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Before the  
United States Senate  
Subcommittee On Communications, Technology, Innovation, And The Internet  
Committee On Commerce, Science, And Transportation

On  
“Advancing The Internet Of Things In Rural America”

Washington DC  
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Chairman Wicker, Ranking Member Schatz, and Members of the Subcommittee, thank you for the opportunity to be here today on behalf of the National Digital Inclusion Alliance (NDIA) and our 285 affiliated organizations.

NDIA represents leaders of local community organizations, public libraries, municipalities and other institutions working hard to reduce digital disparities among neighbors. To improve the daily lives of all community members, NDIA calls for digital inclusion public policies that reflect our affiliates’ expertise and diverse experiences.

NDIA’s approach is based in the knowledge that broadband adoption is most effectively promoted by community-driven efforts combining:

- Affordable home broadband service.
- Public broadband access.
- Appropriate affordable devices.
- Locally trusted technology training and support.

NDIA represents organizations with a wide range of experience reducing the digital divide in the United States. The experiences of our affiliates include providing guidance to low-income parents connecting to their children’s teachers, teaching seniors how to use their electronic health records, helping veterans learn digital skills in order to acquire a job, and enabling disabled adults to participate more fully in their communities. The services of our affiliates include digital literacy training, public Internet access, home broadband programs and digital inclusion advocacy.





NDIA currently counts 285 affiliated organizations, including 39 national nonprofits and 210 local public and nonprofit organizations in 37 states, the District of Columbia and the US Virgin Islands. Our local affiliates include 23 municipal government bodies, 39 local public libraries and regional library councils, 14 college/university programs, 10 state government agencies, 3 local school districts, 7 housing authorities and 114 local nonprofit organizations. The full list of NDIA affiliates with links to their websites can be found at <https://digitalinclusion.org/members>.

The members of this subcommittee clearly recognize the incredible impact IoT can and will have on the U.S. economy and our residents.

My father passed away five years ago. He had chronic obstructive pulmonary disease. I grew up outside of Lima, Ohio. The closest VA clinic to my parents was in Dayton, Ohio, about an hour away. The VA provided my dad with a device that measured his vitals, including his oxygen levels. The device used my parents' internet connection. I have no idea where the nurse was but somewhere, a nurse reviewed the data from the device. When necessary, the nurse called the squad for my dad. That device, a precursor of the IoT, saved my dad's life multiple times. It bought my family time with him. And it allowed him to live at home. That would not have been possible without an internet connection.

But in order for the U.S. to have an IoT strategy that benefits all Americans, we must understand the barriers to broadband adoption.

The FCC's "2016 Broadband Progress Report" found that 10 percent of all Americans (34 million people) lack access to 25 Mbps/3 Mbps service. 39 percent of rural Americans (23 million people) lack access to broadband service as the FCC defines it – 25 Mbps/3 Mbps.<sup>1</sup>

These numbers tell us how many Americans lack access to broadband service. But just because service is available to the home does not ensure the resident has subscribed to it, or can subscribe. We know the greatest barriers to home broadband adoption beyond the infrastructure itself are cost of the service and digital skills.

Pew Research Center tells us that in 2016, 73% of urban U.S. adults used broadband at home. This drops to 63% for rural U.S. adults.<sup>2</sup> Neither is acceptable. We are beyond discussing whether or not home broadband is essential today. Now we must discuss how we ensure all Americans have affordable home broadband and digital skills in order to not only make the

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<sup>1</sup> Federal Communications Commission. "2016 Broadband Progress Report". January 29, 2016.

<https://www.fcc.gov/reports-research/reports/broadband-progress-reports/2016-broadband-progress-report>

<sup>2</sup> Pew Research Center. "Internet/Broadband Fact Sheet". January 12, 2017.

<http://www.pewinternet.org/fact-sheet/internet-broadband/>





most of the internet on a computing device but to also make the most of IoT. The more of us purchasing and using IoT, the more valuable those IoT are.

Right now, efforts to address lack of infrastructure and cost of broadband service and digital skills trainings are local. The federal government has a handful of programs addressing infrastructure, but those efforts are operating without a cohesive federal strategy.

I can say without a doubt, we have no substantial federal programs addressing either the cost of broadband or digital skills. The United States needs an organized federal strategy to increase broadband access and adoption.

There has been a consistent 10-15% gap in adoption rates between rural and urban areas going back to the early 2000s. Research shows rural broadband adoption (not just access) is crucial for improved economic outcomes.<sup>3</sup>

The first step toward such a strategy is to improve access and adoption data. Let's start with the FCC's basic data source -- Form 477.

NDIA recently took the opportunity to submit comments in response to the FCC's Further Notice of Proposed Rulemaking "In the Matter of Modernizing the FCC Form 477 Data Program". A copy of those comments is submitted with these remarks. To summarize them very briefly:

- 1) The FCC's Form 477 process has a significant problem with the way it collects fixed broadband deployment information. Providers are required to report, for each technology used in each Census block, only the Maximum Advertised Download Speed and Maximum Advertised Upload Speed available to any residential customer in the block. Of course, that lucky maximum-speed customer isn't necessarily typical of the neighbors. This method has the effect of exaggerating the speeds available to most households in both urban and rural communities. It's a serious impediment to our realistic understanding of the state of broadband access throughout the U.S. NDIA suggests a simple fix: Form 477 should require each provider to list, for each home broadband technology deployed, the speed tiers provided via that technology to households in each block, and the number of households in the block for which each tier is the maximum available.

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<sup>3</sup> Brian Whitacre, Roberto Gallardo, and Sharon Stover. 2014a. "Broadband's Contribution to Economic Growth in Rural Areas: Moving towards a Causal Relationship." *Telecommunications Policy* 38(11): 1011-1023. <http://www.sciencedirect.com/science/article/pii/S0308596114000949>





- 2) Form 477 also provides the only localized information we have on actual household broadband adoption, in the form of Census tract-level fixed broadband subscription counts used to create the FCC's Internet Access Services mapping data. NDIA suggested two modest changes in the FCC's collection and reporting of the provider subscription data incorporated in the Internet Access Services reports: Collect household totals for each tract at three or four meaningful speed benchmarks, not just the current 200 kbps and 10 mbps thresholds; and publish those totals as actual percentages of total households, rather than the unnecessarily broad ranges now in use.

The point of these recommendations is the need to improve the accuracy and usefulness of the broadband deployment and adoption data that the FCC collects, maps, and reports to us all – the data that informs public discussion of the nation's progress in making both the Internet of Things and the Internet of People available to us all.

With better public data on both topics -- and a clear understanding that the Internet of Things isn't likely to make its way into homes that either can't access or can't afford conventional broadband connections – NDIA is certain we have a much better chance of making the benefits of IoT available to all Americans, rural and urban alike.

I must stress, again, the need for the U.S. to have a cohesive and funded broadband access and adoption strategy.

Thank you.

