

# 10 Things

## You Should Know About the Internet of Everything

### 1. The Difference Between IoT and IoE

#### IoT (Internet of Things)

Consists of networks of sensors attached to objects and communication devices, providing data that can be analyzed and used to initiate automated actions. It is one of four elements of the IoE.

#### IOE (Internet of Everything)

The smart networks that are required to support all the data these objects generate and transmit. The networked connection of people, processes, data and things.

### 2. The Elements that Make Up the Internet of Everything



**People:** People connect through smartphones, PCs and tablets and utilize networks including social networks.



**Processes:** Evolving technologies needed to manage and automate the accumulation, analysis and communication of data. How people, data and things interact with each other to deliver societal benefits and economic value.



**Things:** Physical devices and objects that are capable of connecting to the network and sharing information.



**Data:** Rather than just reporting raw data, connected things will send higher-level information and insights back to machines, computers and people to help make better decisions.

### 3. The Year It All Started

IoT is the point in time when more things were connected to the Internet than people, which occurred between 2008 and 2009.

	2003	2010	2015	2020
World Population	6.3 billion	6.8 billion	7.2 billion	7.6 billion
Connected Devices	500 million	12.5 billion	25 billion	50 billion
Devices/Person	0.08	1.84	3.47	6.58

More devices than people between 2008 and 2009

### 4. The Ways to Connect



Human to Human



Human to Device



Device to Device

### 5. Challenges and Barriers

#### Lack of Shared Infrastructure

The required infrastructure must be developed and there are few open source platforms in the Internet of Things.

#### Data Storage

Massive amounts of data have and will be created and there has been little discussion around the subject of where enterprises will store this data.

#### Inconsistent Network Availability

IoT applications will collect data that come from remote devices and therefore IoT applications will require technologies that can detect the absence of connectivity and handle interruptions with ease.

#### Privacy

Remote sensors and monitoring cause a heightened sensitivity to controlling access and ownership of data.

#### Lack of Common Standards

Multiple standards evolve based on different requirements determined by device class, power requirements, capabilities and uses. With so many players involved in IoT, multiple opportunities are created for these players to influence standards.

#### Security

As more devices are connected together, more touch points become available and potential new security threats are created. There is no specific security framework that exists yet and smaller companies do not have the time or resources to implement security models.

#### Deployment of IPv6

The world ran out of IPv4 addresses in 2010. The billions of new sensors will require unique IP addresses. IPv6 makes the management of networks easier due to auto configuration capabilities and improved security features.

### 6. Top Concerns Companies Have Around IoT

Lack of employee skills and cross-functional knowledge.

Lack of senior management knowledge and commitment.

Products and services that don't have an obvious IoT element to them.

Immaturity of industry standards around IoT.

High costs of required investment in IoT infrastructure.

### 7. Business Opportunities

**Reduced Costs** through asset utilization

**Increased Innovation** through reduced time to market

**Employee Productivity** that increases labor efficiencies

**New Business Models** for increasing response to customer needs

**Global Visibility** by tracking effectiveness of the supply chain and logistics

**Real Time Information** about processes and products to improve operational efficiency

**30%**

of business leaders feel that the IoT will unlock new revenue opportunities

**29%**

of business leaders believe that the IoT will inspire new working practices

**23%**

of business leaders believe the IoT will change the model of how companies operate

### 8. Predictions

**25 billion** devices connected to the Internet by **2015**.

**50 billion** devices connected by **2020**.

IoT is rapidly growing from **2 billion objects in 2006** to **200 billion by 2020**.

**By 2019**, revenue from IoT devices and services will reach **\$600 billion**.

### 9. Market Size



The worldwide IoT solutions market will grow from \$1.9 trillion in 2013 to \$7.1 trillion in 2020.

**\$1.9 trillion**

**2013**

**\$7.1 trillion**

**2020**

The Internet of Things will be the largest device market in the world. By 2019, it is estimated to double the size of the smartphone, PC, tablet, connected car and wearable market combined.

IoT MARKET > + + + +

### 10. Skills Needed for IoE



Business Intelligence



Information Security



UI/UX Design



Mobile Development



Hardware Engineering



Networking



Software Expertise

### Sources

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