cities on the international stage.

Across these and other initiatives, the Department of Commerce is able to provide important perspective and expertise on IoT. The Department has the statutory authority, expertise, and ongoing work streams in numerous areas that are critical to the development of IoT, including:

cybersecurity, privacy, cross-border data flows, spectrum, international trade, protection of intellectual property, standards policy, and Internet governance.

Late last year, stakeholders in one of NTIA's open multistakeholder processes came to agreement on documents focused on IoT security and patching, including one document on ways for manufacturers to better communicate to consumers about IoT devices' abilities to receive security updates. We continue to engage with the IoT and security communities to promote the principles and ideas within those documents.

This year, NTIA will be working on software component transparency. Most modern software is not written completely from scratch, but includes existing components, modules, and libraries from the open source and commercial software world, which can be challenging to track. The IoT compounds this phenomenon, as new organizations, enterprises and innovators take on the role of software developer to add "smart" features or connectivity to their products. The sheer quantity of software inputs means that some products ship with vulnerable or out-of-date components. We intend to convene a discussion between software vendors and the enterprise customer communities who use these products. The exact focus will be decided by participants, but stakeholders are expected to discuss topics such as incentives and barriers to adoption of software transparency practices, and how to effectively and securely share information between vendors and customers.

Internet Governance and Protecting Internet Freedom

NTIA is focused on protecting and promoting an open and interoperable Internet, advocating for the free flow of information, and strengthening the global marketplace for American digital products and services. NTIA participates in interagency efforts to advance these and related priorities at such global venues as the ITU, the Internet Governance Forum, the Asia-Pacific Economic Cooperation Organization, the Organization of American States, the Organization for Economic Cooperation and Development, the G7 and G20 forums, as well as through trade negotiations and bilateral dialogues.

In addition, NTIA is the Executive Branch agency responsible for policy issues related to the Internet's Domain Name System (DNS). NTIA oversees legal agreements related to the management of the .us and .edu top-level domain names. NTIA represents the U.S. Government in its interactions with the Internet Corporation for Assigned Names and Numbers (ICANN), the not-for-profit corporation that coordinates the DNS, including serving as the official U.S. representative to ICANN's Governmental Advisory Committee (GAC).

In fulfilling these responsibilities, NTIA has noticed several concerning developments that threaten progress on our international policy goals.

First, NTIA is disturbed by some governments' curtailment of freedoms of expression and association online. Tolerance of such behavior undermines fundamental democratic principles, respect for human rights, access to information and Internet freedom.

Second, NTIA is increasingly concerned by efforts of some countries to place the Internet under intergovernmental regulation at the ITU. One bulwark against such government activities is support for the multistakeholder model of Internet governance. The multistakeholder model ensures that no single stakeholder or group of stakeholders, including governments, can overly influence decisions made for the global Internet. In support of the U.S. commitment to the multistakeholder model, NTIA with its interagency partners is actively taking steps to defeat proposals that seek such regulation of the Internet at the 2018 ITU Plenipotentiary Conference, which will meet this fall in Dubai.

NTIA is also working with its interagency partners to modernize the ITU and to focus the organization on its important spectrum and satellite missions. To that end, NTIA fully supports the campaign of Doreen Bogdan-Martin as a candidate for Director of the ITU's Telecommunications Development Bureau. Doreen is an impressively qualified candidate whose vision for the ITU reflects her tenure in the U.S. government. She has our full support.

Third and finally, NTIA is concerned that the security and stability of the Internet is being inadvertently compromised by pressure to comply with the European Union's General Data Protection Regulation (GDPR). Over the last year, NTIA has been involved in discussions at ICANN regarding bringing the WHOIS service into compliance with Europe's new rules. In short, the WHOIS is a service that provides easily accessible information about the entities that purchase and manage domain names. This information is often the starting point for law enforcement agencies when investigating malicious online activity, and for private-sector and government actors seeking to protect critical systems from dangerous cyberattacks, which are growing more frequent all the time. WHOIS information is also valuable for combatting infringement and misuse of intellectual property, and for savvy consumers looking to ensure that the website they're visiting is legitimate.

In recent discussions regarding this necessary update to the WHOIS, a small subset of ICANN stakeholders has continued to incorrectly assert that ICANN must erect barriers to the quickly and easily accessible WHOIS information in order to achieve compliance with the GDPR. However, the fact remains that the text of the GDPR balances the interests of cybersecurity, law enforcement, and consumer protection, and many European officials have noted that limited changes to the WHOIS would be necessary to achieve GDPR compliance. NTIA continues to push for the preservation of the features that make the WHOIS service valuable to Internet stakeholders, including through its role in the GAC.

