Testimony of Michael D. Gallagher
President and CEO, Entertainment Software Association
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Good afternoon, Chairman Blackburn and Ranking Member Doyle and distinguished members of the Subcommittee. I would first like to thank you for inviting me here today to testify on the reauthorization of the National Telecommunications and Information Administration (NTIA). I am Michael D. Gallagher, President and CEO of the Entertainment Software Association (ESA). ESA is the U.S. trade association in service to companies that publish computer and video games for consoles, personal computers, the Internet, and mobile phones. More importantly for this hearing, I also have had the privilege of serving as Assistant Secretary for Communications and Information at the U.S. Department of Commerce. I am appearing before you today in that latter capacity to offer my thoughts, as a former NTIA Administrator, on how Congress can help focus NTIA's priorities through this reauthorization.

Introduction

The NTIA plays a vital role in developing and driving the Executive Branch's policies on telecommunications and information technology. For years, its policy mission has focused on expanding broadband Internet access and adoption and ensuring that the Internet remains an engine for innovation and economic growth. Consideration of this reauthorization bill comes at an important point in time—as we stand on the cusp of the 5G rollout that will require the marshalling of our spectrum resources, continue to address the stubborn gaps in broadband availability and adoption, and navigate changing regulatory environments abroad that will affect industries with global reach. By reauthorizing the NTIA, Congress can add much-needed

resources to enable the agency to address these challenges and opportunities. Congress can also use this bill to re-focus the agency on the policy objectives that are core to the agency's competencies and expertise.

I commend the Subcommittee on highlighting important issues in the draft, including improving location technology for emergency services, and streamlining and consolidating broadband support programs administered by various executive agencies into an Office of Internet Connectivity and Growth. In my testimony, I will focus on two issues that are particularly important to NTIA's mission going forward: (1) improving rural broadband access, including by expanding the availability of spectrum for commercial use, and (2) ensuring the continued availability of Whois, a transparency tool that is vital to law enforcement, consumer protection, and intellectual property rights in the Internet ecosystem.

Rural Broadband

Improving Broadband Availability Mapping

In order to develop and implement the right policies to promote broadband deployment and adoption, we of course first need to understand broadband availability. Knowing where broadband deployment is still lacking will allow the government to better target policies to promote additional private sector investment. Geographic precision is necessary to hit this target. A high level of granularity is particularly important for determining availability in rural communities, where the distances between homes and businesses and the nearest network access point can be much greater compared to those in urban and suburban communities.

Over the years, NTIA and others have collected a wealth of data on broadband deployment and adoption from different sources. At the direction of Congress, the Federal Communications Commission (FCC) first started tracking and reporting on broadband

deployment at the turn of the century.[1] NTIA, carrying out its congressional mandate, has also played an important role in studying the availability and use of broadband Internet access. NTIA works with the Census Bureau on surveys and analyses of broadband availability and adoption.[2] Together with the FCC, NTIA developed the National Broadband Map.[3] Non-governmental research, such as surveys conducted by the Pew Research Center, have also periodically studied broadband adoption.[4] The quality of data collected has improved over time. For example, in 2014, the FCC revised its Form 477 to collect and analyze broadband availability at a census block level, which has significantly improved the accuracy and precision of our data.

Still, there is room for improvement, and we must do better. The data currently collected indicates only whether broadband is available *anywhere* in a given census block, and we are left to infer that residents elsewhere in that same block might also have access to the same service. But a census block can vary greatly in size, depending upon whether it is in an urban or rural environment. While the availability of service in one part of the block in urban and suburban communities suggests that the provider can, within reasonable costs, extend the service to other customers in the same block, that same inference may not be warranted with respect to rural

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[1] *See Inquiry Concerning the Deployment of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion, and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act of 1996*, Report, 14 FCC Rcd. 2398 (1999).

[2] *See* National Telecommunications and Information Administration, Blog Post, "New Data Show Substantial Gains and Evolution in Internet Use" (June 6, 2018), https://www.ntia.doc.gov/blog/2018/new-data-show-substantial-gains-and-evolution-internet-use ("NTIA June 6, 2018 Blog Post").

[3] *See* FEDERAL COMMUNICATIONS COMMISSION, MAPS, https://www.fcc.gov/reports-research/maps/ (last visited June 24, 2018).

[4] *See, e.g.*, PEW RESEARCH CENTER, INTERNET/BROADBAND FACT SHEET, http://www.pewinternet.org/fact-sheet/internet-broadband/ (last visited June 24, 2018).

communities, where census blocks can encompass hundreds of square miles.[5] Broadband availability is critical for economic development in rural regions, and we need to consider new ways of collecting and measuring data to help us better serve those communities.

I applaud the reauthorization bill's focus on NTIA's leadership role in developing and improving the National Broadband Map. I also support its recognition that NTIA can and should use the existing expertise of the States, other Federal resources, and public-private partnerships. Better policy begins with better data, and I am confident that NTIA can help gather and analyze that data.

