








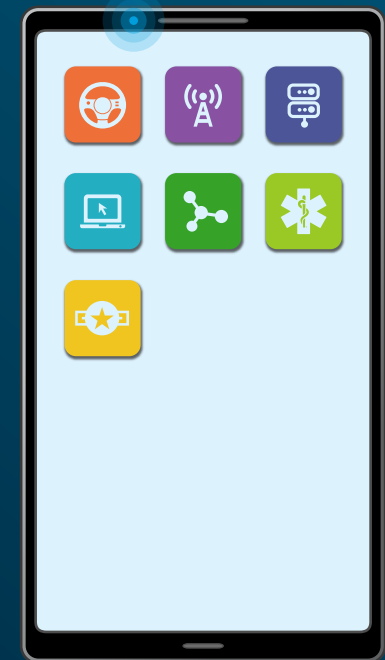
# Embracing The INTERNET OF THINGS

## CRITICAL INDUSTRIES

-  Automotive
-  Communications
-  Computers
-  Consumer
-  Industrial
-  Medical
-  Military & Aerospace

**Driven by the increasingly digital nature of social interactions, the potential for creative uses of internet-connected objects is virtually endless. It ranges from cellular- equipped tractors, monitoring fertilizer and seed distribution, to Bluetooth-enabled teddy bears with built-in medical sensors.**

As the internet connected devices reach a critical mass, companies from a wide-range of industries, must solidify strategies to mitigate risks and capitalize on the growing opportunities Internet of Things introduces.



