



June 2, 2016

Sent via email iotrfc2016@ntia.doc.gov

National Telecommunications and
Information Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W., Room 4725
Washington, DC 20230

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

I am writing on behalf of Samsung to thank the Department for soliciting input on how the U.S. government can promote economic growth and opportunity to foster innovation in the Internet of Things (“IoT”).¹ These are extremely important questions, and we greatly appreciate your leadership and the Department’s thoughtful approach in its Request for Comment (“Request”). The Request correctly recognizes that the IoT “has quickly become one of the most important technological trends of this decade” and that it “touches almost every industry and will transform our lives and society worldwide.”²

Today, Samsung is working hard not just on research, development, and manufacturing, but also as an IoT thought leader in collaboration with industry, policymakers, and social change-makers. We know that all of these stakeholders must engage together to hasten the transformative benefits of the IoT and ensure its success. To that end, on June 21, we are sponsoring a conference with the Washington Post called *Internet of Things: Transforming the Future*. The event will showcase the IoT’s limitless potential to bring people everywhere a better quality of life. Specifically, following a keynote address on IoT policy by Oh-Hyun Kwon, Samsung’s Vice Chairman and CEO, the conference will feature multiple panels engaging in a cross-sector dialogue about IoT technology and the path forward. We invite any interested Department staff and other policymakers to join us by registering here: <https://iotvisionfortomorrow.splashthat.com/?em=537>.

We plan to submit additional information responsive to the Request following the June 21 conference, including a copy of the keynote address and related materials that lay out Samsung’s IoT vision in detail. Going forward, Samsung would welcome the opportunity to serve as a resource as the Department compiles its “green paper.” In the meantime, below we provide some high level thoughts in response to the Request:

¹ *The Benefits, Challenges, and Potential Roles for the Government in Fostering the Advancement of the Internet of Things*, Request for Public Comment, Docket No. 1603311306-6306-01, RIN 0660-XC024, 81 Fed. Reg. 19,956 (Apr. 6, 2016) (“Request”).

² Press Release, Department of Commerce, *U.S. Department of Commerce Seeks Comment on Potential Policy Issues Related to Internet of Things*, Apr. 5, 2016, <https://www.commerce.gov/news/press-releases/2016/04/us-department-commerce-seeks-comment-potential-policy-issues-related>.

Benefits of the IoT and Samsung's Global Leadership. The Department's focus on the IoT is entirely appropriate and very timely, given that the IoT sector has the potential to ultimately be as transformative to consumers, industry, and governments as the Internet has been. The IoT provides the connective tissue that integrates the physical and digital worlds into a system for smarter living; although there are various definitions of the term IoT, most agree that the core concept is about leveraging sensors, data processing, and the Internet to solve real human challenges. To date, the IoT already is delivering smarter homes, smarter offices, and increased efficiency. In the coming years, the IoT will deliver completely novel solutions to enduring problems, new uses for existing solutions, and even solutions for problems we do not have and cannot predict today. The IoT will fuel smarter cities, smarter nations, and a smarter world. Overall, the potential benefits to consumers, industry, governments, and society are too numerous to count; they include fitness and wellness (including facilitating seniors' independent living), energy management, transportation and urban planning, environmental controls, smart government, increased civic engagement, and public safety. Moreover, in both the IoT economy and downstream, these innovations will drive productivity, growth, and jobs.

Samsung is wholly committed to the IoT, and we are moving forward on IoT products at full steam. Combining our global leadership in the IoT field with our role as a leading provider of components, devices, and data integration and our long experience creating products that consumers want and can easily use, we are developing IoT products that are completely in sync with everyday life and will save consumers time and money. Our IoT commitment cuts across multiple Samsung business lines and is reflected in the company's recent investments and acquisitions, all of which serve as building blocks for Samsung's overall IoT vision. For example, all of Samsung's IoT devices will be open, not locked.³ Samsung's SmartThings technology already is the world's largest and most open IoT platform, a complete home customization solution that allows consumers to connect and program automatic behaviors for both Samsung and non-Samsung connected devices and sensors in their homes and to monitor and operate them remotely for convenience and peace of mind, using a personally customizable app on any device.⁴

In addition, Samsung's philosophy includes ensuring that security and privacy protections are incorporated at the design stage. We believe that the IoT sector will be most rapidly embraced by consumers if they are provided with real choices regarding the appropriate balance between security and usability. With this balance in mind, Samsung developed ARTIK, a hardware-based secured platform – also open – that delivers interoperability between IoT devices and apps.⁵ ARTIK enables secure device registration that securely connects devices to

³ See Samsung, [Interview] CEO BK Yoon Emphasizes the 'Unimaginable Value' of the IoT SmartThings (Jan. 11, 2016), <https://news.samsung.com/global/interview-ceo-bk-yoon-emphasizes-the-unimaginable-value-of-the-iot> (discussing Samsung's "open platform strategy").