Increasing Efficient Use of Spectrum Resources

Ensuring the availability of wireless spectrum for the private sector is also critical for expanding broadband access in rural communities. Given the economics of network build-out in low-density, geographically dispersed communities, wireless holds significant promise for bridging the urban-rural broadband gap. The data we do have confirms that more cost-effective measures are necessary to make meaningful reductions in that gap.

Broadband availability and use have steadily increased in the United States overall in the past decade. However, the gap between rural communities on the one hand, and urban and suburban communities on the other hand, has been stubbornly persistent. For example, an NTIA report in 2016 found that "the [Internet use] gap between rural and urban populations has remained remarkably consistent for at least as long as NTIA has been gathering data on Internet use."[6] The gap between rural and urban communities in 1998 was approximately 6 percentage

[5] UNITED STATES CENSUS BUREAU, GEOGRAPHIC TERMS AND CONCEPTS – BLOCK, https://www.census.gov/geo/reference/gtc/gtc_block.html.

[6] *See* National Telecommunications and Information Administration, Blog Post, "The State of the Urban/Rural Digital Divide" (Aug. 10, 2016), https://www.ntia.doc.gov/blog/2016/state-urbanrural-digital-divide.

points, and remained at 6 percentage points in 2015.[7] This gap has persisted even as other differences in Internet adoption along demographic lines, such as income and race, have narrowed over time.[8] Indeed, by some accounts, the gaps in availability and adoption rates between rural and urban communities may have actually *widened* in recent years. For example, according to the FCC's 2018 Broadband Report, between 2014 and 2016, the gap between urban and rural LTE penetration increased from 11.6 percentage points to 20.4 percentage points, attributable almost entirely to the growth of LTE availability in urban areas but its stagnation in rural areas.[9] By making more spectrum available for wireless broadband, NTIA can make important contributions to narrowing this gap.

Freeing up additional, unused Federal spectrum

First, it is important that NTIA continue the search for additional ways to promote efficient use of Federal government spectrum. I applaud and support the momentum to identify spectrum suitable for sharing between government and private sector users. However, experience shows us that the quest for identifying additional spectrum for exclusive non-government use must continue as well.

At Congress's direction, NTIA has been successful in the past in identifying unused or inefficiently-used Federal spectrum that has been reallocated from 12 government agencies for licensed commercial use. For example, the AWS-1 auction in 2006 reallocated spectrum in the 1710-1755 MHz from Federal users. The auction generated nearly $14 billion. Moreover, the

[7] *See id.*

[8] *See* NTIA June 6, 2018 Blog Post.

[9] 2018 Broadband Deployment Report at ¶ 52, Table 2b.

released spectrum enabled the rollout of 3G mobile wireless services across the country, which provided broadband speeds that propelled the development and adoption of the mobile Internet.

Need for more advanced spectrum sharing

Second, we all recognize that spectrum is a finite resource and that there is only so much that can be allocated to exclusive commercial use or for unlicensed use. For that reason, we must continue to prioritize technologies and regulations that enable spectrum sharing both for licensed and unlicensed use.

The benefits of increasing unlicensed use in valuable bands are well known. The expansion of unlicensed uses in the 5 GHz band over time has improved Wi-Fi speeds and encouraged the development of fixed wireless broadband services. For example, the addition of 255 MHz of spectrum in the 5 GHz band in 2003 nearly doubled the amount of 5GHz spectrum for Wi-Fi and allowed for speeds of up to 54 Mbps.[10] The Federal users, including for radiolocation services, shared the band and were able to continue to operate without interference from the new unlicensed users.[11] I encourage the Subcommittee to consider focusing on similar efforts to make more spectrum available for unlicensed use as part of the reauthorization process.

In addition to allowing users in different regions, or at different times, to share use of the same bands of spectrum, NTIA can and should continue to lead the way in advancing Dynamic Spectrum Access (DSA). Dynamic sharing will be critical for the move to 5G technologies and the accompanying increased bandwidth demands.

As we have seen, the economic value of moving to more efficient technologies is a boost to the Federal agencies as well. By deploying the funding mechanisms in the Commercial

[10] *See Revision of Parts 2 and 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) devices in the 5 GHz band*, Report and Order, 18 FCC Rcd. 24484 (2003).

[11] *See Id.* ¶ 3.

Spectrum Enhancement Act,[12] agencies can upgrade their dated and inefficient systems to modern systems without burdening their agency's core budget. The upgrades are completely funded by the auction proceeds. The proven success of this approach should inform future policy actions.

In particular, more advanced sharing of low frequency bands can help expand broadband access in rural areas. The physical properties of lower frequency spectrum make it easier for wireless providers to reach users across the greater geographical distances in rural communities. In 2006, working with the FCC, NTIA launched the Test-Bed program to explore increased spectrum sharing among Federal and non-Federal users in lower frequency bands. I applaud the progress that NTIA has made working with Federal users, the FCC, the academy, and private industry, to expand the field testing efforts. I would encourage the Subcommittee to give NTIA the additional resources that it needs to continue this important work.

