

# *The Internet of Things and the Supply Chain: So What?*

IF YOU SUPPLY THE SUPPLY CHAIN,  
YOU BELONG AT MODEX.

The greatest supply chain show on earth.



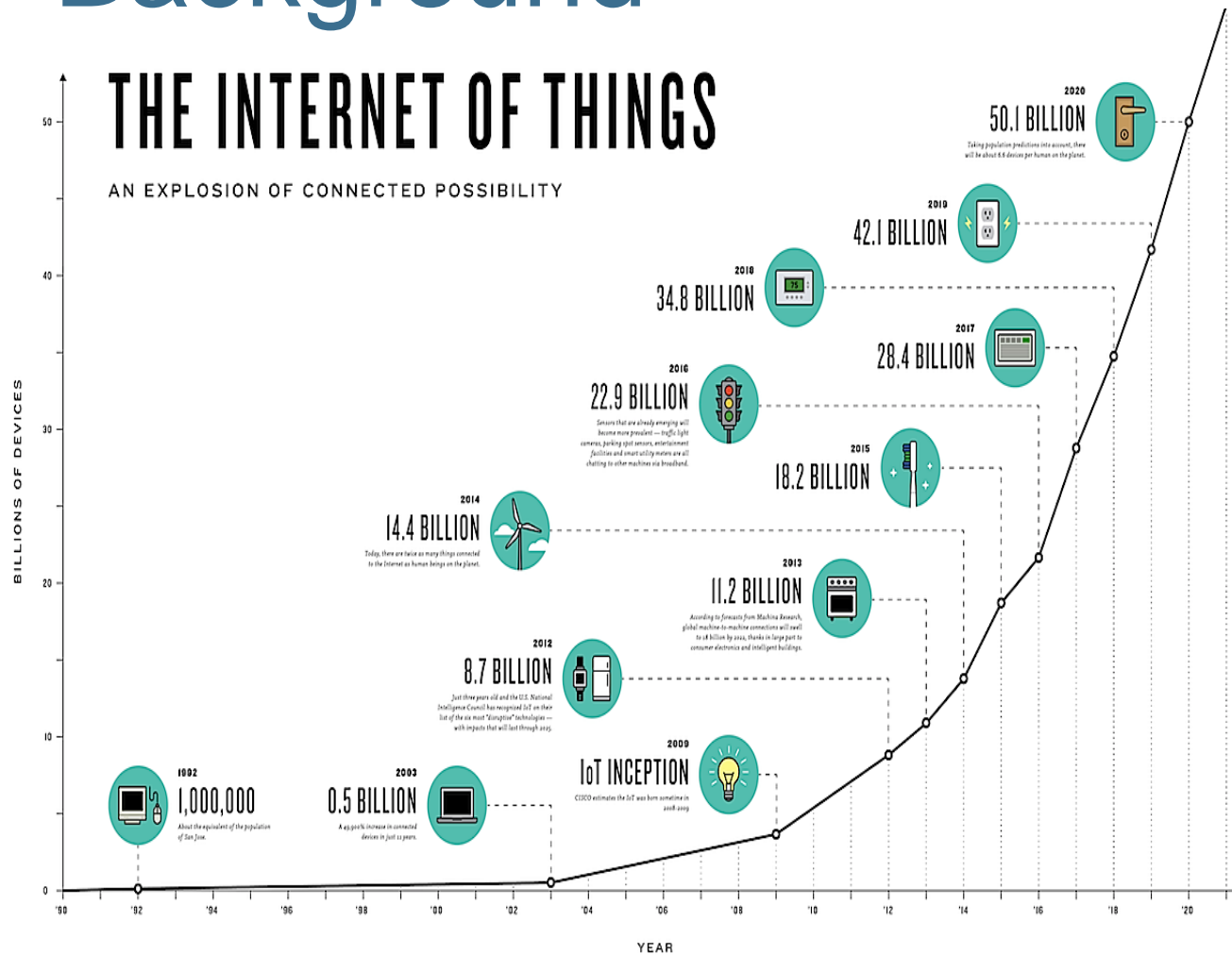
**Honeywell**

*Presented by:*

Speaker Name

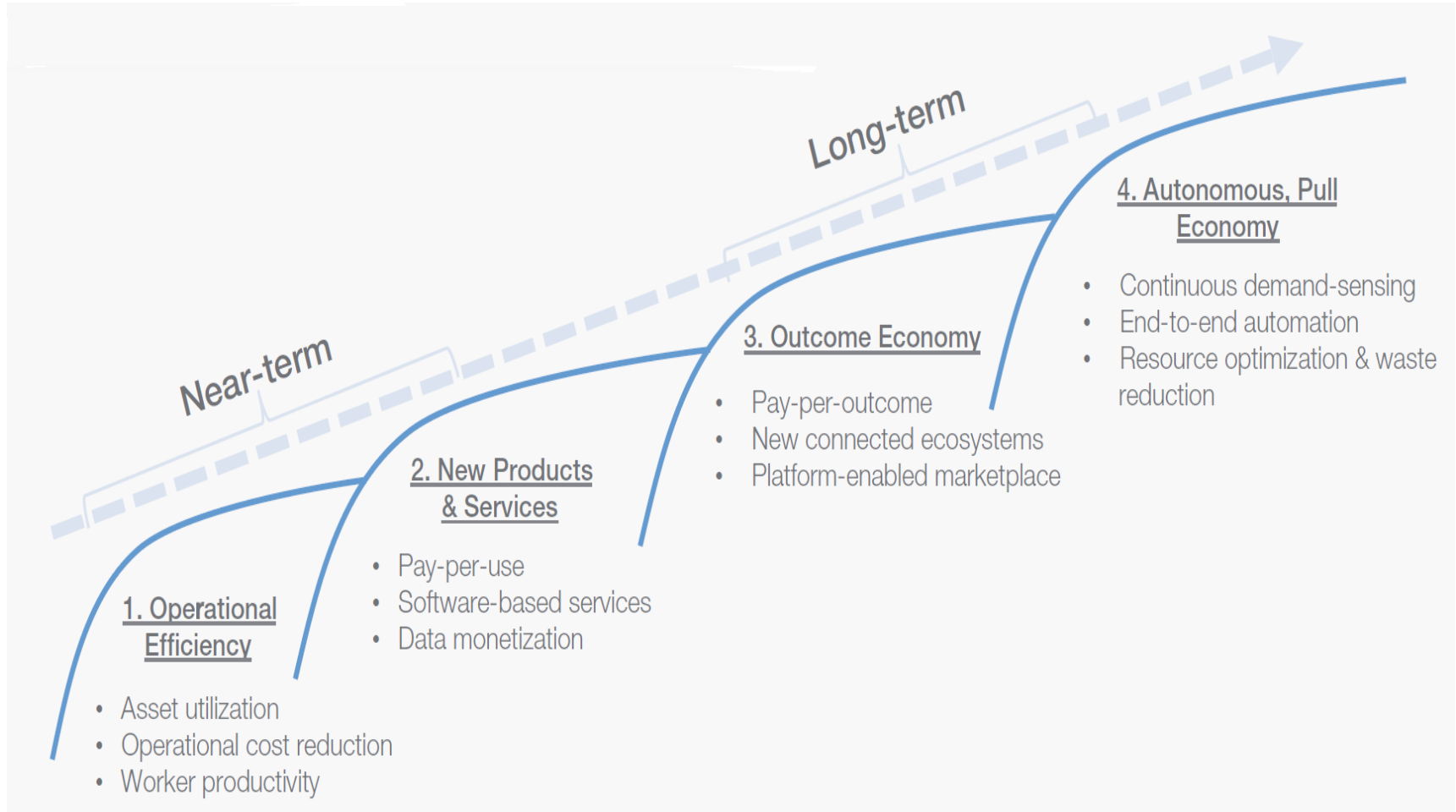
Speaker Name