⁴ See generally Samsung SmartThings, <http://www.samsung.com/us/smart-home> (last visited May 25, 2016).

⁵ See Samsung, Press Release, Samsung Advances Open IoT Ecosystem with New Partner Program and Commercial Availability of the SAMSUNG ARTIK™ Platform (Feb. 19, 2016), <https://news.samsung.com/global/samsung-advances-open-iot-ecosystem-with-new-partner-program-and-commercial-availability-of-the-samsung-artik-platform>.

the cloud using TLS, secure element, and certificates issued by a trusted certificate authority.⁶ Every device, app, and user interaction is secured with open Internet standards-based authentication and authorization, and ARTIK protects data privacy with built-in identity and permissions management.⁷

Challenges and Guiding Principles. The Request describes concerns associated with the IoT, such as potential health, safety, and security issues arising from the connection of cars and medical devices to the Internet; privacy and cybersecurity; and the possibility of a “global patchwork of approaches to IoT.”⁸ Given the government’s significant interests in protecting consumers, stimulating the economy, promoting civic engagement, and ensuring public safety, these concerns are understandable. However, prescriptive regulation is not the answer to such challenges. Instead, the U.S. should permit IoT ecosystems to be developed by technology companies in an unregulated environment – or, to be more precise, an environment without additional IoT-specific regulations layered atop the regulatory safeguards that already protect consumers when they use Internet-connected products and services. This market-based approach worked well with respect to the Internet during its development; as a result, services and applications in the Internet ecosystem saw rapid innovation and explosive growth, and the U.S. technology sector enjoyed a global leadership role. This path to U.S. global technology leadership can and should be repeated in the IoT sector.

Refraining from prescriptive regulation does not mean taking a hands-off approach. Samsung supports the Department’s efforts to draft a government-wide path forward in the green paper, ensuring that policymakers have the information they need and take the actions necessary to promote IoT innovation and growth. To date, sector-specific regulation has caused fragmentation that threatens development of the IoT, as it impedes the interoperability of devices and the cross-platform aggregation of data, which lie at the heart of IoT’s transformative potential. As the Request notes, “thus far no U.S. government agency is taking a holistic, ecosystem-wide view that identifies opportunities and assesses risks across the digital economy.”⁹ The green paper can provide critical guidance in this regard, by identifying mechanisms for interagency coordination in order to avoid duplicative or contradictory efforts.

The government can and should also play an important role in fostering IoT by driving demand, partnering with the private sector on consensus/voluntary standards, and ensuring the availability of adequate spectrum resources. Federal, state, and local governments can serve as early adopters of IoT to improve government services, both as sponsors of pilot programs and in full-scale implementations. This will provide efficiencies to government while jumpstarting IoT demand. Governments at all levels can harness the IoT to establish more accurate baseline measurements, design programs to the baseline, implement, and then measure solutions – increasing efficiency and reducing the costs of good government. In addition, the Department

⁶ Samsung, Press Release, Samsung Announces Commercially Available IoT Cloud Platform to Deliver Interoperability Between Devices and Applications (Apr. 27, 2016), <https://news.samsung.com/global/samsung-announces-commercially-available-iot-cloud-platform-to-deliver-interoperability-between-devices-and-applications>.

⁷ *Id.*

⁸ Request at 19,957.