## TOTAL CONNECTED DEVICES

INSTALLED by 2025

**17.3%**

Compound Annual Growth Rate  
2011-2025

**75,394,000,000**

Number of Devices

NEW SHIPMENTS in 2025

**12.7%**

Compound Annual Growth Rate  
2011-2025





**21,056,000,000**

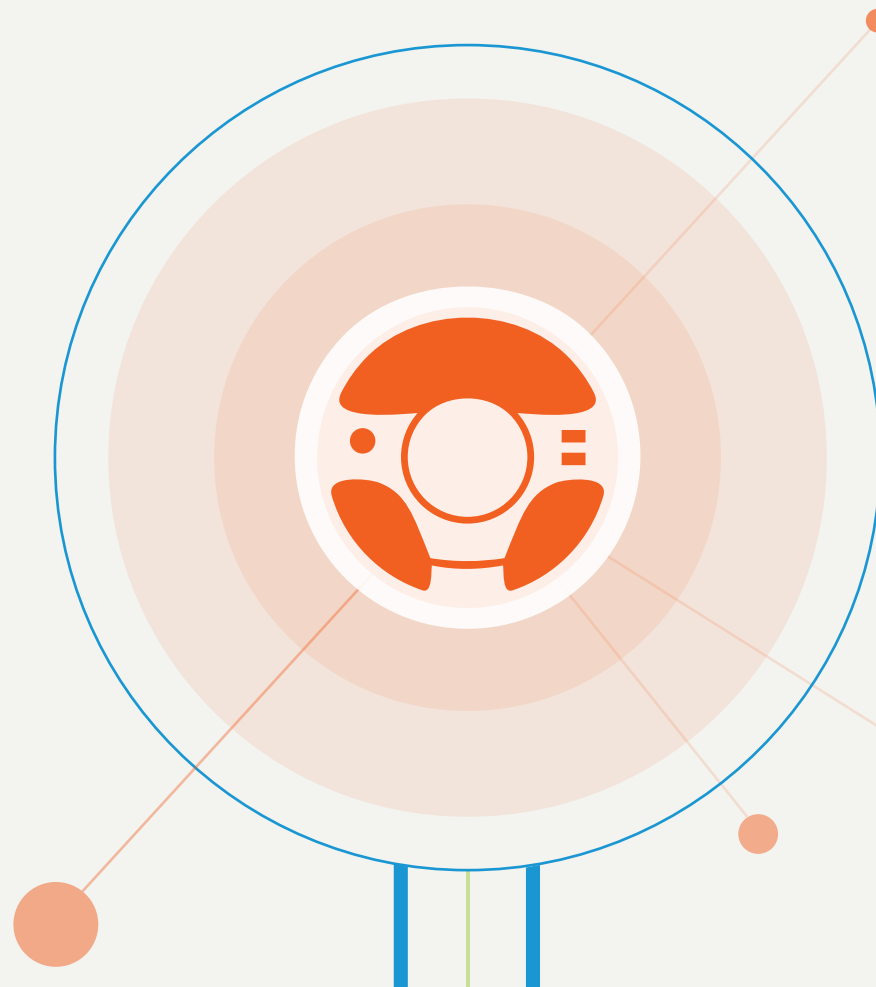
Number of Devices

Industry






# Automotive

## RISKS

-  Data Security Risks
-  Consumer Privacy and Vulnerability Concerns
-  Cost of Failure  
Disruptions of service and operational failures
-  Regulatory Mandates



## OPPORTUNITIES

-  Data Sharing  
Opens up new business models
-  Brand Loyalty  
New business models
-  Remote Diagnostics
-  Improved Safety  
Hazard and risk anticipation  
Driver/behavior modeling
-  New Market Opportunities  
Advertisement based on driving patterns and destination preferences  
Insurance based on driver/operator

### CONNECTED DEVICES

INSTALLED by 2025

NEW SHIPMENTS in 2025

**25.8%**

**1,172,000,000**

**22.3%**

**322,000,000**

Compound Annual Growth Rate  
2011-2025

Number of Devices




Compound Annual Growth Rate  
2011-2025

Number of Devices

Industry





# Communications

## RISKS

-  **Bandwidth Constraints**
-  **CAPEX Investment for Infrastructure**  
Pushing more data puts strain on networks
-  **Fragmentation**  
Mixture of technologies and operating systems



## OPPORTUNITIES

-  **Reinforce Smartphone as the Center of the Mobile Universe**
-  **Investment Opportunities**  
Apps development
-  **Infrastructure Growth**  
Continual upgrade to meet data demands  
Enables expansion of entire ecosystem
-  **Market Expansion**  
Semiconductor components  
Wireless service  
New vertical markets

### CONNECTED DEVICES

**INSTALLED by 2025**

**NEW SHIPMENTS in 2025**

**9.5%**

**11,192,000,000**

**4.8%**

**3,345,000,000**

Compound Annual Growth Rate  
2011-2025

Number of Devices

Compound Annual Growth Rate  
2011-2025

Number of Devices

Industry

# Consumer

## RISKS

- \$ Consumer Spend**  
Heavily dependent on disposable income
- 📊 Value Proposition**  
Does investment justify an upgrade?  
Difficult to quantify ROI
- 🛡️ Personal Data Security Risks**  
Data security and privacy  
As business models evolve, who will own the data?

## OPPORTUNITIES

- 📈 Market Potential**  
Shorter replacement cycle drives faster uptake of technology
- 🕒 Convenience**  
Preventative data and remote diagnostics
- 📣 New Market Opportunities**  
Advertisement based on consumer patterns and data shared from devices  
Disruption of traditional business models
- 👍 Brand loyalty**  
Improved customer experience  
Higher touch



