



June 2, 2016

National Telecommunications and Information Administration  
U.S. Department of Commerce  
1401 Constitution Avenue, NW  
Washington, DC 20230

Via e-mail: [iotrhc2016@ntia.doc.gov](mailto:iotrhc2016@ntia.doc.gov)

**Re: Docket No. 160331306-6306-01 Request for Comments on The Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things**

The Family Online Safety Institute (FOSI) appreciates the opportunity to contribute to the National Telecommunications and Information Administration (NTIA) Request for Comment on “The Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things.”<sup>1</sup>

FOSI<sup>2</sup> is an international, non-profit, membership organization<sup>3</sup> working to make the online world a safer place for children and their families. We achieve this by identifying and promoting the best practices, tools, and methods in the field of online safety. FOSI convenes leaders in industry, government and the non-profit sectors to collaborate and innovate new solutions and policies in the field of online safety. Through research, resources, events and special projects, FOSI promotes a culture of responsibility online and encourages a sense of digital citizenship for all.

When it comes to the Internet of Things (IoT), FOSI is engaged in convening discussions, providing resources, helping develop best practices, and offering thought leadership on how connected devices, toys, and machines can impact families. As new technologies emerge, FOSI works to identify not only how they can be useful for individuals and communities but also the potential risks. In 2016, FOSI plans to undertake even more work on the IoT and its effect on kids, with a specific focus on connected toys. This will enable us all to better understand how smart toys can improve the lives of children, and how to best mitigate the harms, while developing resources to inform parents about steps to take control of safety and privacy.

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<sup>1</sup> NTIA, Request for Public Comments, *The Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things*, 81 FR 19956 (April 6, 2016).

<sup>2</sup> See <https://www.fosi.org>.

<sup>3</sup> FOSI members include: Amazon, AOL, AT&T, AVG, Comcast, Crisp Thinking, CTIA, Disney, ESA, Facebook, Google, GSMA, LinkedIn, Microsoft, MPAA, NCTA, Netflix, Nominum, Photobox, RSA, Skout, Symantec, Telstra, Telecom Italia, T-Mobile, Twitter, Verizon, Vodafone, and Yahoo! The recommendations expressed in this letter of comment do not necessarily reflect the views of FOSI’s members.



## Exploring the Benefits

The Internet of Things provides significant opportunities for all families. From those with seniors and people with disabilities to families with young children hoping to get a better understanding of their health and development, the IoT can help. Fitness monitoring devices can increase activity. Systems to monitor the vital signs of newborn babies<sup>4</sup> can regulate health and smart toys can interact with kids to help build speech, social, and learning skills.<sup>5</sup> Connected clothing, toothbrushes,<sup>6</sup> and dolls can provide parents with peace of mind allowing them to better understand and improve the wellbeing of their family.

In the past year, FOSI has held two panels on the Internet of Things to explore the benefits and potential challenges. In March of 2015, FOSI convened an event at the Woolly Mammoth Theater in Washington, D.C. entitled, “Trust, Safety, and The Internet of Things,” which included representatives from the Federal Trade Commission, The Center for Democracy and Technology, George Mason University, and the American Association of People with Disabilities (AAPD).<sup>7</sup> Speakers focused on the need to educate consumers about the opportunities provided by connected devices and how to minimize risks of reputational and economic harm.

Adam Theirer, from George Mason University, cautioned against government regulation and warned of the unintended consequences, while others explored the need for increased transparency from companies. During this discussion, it was particularly insightful to hear Henry Claypool from AAPD talk about how IoT was already impacting and improving the lives of disabled people. It was helpful to learn about how connected devices can allow people with disabilities to live independently and reduce social isolation.

At FOSI’s Annual Conference in November 2015, a session entitled “The Internet of Things: Cars and Watches and Houses, Oh My!”<sup>8</sup> featured speakers from the Federal Trade Commission, the Center for Democracy and Technology, the U.S. Chamber of Commerce, the Consumer Technology Association, and journalist Dan Tynan. During the conversation in Washington, D.C., panelists identified both personal and societal

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<sup>4</sup> See e.g. Owlet available at <https://www.owletcare.com/>; David Freeman, New Smart Diaper Uses Wireless Sensor to Alert Parents When Baby Needs Changing, *The Huffington Post*. (Feb. 12, 2014) available at [http://www.huffingtonpost.com/2014/02/12/smart-diaper-wireless-sensor-alert-baby\\_n\\_4768837.html](http://www.huffingtonpost.com/2014/02/12/smart-diaper-wireless-sensor-alert-baby_n_4768837.html).