⁹ *Id.*

and the Federal Communications Commission should ensure that sufficient additional licensed and unlicensed high-speed and low-data rate spectrum allocations are available to support IoT growth.¹⁰ These government actions can lead to scale, innovation, increased safety and security, improved services, enhanced business productivity, and lower costs to taxpayers. The green paper also should note that no IoT-specific enforcement mechanisms are necessary (for example, to ensure that consumers' privacy and data security are protected). The privacy and security issues raised by the IoT are the same privacy and security issues that arise with any online service or communication, and these can be addressed through existing governmental authority.¹¹

Samsung recognizes that the green paper likely will address a number of policy issues, both discrete and interrelated. In considering these issues, as well as in constructing government-wide guidance with respect to new policy issues that may arise in the future, Samsung proposes that the Department outline certain overarching framing principles in its green paper. Policymakers throughout the federal government can then use these principles as touchstones for policy decisions, viewing any potential action through the lens of these principles to ensure the success of the IoT sector and, in turn, the U.S. economy. Specifically, Samsung recommends the following three guiding principles:

Openness. First, the IoT must be based on open platforms that will promote a competitive environment to foster innovation, scale, affordability, and improved functionality. Open IoT platforms that are voluntarily developed and adopted by industry are best for the IoT sector and for consumers: A rising tide will lift all boats and result in a more robust connected world. As a leader in IoT technology, Samsung is committed to promoting an open IoT ecosystem. All IoT companies should refrain from creating or promoting walled gardens, and the government should not adopt technology mandates that would pick winners and losers by forcing or limiting any particular platform.

Collaboration. The IoT by its nature is connected and interwoven, and it is essential that players in the IoT ecosystem similarly work together. Collaboration will benefit all participants in the IoT market and, ultimately, consumers. One example of necessary collaboration is the voluntary, consensus development of open standards that will drive open and interoperable technologies. The government can foster such collaboration without adopting regulations that could suppress innovation or impair the market's ability to respond to consumer preferences. For example, the Administration's Smart Cities Initiative is funding basic research and

¹⁰ For example, the FCC should proceed with its proposal to adopt rules in its millimeter wave proceeding. *Use of Spectrum Bands Above 24 GHz For Mobile Radio Services*, Notice of Proposed Rulemaking, 30 FCC Rcd 11878 (2015) (proposing to allow further commercial use of several spectrum bands between 24 GHz and 71 GHz).

¹¹ FTC Staff Report, *Internet of Things: Privacy & Security in a Connected World*, at 48-49 (Jan. 2015) ("Staff does not believe that the privacy and security risks, though real, need to be addressed through IoT-specific legislation at this time. Staff agrees with those commenters who stated that there is great potential for innovation in this area, and that legislation aimed specifically at the IoT at this stage would be premature."), <https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-staff-report-november-2013-workshop-entitled-internet-things-privacy/150127iotrpt.pdf>.

innovative pilot programs.¹² The government similarly could convene industry to develop codes of good practice and other self-regulatory frameworks. Another example is public-private partnerships, such as the NIST cybersecurity framework.¹³ Public-private collaboration efforts can play an important role in educating consumers about the potential benefits of IoT, which will encourage early adoption, and NIST could similarly create a clearinghouse with respect to IoT security. Public-private partnerships need not be solely at the federal level; for example, municipal governments could work with traffic app developers to improve response time on road repairs.

Human-Centered. Finally, the government should never forget that the IoT is human-centered and that IoT development thus should focus on people and how to improve their day-to-day lives. The IoT has an unparalleled potential for solving human challenges and promoting efficiency; the government can and should work *with* these goals, not against them. Policymakers, for example, should prioritize public safety IoT applications and not stand in their way. Government also can promote the IoT simply by using it – incorporating the IoT into government administration in ways that benefit citizens will help foster scale and promote broader adoption. Government can ensure there is sufficient spectrum to fuel the IoT and fund critical research and development activities. Most importantly, through the Department’s green paper, the government can course correct for its fragmentary approach to date and ensure a harmonized, holistic approach across the IoT ecosystem.

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Samsung appreciates the Department’s leadership on the IoT and looks forward to further dialogue and collaboration. I will follow up after the June 21 conference, but please do not hesitate to contact me in the meantime if Samsung can be of any assistance.

Respectfully submitted,

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¹² Press Release, The White House, *FACT SHEET: Administration Announces New “Smart Cities” Initiative to Help Communities Tackle Local Challenges and Improve City Services* (Sept. 14, 2015) (announcing that the U.S. Government will invest over \$160 million in federal research and leverage more than 25 new technology collaborations), <https://www.whitehouse.gov/the-press-office/2015/09/14/fact-sheet-administration-announces-new-smart-cities-initiative-help>.

¹³ Framework for Improving Critical Infrastructure Cybersecurity, Version 1.0, NIST, 1 (Feb. 12, 2014), <http://www.nist.gov/cyberframework/upload/cybersecurity-framework-021214.pdf>.