House Committee on Judiciary

Subcommittee on Courts, Intellectual Property, and the Internet

# Hearing on the Internet of Things

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Statement of Gary Shapiro, CEO and president,

Consumer Electronics Association

Thank you, Chairman Issa, Ranking Member Nadler, Chairman Goodlatte, Ranking Member Conyers, and members of the Subcommittee, for inviting me to testify today on the Internet of Things.

I am Gary Shapiro, CEO and president of the Consumer Electronics Association (CEA).

CEA is the trade association representing more than 2,000 member companies who comprise the $285 billion U.S. consumer technology industry.

We also produce the annual CES, the world's gathering place for the global technology community held each January in Las Vegas, where more than 900 exhibitors displayed IoT devices — a hint of the innovation and imagination to come.

Having a front seat at the latest innovation has allowed me to see the unimaginable. And it isn't far from us.

Imagine a "smart" Capitol Hill, where smart parking, driverless cars, and interactive dining and fitness areas make doing business much easier and better.

It is 5:30 a.m., Congresswoman Smith checks into the Rayburn House gym via biometrics. Before she starts her workout, she records her health vitals at an intelligent-equipment station, which develops today's personalized workout based on past performances.

Afterward, she stops by the Longworth House Office Building cafeteria to grab a cup of coffee from a smart coffee machine. The machine tracks the daily consumption of users, making sure that by the time the congresswoman arrives, her favorite coffee blend is available.

Midday, she jumps into her driverless car to welcome veterans as part of the Honor Flight program.

As the lawmaker returns to Capitol Hill for votes, she opens her smart-thermostat app to begin cooling down her office.

While this is a fictional scenario, it is only a matter of time until it is everywhere. IoT is so big at the CES that we can no longer section it off– it is everywhere!

Some argue our entire show floor constituted the IoT with almost every product connected to the Internet and many able to sense, report on and respond to their surrounding environment.

Over the past several years, we've seen an explosion of connected devices in the market, as consumers embrace the positive impact of these devices on their daily lives.

From wearables like smart watches and fitness trackers, to connected thermostats and automated lights, from household appliances to connected cars, consumers are using the IoT to improve their quality of life – to increase efficiency, improve safety and security, and make faster and better decision-making.

According to a recent study from Juniper Research, 38.5 billion “things” will be connected to the Internet by 2020.

A January 2015 report from Mind Commerce indicates that the global market for connected consumer devices will reach $88 billion by 2020.

A significant and growing category within the IoT is connected home technologies.

A recent CEA study conducted with the research firm Parks and Associates predicts smart thermostats, door locks, smoke detectors and light switches will expand from 20.7 million units in 2014 to 35.9 million units by 2017.  These are eye-popping numbers.

CEA also predicts that the U.S. market for Connected Home Technologies will reach $967 million in 2015, jumping 32 percent over last year. This segment will grow to nearly $1.1 billion in 2016.

Home automation systems enable consumers to manage their security systems, turn on appliances, and manage heating, cooling and lighting systems, all from a smartphone.

Smart systems not only provide safety and convenience for a homeowner, but they also increase a home's efficiency and reduce energy consumption and costs.

Many of these devices also learn room usage patterns over time allowing them to adjust temperatures automatically to maximize efficiency when no-one is home.

Today, consumers can purchase refrigerators that can count and display the number of times the door is opened and alert homeowners via an app when the door is ajar - all you late night snackers are hereby warned.

For those like me with limited time, there are now washers and dryers that allow consumers to start their laundry on the way home from work …or the airport.

At my home in Detroit, my family has a washer dryer that's connected to the Internet. We have programmed our window shades to rise based on our sleep patterns, and shut accordingly to maximize our home's heating-and-cooling efficiency.

Our thermostats are also connected to our house fans to minimize energy use.

We have smart locks with codes we can assign to our house guests – beats keeping the door key under the mat – and safety cameras we also use to figure out where we put things we lost.

These connected appliances offer consumers convenience, information to help reduce energy use and costs, and additional control over the appliances in their homes.