### CONNECTED DEVICES

**INSTALLED by 2025**

**NEW SHIPMENTS in 2025**

**18.9%**

**24,573,000,000**

**10.1%**

**4,686,000,000**

Compound Annual Growth Rate  
2011-2025

Number of Devices




Compound Annual Growth Rate  
2011-2025

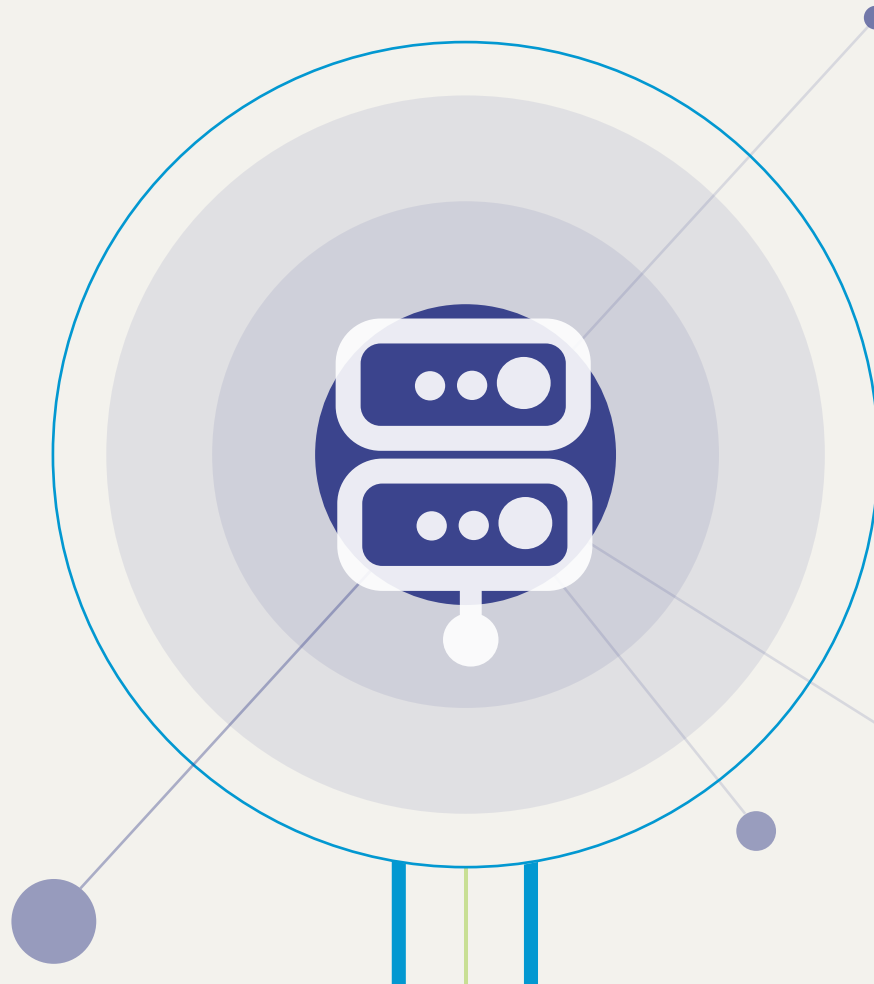
Number of Devices

Industry

# Information Technology

## RISKS

-  **Cybersecurity**
-  **Data Storage Capacity**  
is there enough?
-  **Cost Management**  
Low cost/free cloud computing – who will pay for the services?  
Network architecture - where is the information processed?



## OPPORTUNITIES

-  **Market Growth**  
Increased data generated drives demand for cloud capacity, servers and data centers  
Increase processing in edge devices
-  **Investment Opportunities**  
Analytics  
Applications  
Platform development
-  **Expansion in Non-Traditional IT Markets**  
Services  
Semiconductor components

