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DEPARTMENT OF COMMERCE

National Telecommunications and Information Administration

NATIONAL SCIENCE FOUNDATION

[Docket No. 160831803-6803-01]

RIN 0660-XC031

National Broadband Research Agenda

AGENCIES: National Telecommunications and Information Administration, U.S. Department of Commerce; National Science Foundation.

ACTION: Notice, Request for Comments.

SUMMARY: In furtherance of the Broadband Opportunity Council's recommendation to improve data collection, analysis and research on broadband, the National Telecommunications and Information Administration (NTIA) and the National Science Foundation (NSF) request public comments to inform the development of a National Broadband Research Agenda (Agenda) in collaboration with the Networking and Information Technology Research and Development (NITRD) Program and other agencies that form the Council. This Agenda will reflect the most significant opportunities for data collection, analysis, and research to keep pace with, and take advantage of, the massive digital changes that permeate our economy and society.

DATES: Submit written comments on or before 5 p.m. Eastern Daylight Time on October 11, 2016.

ADDRESSES: Written comments may be submitted by email to: *NBRArfc2016@ntia.doc.gov***.** Include "National Broadband Research Agenda" in the subject line of the message. Comments

submitted by email should be machine-readable and should not be copy-protected. Written comments may also be submitted by mail to the National Telecommunications and Information Administration, U.S. Department of Commerce, 1401 Constitution Avenue NW, Room 4887, Attn: National Broadband Research Agenda, Washington DC 20230. Responders should include the name of the person or organization filing the comment, as well as a page number on each page of the submission. Enclose a CD or DVD version of your submission labeled with the name and organization of the filer. All comments received are a part of the public record and will generally be posted to https://www.ntia.doc.gov/federal-register-notice/2016/comments-national-broadband-research-agenda without change. All personal identifying information (e.g., name, address) voluntarily submitted by commenters may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information. NTIA will accept anonymous comments.

FOR FURTHER INFORMATION CONTACT: Francine Alkisswani, National Telecommunications and Information Administration, U.S. Department of Commerce, 1401 Constitution Avenue, NW, Room 4621, Washington, DC 20230; telephone: (202) 482-5560; email: falkisswani@ntia.doc.gov; or Jack T. Brassil, Computer and Information Science and Engineering, National Science Foundation, 4201 Wilson Boulevard, Room 1175.31N, Arlington, VA 22230; telephone: (703) 292-8950; email: jbrassil@nsf.gov. Please direct media inquiries to NTIA's Office of Public Affairs; email: press@ntia.doc.gov; telephone: (202) 482-7002.

SUPPLEMENTARY INFORMATION

I. BACKGROUND

In March 2015, President Obama created the Broadband Opportunity Council (Council), composed of 25 federal departments and agencies, to determine actions that the federal government could take to eliminate barriers to broadband deployment, competition, and adoption and encourage investment through executive actions within the scope of existing agency programs, missions, and budgets.[1] The U.S. Departments of Commerce and Agriculture co-chaired the Council.

In September 2015, the White House released the Council's report, which described 36 concrete steps the member agencies would take to reduce barriers, incentivize investment, promote best practices, align funding policies and decisions, and support broadband deployment and adoption.[2] One of the actions in the report called for NTIA and NSF to develop a national broadband research agenda with input from other federal agencies and the broader research community. This Notice seeks recommendations from all members of the research community

[1] The White House, Office of the Press Secretary, *Presidential Memorandum – Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training* (March 23, 2015), *available at* https://www.whitehouse.gov/the-press-office/2015/03/23/presidential-memorandum-expanding-broadband-deployment-and-adoption-addr.

[2] Broadband Opportunity Council, *Report and Recommendations Pursuant to the Presidential Memorandum on Expanding Broadband Deployment and Adoption by Addressing Regulatory Barriers and Encouraging Investment and Training* (Aug. 20, 2015) at 12, *available at* https://www.ntia.doc.gov/files/ntia/publications/broadband_opportunity_council_report_final.pdf.

to support the development of the Agenda. This input will supplement input received through an NSF-sponsored visioning workshop.[3]

II. OBJECTIVES OF THIS NOTICE

This Notice seeks input to improve data collection, analysis, research, and their applications for the benefit of broadband policy development, program implementation, and program evaluation. A robust broadband research agenda will also help external stakeholders, especially those whose research initiatives rely on federal data, reporting, funding, coordination, and other federal resources and support. This Notice seeks such input in four specific areas: (i) broadband technology; (ii) broadband deployment, adoption, and utilization by individual, business, and institutional users; (iii) assessment of economic and social impacts; and (iv) opportunities for federal leadership in data collection, research, and overall coordination.