While these innovations will save time and money and reduce stress, they provide an even greater opportunity to care for our aging population, as well as the 56 million people with disabilities in the US.

Assistive technology for people with disabilities has previously been customized and prohibitively expensive. The same connected home products consumers are purchasing today provide novel interfaces, like voice control, that are immediately beneficial to people with reduced mobility and dexterity.

Without paying tens of thousands of dollars for a custom home automation system, smoke detectors can now be connected to lighting controls, so lights can flash to alert a deaf or hearing impaired person and light the whole house for safe exit.

The amazing conveniences of today's low-cost connected home products are life-changing and sustaining for a growing population.

I am especially excited about how the IoT will help us care for our older loved ones in years to come.

As our population advances in years, and the number of caregivers shrinks, smart home devices enable seniors to live independently and comfortably at home, retaining their quality of life into their golden years.

Connected devices can remind seniors to take their medication, refill their prescriptions, and help prevent accidental over- or underdoses.

Already, a senior who wakes in the middle of the night can adjust her lighting, confirm the doors and windows are closed and locked (or lock them if they aren't), and adjust the thermostat from the palm of her hand – without the risk of getting up and falling in a dark house.

Caregivers gain peace of mind using systems that allow them, regardless of their location in the country or world, to know that their loved ones are safe and secure.

They can confirm their loved ones are active, they're eating properly and taking their medicines, and their homes are safe and secure, all while allowing the seniors to control the level of information shared to respect their privacy.

The health and quality of life impacts of the IoT will be a game changer for our nation's seniors and for those that care for them.

In fact the IoT is coming quickly, but it does face impediments.

As with so much other innovation, spectrum is the lifeblood of the Internet of Things.  Wireless spectrum is the platform on which most of these new devices connect.

The future benefits of the Internet of Things depend directly on our ability to free up additional licensed and unlicensed spectrum.

Disruptive innovation brings excitement and opportunity, and requires us to consider new challenges. Government is raising legitimate concerns about safety, security and privacy.

Healthcare professionals are raising interesting questions about how they are compensated in their existing health care regimens for monitoring remote patient data.

Questions are being asked as to who owns data from these devices.

As the IoT grows, manufacturers and service providers will continue to focus on making good decisions about privacy and the security of information that devices collect and share.

Consumer adoption hinges on building trust.  Devices that do not meet consumer privacy and security expectations will fail.

CEA and our members are exploring these issues and how best to ensure consumer privacy and security, while enabling new technologies to develop and flourish.

We believe that industry-driven solutions are the best way to promote innovation while protecting consumers.

The IoT is also creating new jobs.

We now face a shortage of the needed experts and data analysts who can help take this massive amount of information and turn it into useful and actionable results.

The United States simply doesn’t have enough high-skilled workers with the technical expertise necessary to fill all of the high-tech jobs our sector is now creating.

The tech industry relies on high-skilled immigrants here on H-1B visas — many educated at U.S. colleges and universities — to fill this void.

Of the 172,000 applications for H-1B visas in 2014, fewer than half were granted, the U.S. Chamber of Commerce reported in April. That’s a direct result of a federal cap on the number of H-1Bs issued.

Passing high-skilled immigration-visa reform would go a long way toward solving the high-skilled worker shortfall.

We are just beginning to understand the benefits and challenges of the IoT.  In this dynamic and rapidly changing environment, governments should exercise regulatory restraint.

Overly prescriptive mandates will stymie growth and become outdated. If governments must act, then such actions should be narrowly tailored to address tangible harms without creating roadblocks for future innovation.

Government should not attempt to regulate based on hypothetical concerns, but should proceed slowly with targeted solutions to actual problems.

We are already experiencing the benefits of a connected world, as connected technologies and services improve the quality of life, health and safety of consumers.

CEA is proud to represent the companies whose products and services comprise the Internet of Things.

We look forward to working with the Committee to ensure that government policies and regulations support growth and innovation in this dynamic sector.

Thank you, and I look forward to answering your questions.