### CONNECTED DEVICES

**INSTALLED by 2025**

**NEW SHIPMENTS in 2025**

**6.2%**

**3,213,000,000**

**5.5%**

**911,000,000**

Compound Annual Growth Rate  
2011-2025

Number of Devices






Compound Annual Growth Rate  
2011-2025

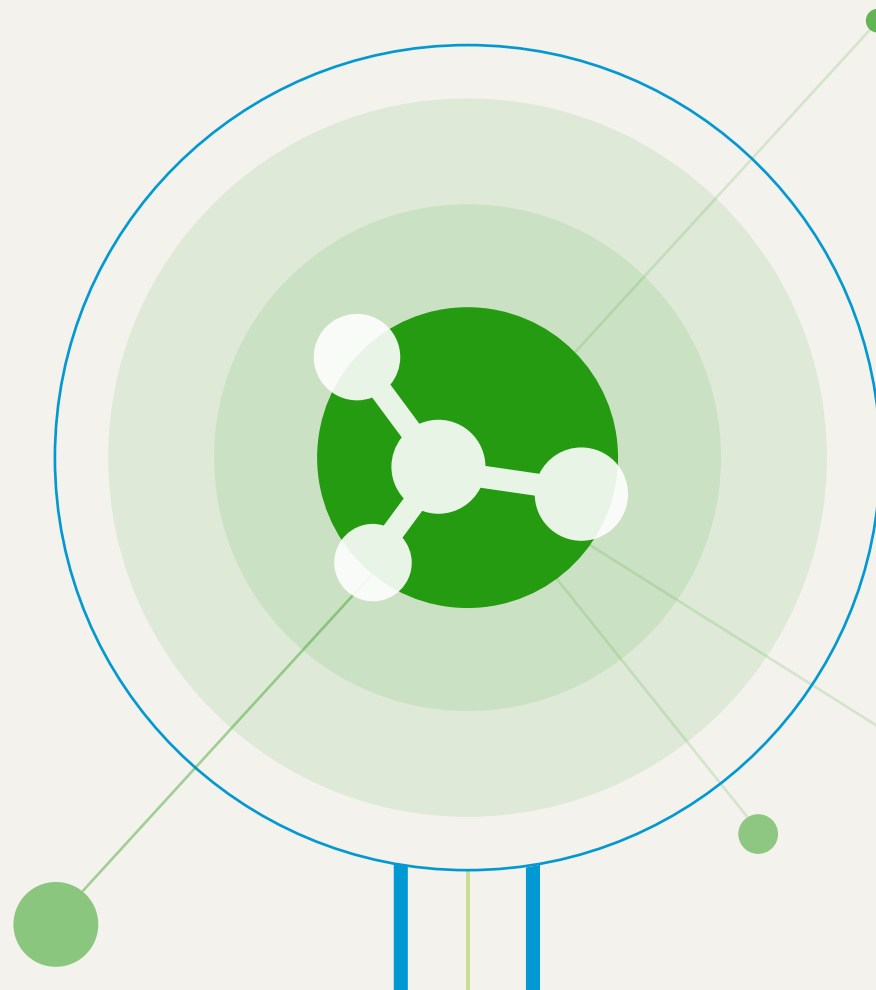
Number of Devices

Industry




# Industrial

## RISKS

-  **Longer Deployment and Higher Investment Costs**  
Long equipment replacement cycles drive the need for retrofitting
-  **Security Concerns**  
Intrusion, data breaches, cyberattacks  
Proprietary data sharing
-  **System Interoperability and Limitations**
-  **Behavioral Factors**  
Constant monitoring  
Efficiency vs. job security
-  **Retail Risks**



## OPPORTUNITIES

-  **Increased Productivity and Cost Optimization**  
Autonomous production  
Supply chain coordination  
Just-in-time production  
Dynamic asset management
-  **Inventory and Fulfilment Management**  
Real-time price adjustments for retail electronics  
Location-based inventory management
-  **Improved safety**  
Access control and surveillance  
Diagnostic and predictive maintenance  
Remote monitoring

### CONNECTED DEVICES

INSTALLED by 2025

NEW SHIPMENTS in 2025

**26.9%**

**34,147,000,000**

**25.2%**

**11,566,000,000**

Compound Annual Growth Rate  
2011-2025

Number of Devices





Compound Annual Growth Rate  
2011-2025

Number of Devices




Industry

# Medical

## RISKS

-  **Cost Management**
-  **Regulation**  
Dependent on country, business model and health care system
-  **Cost of Failure**  
Disruptions of service and operational failures
-  **Infrastructure and Service Availability**

## OPPORTUNITIES

-  **Telehealth**  
Increase accessibility and coverage  
Cost optimization
-  **Enhanced Care**  
Customized medical services  
Remote monitoring  
Real-time diagnostic
-  **Improved Patient Experience**  
Streamline access to records and transparency