<sup>5</sup> See Sophie Charara, “The Best Connected Toys and Fun Wearable Tech for Kids, Wareable (Jan. 29, 2016) available at <http://www.wearable.com/parenting/best-connected-toys-fun-wearables-kids>; David Linthicum, “Hello Barbie! Welcome to the Cloud and IoT,” *InfoWorld* (Dec. 22, 2015) available at <http://www.infoworld.com/article/3017524/cloud-computing/hello-barbie-welcome-to-the-cloud-and-internet-of-things.html>.

<sup>6</sup> See e.g. Grush The Gaming Toothbrush available at <http://www.grushgamer.com>.

<sup>7</sup> FOSI, *Trust, Safety & The Internet of Things* Event (March 2015) available at <https://www.fosi.org/events/panel-discussion-trust-safety-and-internet-things/>.

<sup>8</sup> FOSI, *Annual Conference Panel “The Internet of Things: Cars and Watches and Houses Oh My!”* (Nov. 17, 2015) available at <https://www.youtube.com/watch?v=Oz-Tdih7TbY>.



advantages produced by IoT including the ability to use data and analytics to improve traffic and identify roads for repair in addition to reporting accidents. FOSI is a proponent of convening discussions to identify additional benefits and believes that government agencies should hold workshops or panels to explore the positive uses of connected devices.

A 2015 FOSI Brief on the Internet of Things can be referenced for additional information around the benefits and challenges of IoT.<sup>9</sup> FOSI encourages the Department of Commerce to review the summaries of these panels and engage with communities that are already experiencing improvements in their lives as a result of IoT.

### **Research and Resources Can Address Challenges**

In the United Kingdom, the government has supported IoT research and initiatives, including the recent launch of the PETRAS Research Hub. PETRAS brings together researchers from nine universities to examine key issues with the Internet of Things including privacy, ethics, and security.<sup>10</sup> The hub is a public-private partnership and is part of a UK government supported initiative, IoTUK, which includes £40 million of funding to help advance the Internet of Things. U.K. Minister for Culture and the Digital Economy, Ed Vaizey, has been supportive of the PETRAS initiative and advancing efforts for the government and industry to work together on IoT. These efforts and initiatives are a good example for the U.S. to follow. Government officials should use their leadership positions to encourage the access and adoption of IoT, to stimulate the creation of new uses and benefits of IoT, and to highlight ways to reduce potential risks.

FOSI encourages NTIA to focus on expanding research into IoT benefits and risks to examine consumer understanding. Research will also help focus on actual harms and provide a basis to develop solutions including new resources and the development of codes of conduct around particular areas of IoT.

Privacy concerns include security risks and misuse of the data collected, as well as the potential for device hacking. These and other issues such as the affordability and access to smart devices by all families should be examined. The potential risks for young technology users should be examined and discussed. Advice and best practices for cybersecurity as well as device safety can help mitigate risks.

The government has an important role to play in the education of both consumers and industry around the Internet of Things. The Federal Trade Commission produced guidance for industry, “Careful Connections: Building Security in the Internet of Things”

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<sup>9</sup> FOSI, *Everything Connected: Possibilities and Privacy* (May 5, 2015) available at <https://www.fosi.org/policy-research/everything-connected-possibilities-and-privacy/>.

<sup>10</sup> See PETRAS Internet of Things Research Hub available at <http://www.petrashub.org/>; see also Engineering and Physical Sciences Research Council, *New Internet of Things Research Hub Announced* (Jan. 6, 2016) available at <https://www.epsrc.ac.uk/newsevents/news/iotresearchhub/>.



in 2015.<sup>11</sup> FOSI found this to be a useful resource for technology companies, especially for newer companies working in this space. Guidance from the government in the form of resources, tips, and dialogue in communities outside of Washington, D.C. can help address the challenges and inform and educate emerging developers and established companies working on IoT innovations.

Consumer education will be essential for the growth of IoT. The government, industry, and civil society have important roles to play. All can increase the adoption of connected devices that can improve lives, but also educate the public about how to take control over what they are sharing and securing their information. Examples of productive government education efforts include the FTC's OnGuardOnline<sup>12</sup> and Stop.Think.Connect<sup>13</sup> from the Department of Homeland Security. These resources provide important messages and advice for consumers and many items are available in English and Spanish. The Department of Commerce should coordinate government education efforts and also ensure that all communities are getting access to the benefits of IoT and receiving the necessary education to address the challenges. The educational component is essential to ensuring that all people can take advantage of the benefits while minimizing the risks. This should include outreach in multiple languages and approaches to community leaders who can further distribute information.