# IoT Background

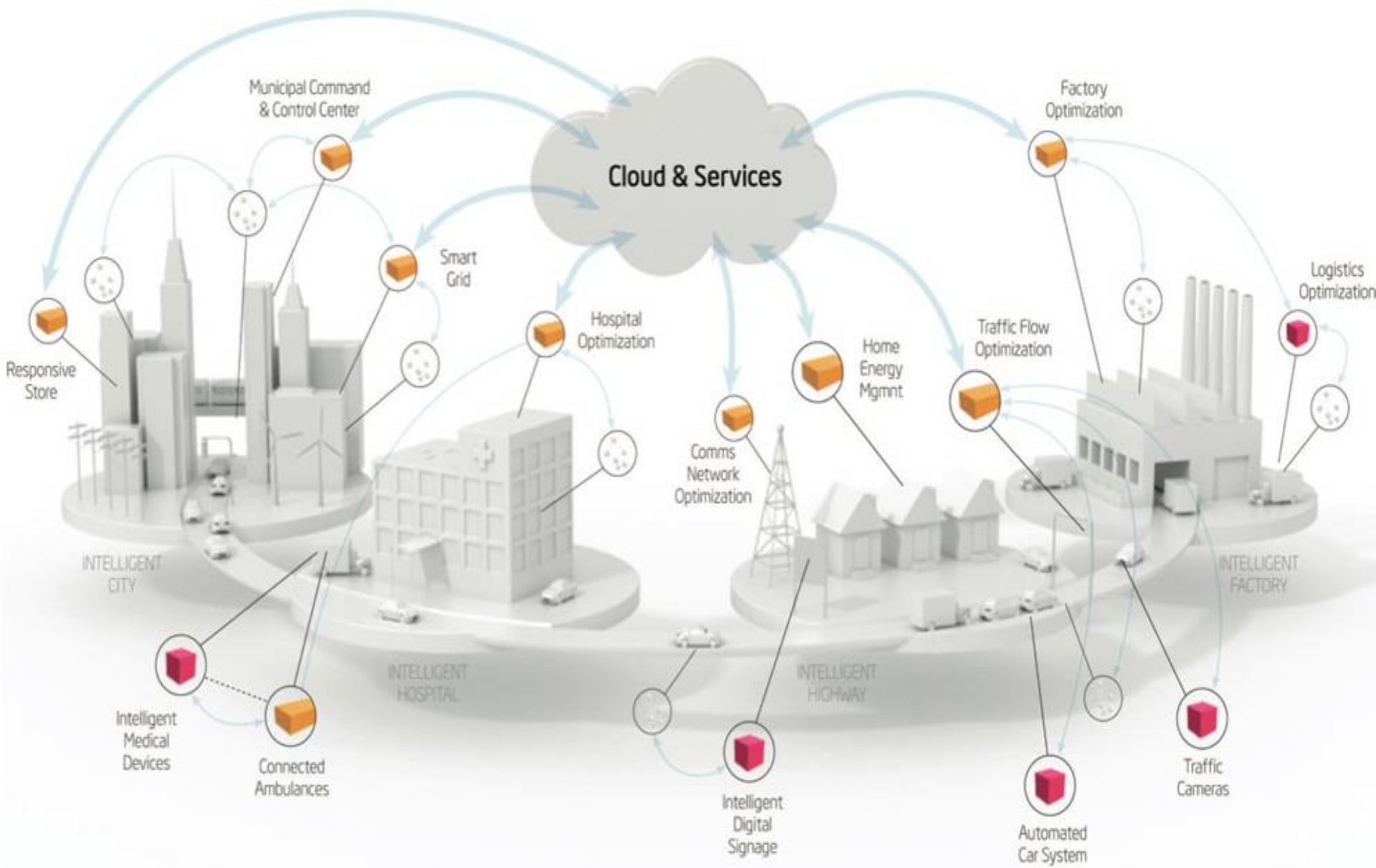


Source: Cisco

# Early in the Industrial IoT Journey



Source: World Economic Forum; Accenture



# IoT Fundamentals – Stack

Level 5

**Big Data Analytics**

Servers with cloud connectivity gather data for advanced applications, e.g. data analytics, visualization, machine learning

Level 4

**Cloud Infrastructure**

Allows data to be accessed, aggregated, stored, monitored, and actuated anywhere in the world

Level 3

**Local System /  
Connected Edge**

Connect to a gateway, controller or server.  
Connectivity is mostly local in a closed loop system, could have cloud connectivity