NTIA is also committed to advancing a proactive international agenda, which includes working with interagency and international partners to develop a common view on the technologies and trends that will shape the future Internet-enabled economy. By taking an affirmative and leading role on global Internet policy issues like IoT, the U.S. Government strengthens its ability to influence policy outcomes. NTIA looks forward to working under the direction of Secretary Ross and the Administration, as well as consulting with Congress and U.S. stakeholders, to develop this forward-looking agenda.

Broadband Map and Broadband Availability

Discussions are ongoing in Congress and in the Administration about how to facilitate the roll out of broadband in unserved areas of the country. I am no stranger to these issues. I know there is much we can do to encourage infrastructure deployment. The Administration is committed to ensuring that America remains the global leader in innovation, and broadband communications are essential infrastructure for innovation and economic growth in the digital economy. Advanced manufacturing is one key focus area, and the Administration is moving to streamline permitting and eliminate unnecessary regulations in this space.

My experiences have shown me that if we want to have a coherent policy for bringing broadband to rural and hard-to-reach areas, we need accurate, reliable data analysis to properly inform private sector decisions, reduce regulatory barriers, and better coordinate federal programs that fund broadband infrastructure. We need to be able to aggregate existing information with data from multiple outlets across the states that are using innovative ideas to harness deployment coverage that may not be reflected in the FCC's Form 477 data.

The President's Agriculture and Rural Prosperity Task Force recommended assessing the current state of rural high-speed Internet access. This recommendation reflects the simple fact that in order to solve the digital divide, we must better understand it. In the FY18 Omnibus Appropriations Act, Congress appropriated funds for NTIA to work with the FCC and the states to update the broadband map with more diverse data sources. This additional data will help produce a more accurate assessment of broadband capabilities and provide a tool for policy makers both here on the Hill and across the Executive Branch to better target the funds that are allocated to broadband.

NTIA has been a leader in collecting and analyzing broadband adoption data, and using that data to develop policy. We have decades of experience analyzing broadband in the United States. The work that NTIA's BroadbandUSA program has done cultivating relationships with state and local government officials who spend their time thinking about how to improve the broadband situation has yielded real results. Many states have been willing to take on the difficult challenge of maintaining broadband maps and collecting good data.

NTIA continues to support the work of these groups by facilitating a State Broadband Leaders Network, enabling state broadband coordinators to continue sharing information with each other and leveraging their knowledge to expand broadband in their states. The most recent meeting was held in mid-February.

Additionally, NTIA's BroadbandUSA program supports community leaders by identifying available resources and providing technical assistance. NTIA has provided direct technical assistance to more than 250 communities, helping them to develop public-private partnerships to meet their connectivity needs and digital inclusion goals. BroadbandUSA also offers monthly webinars that cover various broadband-related topics, and it holds workshops across the country. In March, we partnered with the Tennessee Department of Economic and Community Development on a summit that explored how public-private partnerships could improve broadband deployment, enhance digital skills, and stimulate innovation and economic development.

NTIA's BroadbandUSA program has long recognized the many barriers to broadband deployment caused by duplicative permitting processes, and inefficiencies caused by fragmented federal funding efforts related to broadband deployment. It is important to remember that the Federal Government is the single largest landowner in the country, and it can boost deployment immensely by actively reducing barriers to deployment on public lands and in government-owned buildings. In January, President Trump issued an Executive Order and Presidential Memorandum on this topic, and we intend to continue making progress in this area.

To that end, upon the completion of the Agriculture and Rural Prosperity Task Force report to the President in January 2018, the White House convened NTIA and the Department of Agriculture (USDA) to discuss implementation of the broadband-related components of the report. In follow-up, the White House regularly convenes meetings of the nearly two dozen agencies to launch the next phase of interagency coordination centered on three work streams: 1) coordinating federal funding for broadband; 2) streamlining federal permitting; and 3) leveraging of federal assets for broadband deployment. NTIA is serving on the leadership team of the new effort, which also includes USDA and the Executive Office of the President, represented by the National Economic Council, Office of Science and Technology Policy and the Office of American Innovation. In addition, NTIA serves as the Executive Secretary to coordinate the ongoing interagency effort, co-chairs the federal funding working group, and provides technical expertise and guidance to the federal permitting and leveraging federal assets working groups.

