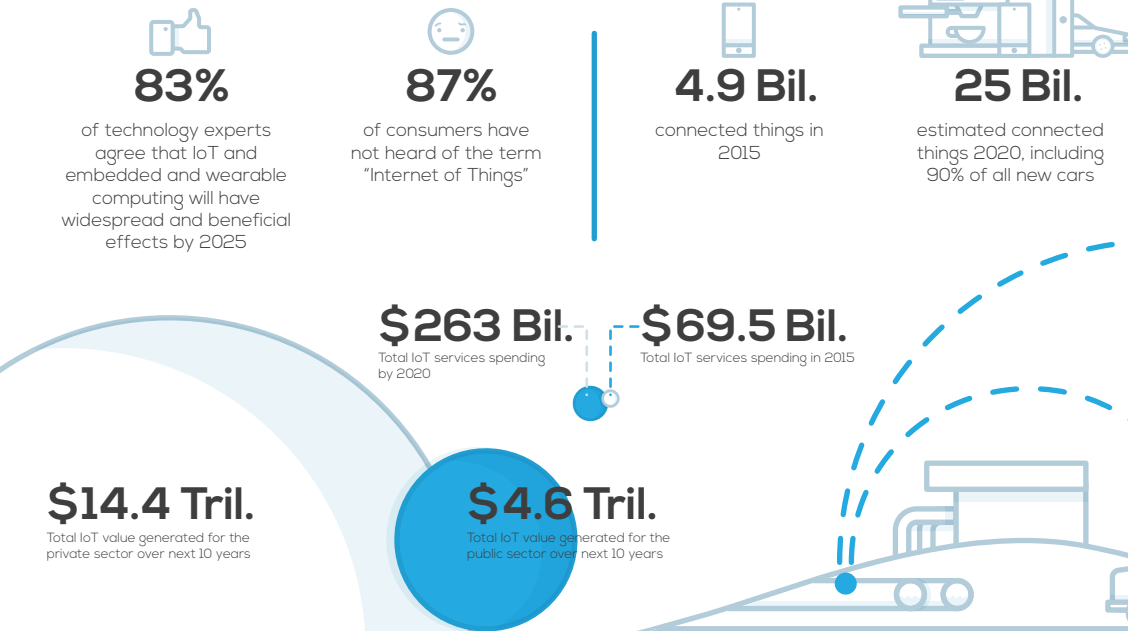# HOW THE INTERNET OF THINGS WORKS

Some of you out there may be wondering: What is the Internet of Things? Simply put, **IoT is a series of devices connected to one another via the Internet** — and these devices can talk to you, via the information you enter or sensors that you wear and operate. And most of it is automated, meaning these interactions can happen without you even having to do anything.

83%
of technology experts agree that IoT and embedded and wearable computing will have widespread and beneficial effects by 2025

87%
of consumers have not heard of the term "Internet of Things"

4.9 Bil.
connected things in 2015

25 Bil.
estimated connected things 2020, including 90% of all new cars

$263 Bil.
Total IoT services spending by 2020

$69.5 Bil.
Total IoT services spending in 2015

$14.4 Tril.
Total IoT value generated for the private sector over next 10 years

$4.6 Tril.
Total IoT value generated for the public sector over next 10 years

Public Works

What: Acoustic sensors on aging pipes

Where: Las Vegas, NV

How it works: The monitoring platform combines proven acoustic leak detection technology with wireless connectivity and visual end-user dashboards to create a cost-effective monitoring solution.

The acoustic signal of the leak clearly differentiates itself from the normal acoustic noises with the water main. Then the Las Vegas Valley Water District uses this information to enable utilities to become proactive, predictive and prescriptive.

Healthcare

What: Connecting doctors and patients with mobile devices

Where: Dept. of Veterans Affairs

How it works: A prototype for a flu shot alert system would prompt people entering their local drug stores to get a flu shot. As the individual walks into the store, through geo-location you can have a mobile device prompt you that you are at a VA-approved location that can give you a flu shot. It's simple, cost-effective and convenient, which means more people will take the right steps to stay healthy.

Transportation

What: Public transit tracking with sensors and apps

Where: Nashville, TN

How it works: Nashville MTA installed sensors on its fleet of about 170 public buses. The system of sensors provides MTA with real-time vehicle location information and data showing about how far ahead of or behind schedule buses are running. They hope this will increase ridership and encourage those who never use transit to get on board, thereby reducing congestion.

Emergency Management

What: Real-time wildfire mapping using satellite imagery and drones

Where: US Forest Service, NASA

How it works: The Forest Service administrators pursued a partnership with NASA to use the space agency's real-time imagery to detect where fires were and how quickly they spread. This collaboration evolved into an ongoing project called the Active Fire Mapping Program. Now, the program maps wildfire incidents across the United States and Canada in real time.

HOW TO START USING IoT AT YOUR AGENCY

FIGURE OUT YOUR PROBLEM FIRST – THEN APPLY IoT

First, go through your agency and think: If you could continuously measure something 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.

SOURCES:
http://www.pewinternet.org/2014/05/14/internet-of-things/
http://www.gartner.com/newsroom/id/2905717
http://www.acquitygroup.com/docs/default-source/Whitepapers/acquitygroup-2014iotstudy.pdf?sfvrsn=0
http://www.cisco.com/c/dam/en/us/solutions/collateral/industry-solutions/white-paper-ioe-public-sector.pdf