Level 2

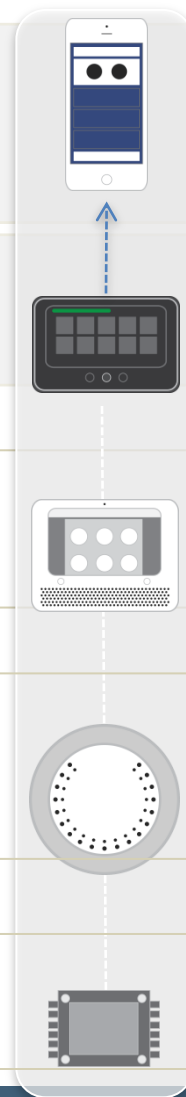
**Edge Device / “Smarter”  
Connected Sensor**

Includes a sensor, some local processing, data storage, power management, connectivity, security and user interface

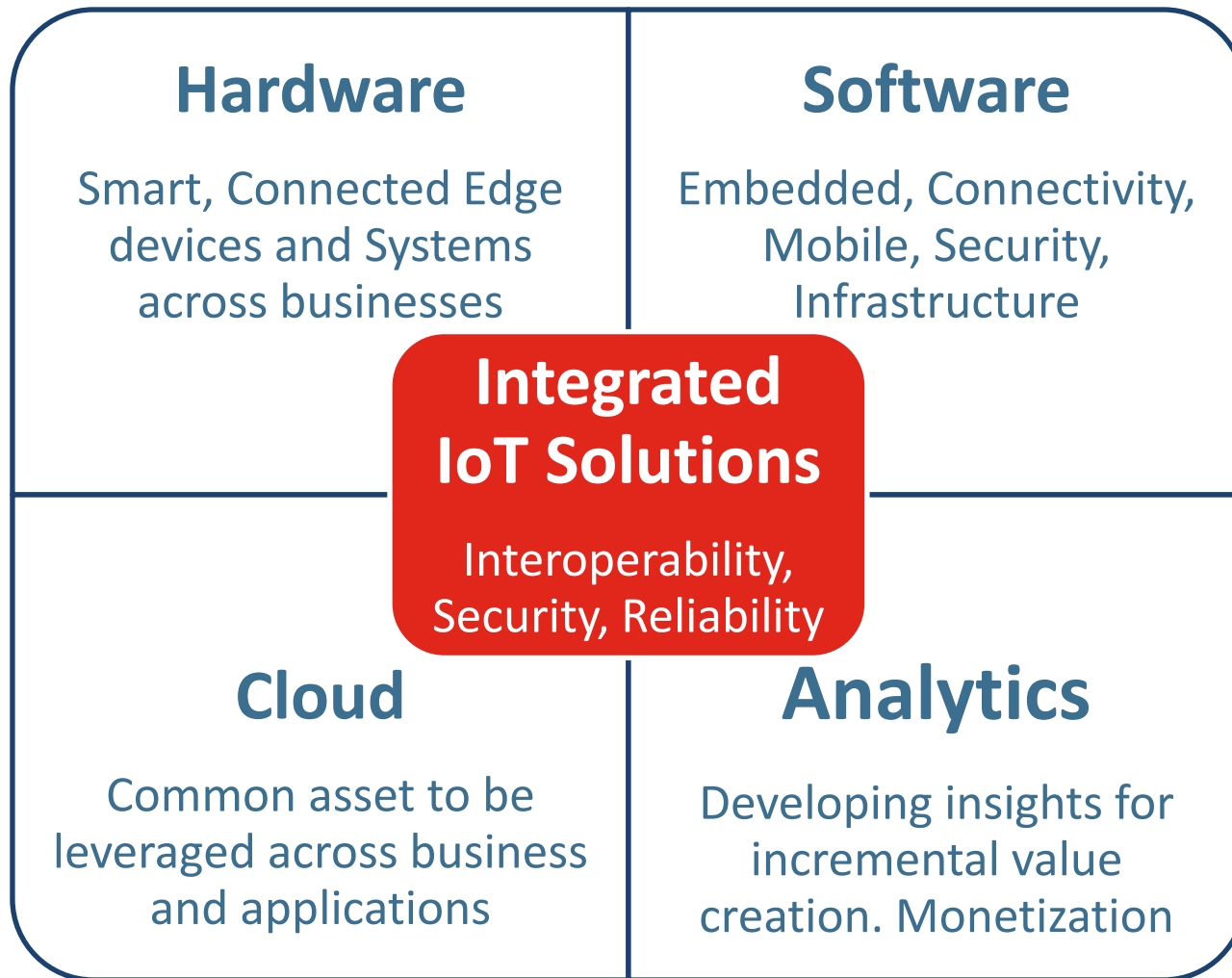
Level 1