### CONNECTED DEVICES

**INSTALLED by 2025**

**NEW SHIPMENTS in 2025**

# 18.5%

Compound Annual Growth Rate  
2011-2025

# 1,084,000,000

Number of Devices

# 16.2%

Compound Annual Growth Rate  
2011-2025

# 224,000,000

Number of Devices

Industry

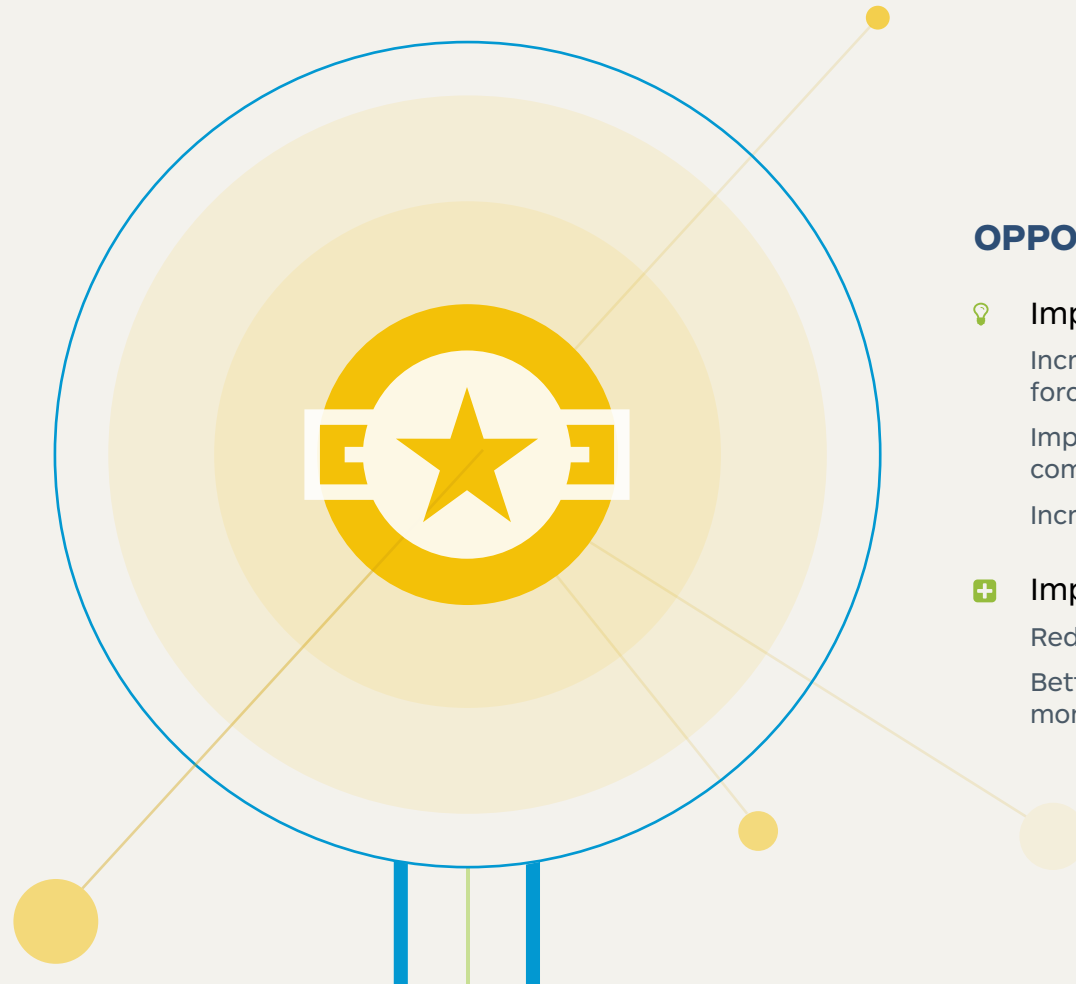
# Military & Aerospace

## RISKS

- Security Risks**
  - Data security
  - System vulnerability
- Cost of Failure**
  - Disruptions of service and operational failures

## OPPORTUNITIES

- Improved Intelligence**
  - Increase reach for military force
  - Improve telemetry for commercial airlines
  - Increase data collection
- Improved Safety**
  - Reduced risks e.g. drones
  - Better maintenance and monitoring



CONNECTED DEVICES

INSTALLED by 2025

NEW SHIPMENTS in 2025

17.6%

Compound Annual Growth Rate  
2011-2025

13,000,000

Number of Devices

5.3%

Compound Annual Growth Rate  
2011-2025

2,000,000

Number of Devices