### **Bringing Together Agencies**

The Department of Commerce should take an open, inclusive, and collaborative approach to IoT. FOSI encourages NTIA to use its convening power to create multistakeholder engagement to address issues around the Internet of Things. Bringing together the wide variety of impacted parties will ensure a more complete understanding of the potential benefits while establishing additional information on potential harms. The eventual development of voluntary codes of conduct like those established for mobile privacy issues and drone use<sup>14</sup> may be a way to encourage the responsible development of IoT while also minimizing risks without stifling innovation. NTIA should work as a convener and bring together not only industry and civil society, but also the many government agencies working on these issues. This will avoid duplication of efforts and establish a common framework for handling IoT issues.

Presentations from innovators and those impacted by the Internet of Things can broaden the government's understanding in this area and allow policymakers to hear from those who experience the benefits firsthand. Workshops previously run by the Federal Trade

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<sup>11</sup> Federal Trade Commission, *Careful Connections: Building Security in the Internet of Things* (Jan 2015) available at <https://www.ftc.gov/tips-advice/business-center/guidance/careful-connections-building-security-internet-things>.

<sup>12</sup> *Id.* OnGuard Online available at <https://www.onguardonline.gov/>.

<sup>13</sup> Department of Homeland Security, *Stop. Think. Connect.* available at <https://www.dhs.gov/stopthinkconnect>.

<sup>14</sup> NTIA, *Voluntary Best Practices for UAS Privacy, Transparency, and Accountability* (May 19, 2016) available at <https://www.ntia.doc.gov/other-publication/2016/multistakeholder-process-unmanned-aircraft-systems>.



Commission<sup>15</sup> explored potential IoT issues by bringing together interested stakeholders and similar workshops held by NTIA could establish topics to address as well as increase the understanding of how certain populations can benefit.

The Online Safety and Technology Working Group (OSTWG) convened by the Department of Commerce in 2009 and reporting in 2010 is another example of NTIA bringing together the private sector as well as numerous government agencies to coordinate efforts. OSTWG identified key issues, reviewed existing work on the topics, and provided useful recommendations for both the private industry and government.<sup>16</sup> A similar working group with government agencies, companies, and other parties would be useful with IoT.

FOSI agrees with the recommendations from Senators Schatz, Fischer, Booker, and Ayotte in their recent letter which asked the Department of Commerce to take a “holistic approach” to foster the collaboration of agencies handling the many issues around IoT.<sup>17</sup> The Senators advocated for interagency dialogue and increased collaboration. FOSI believes this will help prevent overlapping government efforts or regulatory confusion that might negatively impact IoT development and will also lead to improved consumer protection and awareness of issues.

## Conclusion

FOSI commends the NTIA for examining the benefits, challenges, and role for the government to advance the Internet of Things. FOSI hopes that NTIA will focus on exploring the positive uses of IoT, coordinating government efforts, increasing research into the potential benefits and risks, and take a collaborative approach to addressing the challenges to ensure continued growth into IoT and the expanding opportunities that IoT brings to all families. Thank you for the opportunity to comment. FOSI looks forward to the NTIA green paper and working with NTIA on these important issues.

Respectfully submitted,

Jennifer Hanley  
Director, Legal & Policy  
Family Online Safety Institute

Emma Morris  
Global Policy Manager  
Family Online Safety Institute

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<sup>15</sup> Federal Trade Commission, *Internet of Things – Privacy and Security in a Connected World*, (Nov. 19, 2013) available at <https://www.ftc.gov/news-events/events-calendar/2013/11/internet-things-privacy-security-connected-world>.

<sup>16</sup> Online Safety Technology Working Group, *Youth Safety on a Living Internet* (June 4, 2010) available at [https://www.ntia.doc.gov/legacy/reports/2010/OSTWG\\_Final\\_Report\\_060410.pdf](https://www.ntia.doc.gov/legacy/reports/2010/OSTWG_Final_Report_060410.pdf).

<sup>17</sup> Senators Schatz, Fischer, Booker, and Ayotte, *Letter to Department of Commerce on the Internet of Things* (April 19, 2016) available at <http://www.schatz.senate.gov/press-releases/bipartisan-group-of-senators-urge-the-department-of-commerce-to-lead-on-the-internet-of-things>.