The Internet of Things In Brief

WHAT YOU NEED TO KNOW

Quick tips & facts about the Internet of Things from GovLoop

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Executive Summary

What is the Internet of Things? It's a question many in the public sector are asking today.

Simply put, IoT is a series of devices connected to one another via the Internet — and these devices can communicate with you through the information you enter or sensors you wear and operate. Most of it is automated, meaning these interactions can happen without your having to do anything.

This GovLoop In Brief is meant to help you better understand these key issues by taking your six most-asked questions about the Internet of Things and answering them throughout the guide.

What is the definition of the Internet of Things?

ANSWER:

The definition can vary, but a 2014 Pew Research Center report defined the Internet of Things (IoT) as a catchall phrase for **the array of devices, appliances, vehicles, wearable material and sensor-laden parts of the environment that connect to the Internet and to one another and feed data back and forth automatically.**

$9B
Federal spending on IoT jumped 20 percent to almost $9 billion in FY15.

$11T
According to estimates by the McKinsey Global Institute, the IoT will have a total economic impact of up to $11 trillion by 2025.
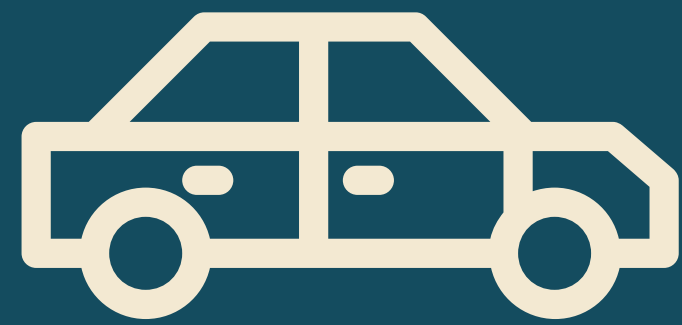
56%
Sensor spending has nearly tripled from FY11 to FY15, growing 56% in the last year alone.

50B
In 2008, there were already more Internet-connected objects than people. By 2020, that number is expected to grow to more than 50 billion objects, according to Cisco.

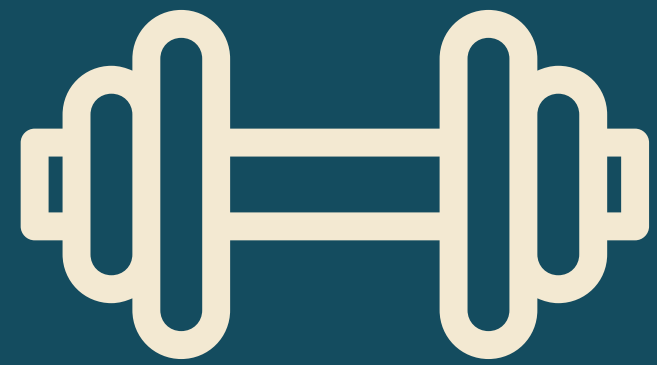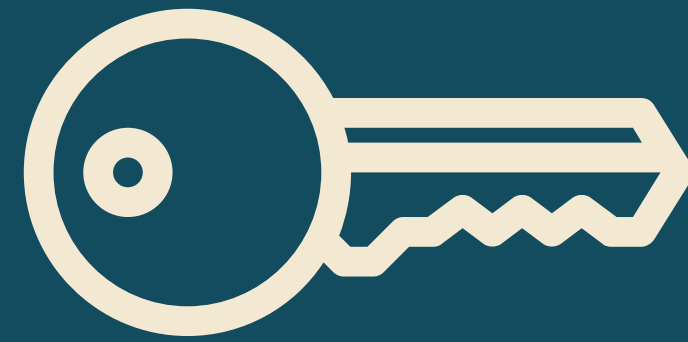# How could IoT impact my life on a day-to-day basis?

TRANSPORTATION
Thanks to LTE-enabled cars, you could now have more access to real-time traffic information and real-time vehicle diagnostics from your own car.

HEALTH & EXERCISE
Wearable technology like smartwatches and wristbands enable you to keep track of your personalized fitness data.

HOME
Security systems are tapping more into IoT to help you monitor your home from afar.

WORK
IoT is helping government provide better customer service experiences by tracking individual behavior and delivering individualized services.

ENVIRONMENT
Through aggregated regional and metropolitan data, IoT technologies now have capabilities to monitor the air quality outside of your home or office.

What do I need to know about security & safety of the Internet of Things?