FirstNet

The First Responder Network Authority (FirstNet) was created to implement the 9/11 Commission recommendation to give public safety providers 21st century communication tools to help save lives, solve crimes, and keep our communities and emergency responders safe. FirstNet is working to deploy, maintain, and operate a nationwide public safety broadband network designed to be reliable, functional, and secure. It has made significant strides over the past year. FirstNet awarded the contract to AT&T to build and operate the FirstNet public safety network and secured the support of each state and territory for individual plans for the network in that state or territory. As a result, more than 60,000 public safety agencies, and countless first responders, will be able to take advantage of expanded coverage and capacity. For the first time, public safety communications will be based on commercial standards. This development will bring the benefits of lower costs, consumer-driven economies of scale, and rapid evolution of advanced communication capabilities.

In addition to this progress on FirstNet's responsibilities as an independent entity within NTIA, NTIA has diligently worked to implement its other specific responsibilities in support of the deployment and operations of this vital nationwide public safety broadband network. For example, in March of this year we began to award grants as part of the latest phase of our State and Local Implementation Grant Program (SLIGP 2.0), to continue our support of states and territories in their planning and collaboration with FirstNet on the implementation of the network. In addition, we have successfully implemented our process for our annual review and approval of FirstNet's fees, which will bolster our monitoring and oversight of FirstNet's long-term funding stability.

I remain committed to working with FirstNet to ensure that it utilizes stakeholder input and public safety engagement during the duration of the program. Both FirstNet and NTIA, as part of the Department of Commerce, will continue to ensure openness and transparency as FirstNet builds out its network. As this deployment begins, Secretary Ross and I will continue to collaborate and follow its efforts closely to make sure FirstNet addresses any concerns that arise.

In addition, it should be noted that NTIA's dedicated funding for its FirstNet oversight and support functions will end in 2022. I look forward to working with you and the Department to address how NTIA's funding for such activities over the longer term can be met.

Next Generation 911 (NG911)

NTIA and the National Highway Traffic Safety Administration (NHTSA) within the U.S. Department of Transportation are responsible for the joint 911 Implementation Coordination Office (ICO). The ICO is required to facilitate coordination and communications among public and private stakeholders at local, state, tribal, federal, and national levels. It administers a grant program for the benefit of 911 call centers across the country; and authors or consults on several reports to Congress.

The Middle Class Tax Relief and Job Creation Act of 2012 provided for $115 million of new funding for a grant program to upgrade public safety answering points (PSAPs) to NG911 capabilities. Specifically, the 911 Grant Program will provide financial assistance to PSAPs to help fund their migration to IP-enabled emergency networks; adopt NG911 services and applications, interconnection with emergency response organizations; and train public safety personnel in 911 services.

By statute, NTIA and NHTSA are required to issue regulations prescribing the grant criteria and develop program rules through notice and comment rulemaking. NTIA and NHTSA are finalizing the regulations and expect to publish a final rule to provide time for eligible entities to apply for the grants with a goal of making awards during 2018.

Leading Change Management

Being at NTIA for only a few months, I have learned that the agency's most valuable resource is its people. The policy and technical expertise is unmatched. The organization is in a period of transition, however, where it is losing valuable institutional knowledge as people who have decades of experience are retiring or leaving. Our challenge moving forward is to ensure that we have people who have the necessary skills and training to step in and maintain continuity and exceptional service to the public. Additionally, as technology continues to evolve, NTIA needs to better position itself for the future.

Through active engagement with our employees, NTIA is starting with our first phase, focusing on our mission-critical spectrum operations, to evaluate the current jobs, skillsets, and technology capabilities in use today. Our goal is to capture any gaps that exist between our current state and where we need to be in the future, so we can plan for new systems and train our employees in new skills. The organization is also seeking suggestions from employees on

opportunities to improve upon our automation, enabling us to streamline our work. By engaging with employees and understanding the existing landscape, NTIA can position itself now and into the future to be an evolving, growing, and thriving organization that can be agile in achieving our core missions.

Conclusion

The Internet was made in America, and our ideas, companies, and policies have helped cement our leadership and turn the Internet into one of the greatest engines for communications and commerce that the world has ever known. Similarly, we raced out to global leadership in 4G wireless as the Internet experience went mobile in a big way.

During the profound changes of the past three decades, America has been the center of innovation. You can trace that directly to the government putting its trust in the private sector and establishing the light-touch regulatory framework that has governed the Internet since its founding.

But if we are going to continue to lead for the next 30 years, government is going to have to work hand-in-hand with willing private sector partners.

As head of NTIA, I continue to look to create as many avenues for meaningful engagement with the private sector as I can. The communications and information sectors are the backbone of the economy, and they are too important not to get right. The United States must continue to lead as 5G and other new technologies emerge, and we must harness this growth for American businesses and American workers.