Preserving Access to Whois Information

I want to touch on another important aspect of the bill: acknowledging the critical role that the Internet domain name service, Whois, plays in consumer protection, law enforcement, and intellectual property rights. Some have suggested that recent legal developments in the EU necessitate the removal of information from Whois, or the scaling back of information collection going forward. In fact, access to such information on Whois has already been suspended. While others have convincingly argued that there is no such requirement,[13] I want to express support for the statement in the bill's Sense of Congress on the importance of preserving Whois data, and to

[12] *Commercial Spectrum Enhancement Act*, Pub. L. 108-494 (2004).
[13] *See, e.g.*, The Internet Corporation for Assigned Names and Numbers, Press Release, "ICANN Files Legal Action in Germany to Preserve WHOIS Data (May 25, 2018), https://www.icann.org/news/announcement-2018-05-25-en.

recommend that the Subcommittee provide its fullest support for the NTIA Administrator in promoting this position abroad.

When businesses, organizations, or individuals register a domain name with the Internet Corporation for Assigned Names and Numbers (ICANN), they are required to provide basic identifying and contact information, including a name, phone number, and address. This data is publicly available through a database called Whois, which is maintained by ICANN and provides information for every registered domain name. Whois provides a vital function in the Internet ecosystem by promoting transparency for law enforcement, consumers, and intellectual property owners, among others.

Law enforcement officials have emphasized the importance of the Whois database for years. By using information available through Whois, investigators are able to identify the individual or entity responsible for a website that may be involved in criminal activity, and they can use that information to focus their investigation and to serve as a "starting point for utilizing other investigative techniques."[14] For example, in 2003, a senior FBI official testified before the House Judiciary Committee's Subcommittee on Courts, Intellectual Property, and the Internet, explaining the value of the database: "Cyber Division investigators use the Whois database almost every day. Querying of domain name registries is the first step in many cybercrime investigations."[15]

Whois has been important to consumer protection efforts in the United States. In 2006, then-Chairman of the Federal Trade Commission, John Leibowitz, issued a statement before

[14] James E. Farnan, Testimony Before the House Committee on the Judiciary, Subcommittee on Courts, Intellectual Property, and the Internet, Federal Bureau of Investigation (Sept. 4, 2003), https://archives.fbi.gov/archives/news/testimony/the-whois-database-and-cybercrime-investigation.

[15] *Id.*

ICANN explaining how the service aided the FTC in carrying out its mission. In one instance, he explained how, "[u]sing Whois data, the FTC found the defendants, stopped their illegal conduct, and obtained a judgment for millions of dollars in consumer redress."[16] Using Whois, consumers can also directly access more information about the websites they visit and use that information in reporting potential fraudulent activities. For instance, FTC staff noted that "a significant number" of consumer complaints the agency receives referenced the Whois database,[17] indicating that many consumers used this publicly available information as an initial way to gather more information about the domain name in question. The Organisation for Economic Co-operation and Development has also weighed in on this issue, concluding that "[e]ffective identification of online businesses is one element of the framework for consumer trust."[18]

Whois is also a valuable tool for enforcing intellectual property rights, which has been and will continue to be the engine for economic growth. Indeed, the International Trademark Association issued a statement in support of the database, explained how intellectual property owners could use the database to protect their property, and warned, "elimination or reduction of open access to ownership information contained in the Whois database will result in increased abuses of intellectual property and online fraud."[19]

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[16] John Leibowitz, Prepared Statement of the Federal Trade Commission before the Internet Corporation for Assigned Names and Numbers ("ICANN") Meeting Concerning Whois Databases, at 4-5 (June 2006), https://www.icann.org/en/system/files/files/leibowitz-mar-26jun06-en.pdf ("FTC Statement").

[17] *Id.* at 7.

[18] Consumer Policy Considerations on the Importance of Accurate and Available Whois Data, Organisation for Economic Co-operation and Development, at 4 (June 2, 2003), http://www.oecd.org/officialdocuments/publicdisplaydocumentpdf/?cote=DSTI/CP(2003)1/FINAL&docLanguage=En

[19] International Trademark Association, Continued Open Access to the Whois Database (Nov. 12, 2008), http://www.inta.org/Advocacy/Pages/ContinuedOpenAccesstotheWhoisDatabase.aspx.

Taken as a whole, the Whois database serves law enforcement officials, intellectual property owners, and consumers as they identify and confront online predators and cybercriminals that would otherwise hide behind the anonymity of a computer screen.

I strongly support the bill's focus on the importance of preserving robust access to the Whois service and believe that NTIA will be a great advocate internationally. Bicameral, bipartisan support for NTIA's position on Whois would greatly help the agency's ability to advance the issue before multilateral stakeholders.

Again, thank you for inviting me here to speak with you today.