ANSWER:

Answer: A recent Hewlett Packard report revealed that 70 percent of the most commonly used IoT devices, like phones and tablets, **contain serious vulnerabilities.**
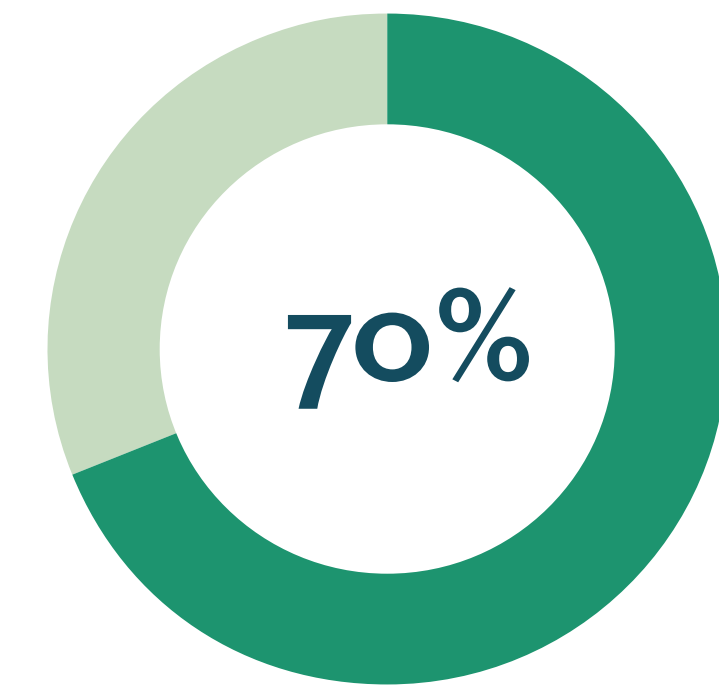
That's why it's important to consider security, privacy and safety when it comes to the Internet of Things. Federal, state and local government employees increasingly need to use more devices, all of which connect with secure agency networks. This use of devices means that **the device itself has to be secured along with the network.**

To pair cybersecurity and IoT, there also **has to be a change of overall mentality** in federal agencies. Much of that different thinking involves working on shorter cybersecurity sprints that can evaluate critical holes in networks and devices, then patching them quickly enough to allow employees to keep working effectively.

70%

"A couple of years ago, a lot of projects were just ideas, and the focus was on whether they were even possible. Today, nobody really asks whether IoT and smart cities are feasible. We know that it's possible. Now, it's more about how can we deploy this."

Sokwoo Rhee,
Assistant Director of Cyber-Physical Systems, NIST

How is the Internet of Things being regulated, if at all?

ANSWER:

In 2015, the Federal Trade Commission (FTC) published a report on privacy, security and IoT. Here are their top three recommendations:

DATA SECURITY
IoT companies should ensure that their devices are physically secure.

DATA MINIMIZATION
Companies should only collect the necessary personal data from citizens.

NOTICE & CHOICE
Citizens should have the opportunity to choose what personal data is shared, and they should be notified if there is a data breach.

Who are the organizations involved with IoT I should know?

NATIONAL TELECOMMUNICATIONS & INFORMATION ADMINISTRATION (NTIA)

The NTIA has an Internet Policy Task Force. It highlights events and blogs related to IoT, and the administration will produce a paper based on public comments about what the government's role in IoT should be.

FEDERAL TRADE COMMISSION (FTC)

Through its protection of consumers, FTC has a direct role in regulating how IoT companies can deal with citizens. Agencies can use its 2015 report for general security standards for IoT.

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

NIST may call IoT by a different name — cyber-physical systems (CPS) — but it's shaping the landscape in several ways. It has a working group to prepare a CPS framework with definitions and guidance.

Through its Global City Teams Challenge, NIST and other partners are working to help cities improve life through IoT and provide models for other cities.

How should I get started at my agency with the Internet of Things?

FIGURE OUT YOUR PROBLEM FIRST – THEN APPLY IoT.

First, go through your agency and think: If you could continuously measure wsomething that was core to your agency's mission, what would that be? How would that allow you to provide your services? How would it solve problems for your citizens? After you've figured that out, seek out IoT solutions — not the other way around.

DON'T WAIT FOR A PERFECTLY EXECUTED IoT.

What if Henry Ford had said, 'I'm going to build a car. But I'm going to wait till we have highways. I'm going to wait till we have gas stations. I'm going to wait till we have an auto insurance industry.' It's the same with IoT. The environment is not perfect, but we need to start now, fail fast, and learn.

USE PROTOTYPES.

Don't get sold on a product. Look to pilot and prototype. Get some devices quickly, test them out, figure out how it would work, and then move forward in that iterative fashion.

BE AGILE IN ITS DEVELOPMENT.

Take an agile, iterative approach. By doing this you can shift gears, and you can learn what works without having invested millions of dollars into something.

The Future of the Internet of Things

Whether we're ready or not, the Internet of Things is becoming a reality. A McKinsey study estimates that the economic impact of IoT will be more than $6 trillion in 2025. From selling fitness-tracking consumer devices to building smart sensors in retail stores, the private sector is already actively building IoT and leveraging it to optimize their businesses.

What's been made clear is that governments are starting to move from the sidelines into IoT. And as we've seen from the facts in this brief, IoT will have an impact on every vertical within the public sector, including training, transportation, technology and healthcare, just to name a few.

With some efforts in innovation, problem solving and creative uses of technology, the public sector can truly start to take advantage of IoT to create efficiencies and cost savings and to help citizens live better lives. We can't wait to see what you'll do with it.