The success of the Agenda requires not only high-impact, cutting-edge proposals across data collection, analysis, and research, but also an overall strategic plan that is achievable. Thus, through this Notice, NTIA and NSF seek recommendations, best practices, and solutions to current challenges with regard to: promising research and analytical methodologies; effective approaches for data collection and sharing; opportunities for better alignment and coordination for these research efforts across all federal and external stakeholders; funding strategies with suggestions for prioritization and public-private resource sharing; and possible changes to federal policies and programs that could enhance broadband research. NTIA and NSF also encourage

[3] The National Science Foundation (NSF) funded the Pennsylvania State University, Institute of Information Policy (IIP) to organize a visioning workshop with leading experts in academia, industry, and government on June 16-17, 2016, at the NSF in Arlington, Virginia. See the details of the "Broadband 2021" workshop at https://broadband.ist.psu.edu/.

interested parties to recommend any other suggestions (e.g., research topics, implementation approaches) if the concepts are not articulated in this Notice.

III. REQUEST FOR COMMENTS

Instructions for Commenters: Commenters are encouraged to address any or all of the following questions. Commenters responding to specific questions should label the response with a question number. Comments that contain references to studies, research, and other empirical data that are not widely published should include copies of (or links to) the referenced materials with the submitted comments.

For any response, commenters may wish to consider describing specific goals and action(s) that NTIA and/or NSF, or other federal agencies, may take (independently or in conjunction with the private sector) to achieve those goals; the benefits and costs associated with the action(s); whether the proposal is agency-specific or interagency; the rationale and evidence to support the proposal; and the roles of other stakeholders.

A. BROADBAND TECHNOLOGY

Comments under this heading should address research and evaluation as related to broadband technology development and innovation. The broadband technology landscape continues to reflect rapid innovation and advancement, across all levels of the broadband technology value chain, e.g., platforms, networks, devices, services, applications. These advances have yielded a myriad of new products and services, and improved the quality and performance of existing ones. Questions related to technology research follow:

1. What are the critical data and research needs in the areas of broadband technology and innovation?

2. What specific technology research proposals, and associated methodologies, should be prioritized to support the advancement of broadband technology? And why?
3. What specific technology research proposals can support federal efforts to foster the access and adoption of broadband technology across rural areas, and other unserved and underserved segments, such as population groups that have traditionally under-utilized broadband technology (e.g., seniors, low-income families, persons with disabilities)?

B. BROADBAND ACCESS AND ADOPTION

Comments under this heading should address research and evaluation as related to programs, services, and applications that drive broadband access, adoption, and utilization for individuals and their families, businesses, and institutions. Questions related to broadband deployment and adoption follow:

4. What are the critical data and research needs in the areas of broadband deployment and access?
5. What specific research proposals, and associated methodologies, regarding broadband access should be prioritized? And why?
6. What are specific areas for federally-supported research as related to key market trends that impact broadband deployment, including business models, public-private partnerships, sustainability drivers, the removal of regulatory barriers?
7. What are the critical data and research needs in the areas of broadband adoption and utilization?

8. What specific research proposals, and associated methodologies, regarding broadband adoption and utilization should be prioritized? And why?
9. What specific research and data are needed to understand how rural residents and other population groups that have traditionally under-utilized broadband technology (e.g., seniors, low-income families, persons with disabilities) can better adopt and use broadband?

C. SOCIOECONOMIC IMPACTS

Comments under this heading should address research and evaluation as related to measuring the social and economic impacts of deploying and/or using broadband. Understanding the economic and social impact of broadband on the American society influences the prioritization, design, and evaluation of federal policies and programs. Questions related to socioeconomic impact follow:

10. What are the critical data and research needs in the area of broadband and its economic and social impact?
11. What specific research proposals, and associated methodologies, regarding the socioeconomic impact of broadband should be prioritized?
12. Are there specific socioeconomic research areas that can help measure the effectiveness of federal programs seeking to foster broadband access, adoption, or competition?

D. OPPORTUNITIES FOR FEDERAL LEADERSHIP IN DATA COLLECTION AND RESEARCH

Comments under this heading should address proposals for implementing the suggestions and recommendations discussed above. The Agenda will include a strategic plan that includes specific initiatives, measurable goals, and identification of the key resources necessary for implementation. Resources and leadership will be required across a multitude of stakeholders (e.g., federal government, industry, academia). Questions related to opportunities for federal leadership and engagement with stakeholders follow:

13. What opportunities exist to improve the sharing of research from federal research programs with external stakeholders (e.g., industry, academia)? Likewise, how can external stakeholders better share their research with federal agencies?
14. What are suggestions for enhancing cross-disciplinary collaboration in broadband research?
15. Given limited federal budgets and existing research efforts led by industry, academia, and other external groups, what specific role should the federal government play in the area of broadband research (e.g., funding, data gathering, coordination)?
16. Are there opportunities to collect new broadband-related data or expand current data sets within federal programs that fund and/or produce research?
17. What data (whether public or commercial/proprietary) would facilitate ground-breaking research related to broadband, if that data were to become available?
18. What are possible changes to federal policies and programs that could enhance broadband research?

19. What are recommendations for standardizing broadband and commonly-used demographic terms across the research community? How can these terms be operationalized to ensure comparability of data?

Dated: _September 6, 2016_____.

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Kathy D. Smith,

Chief Counsel, National Telecommunications and Information Administration.

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