**Sensor / Smart Sensor**

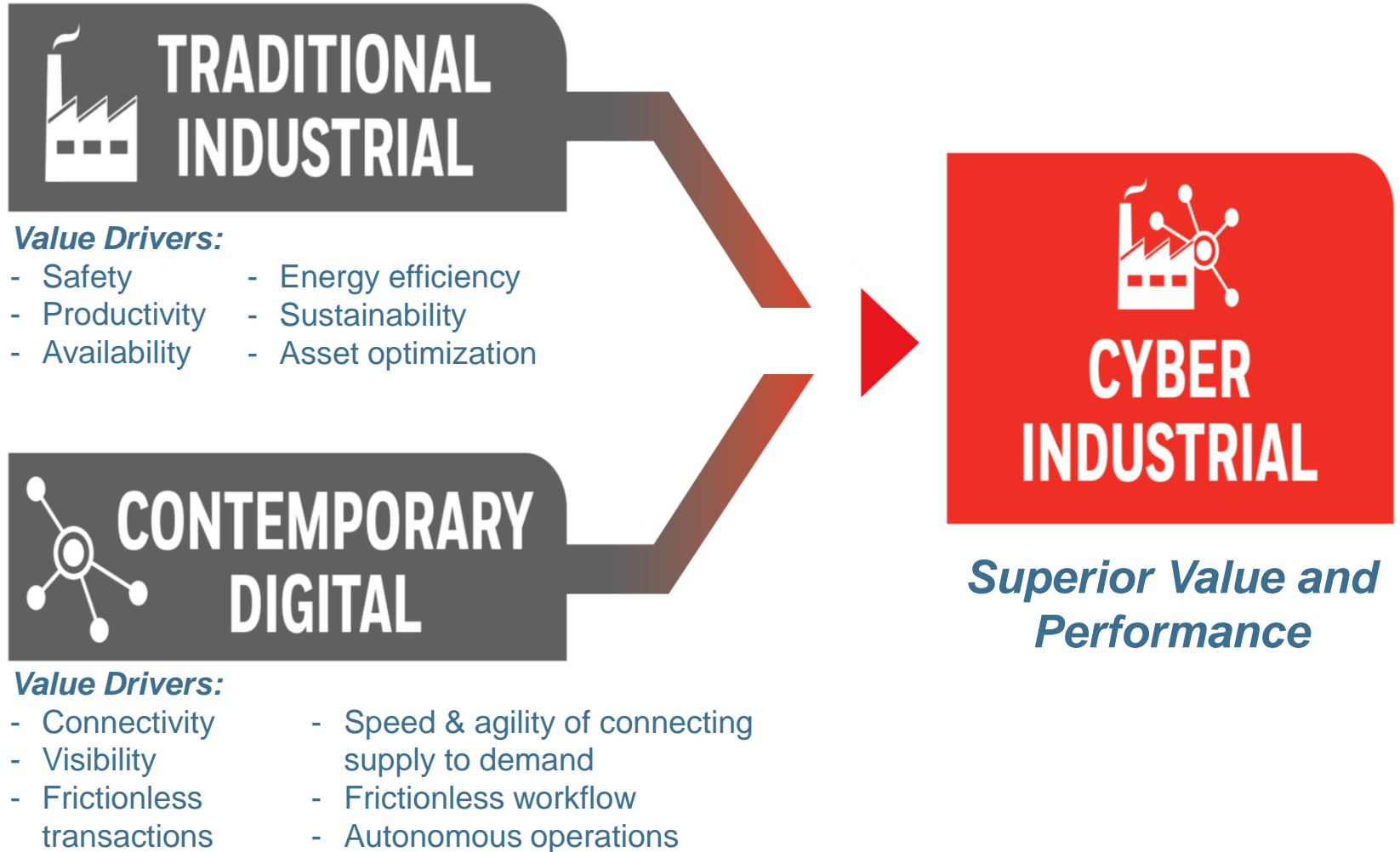
Sensor and actuator with no or small amount of local processing and data storage



# Supply chain investments in IoT



# Industrial IOT Transformation



# Market Insights and Benchmark Data



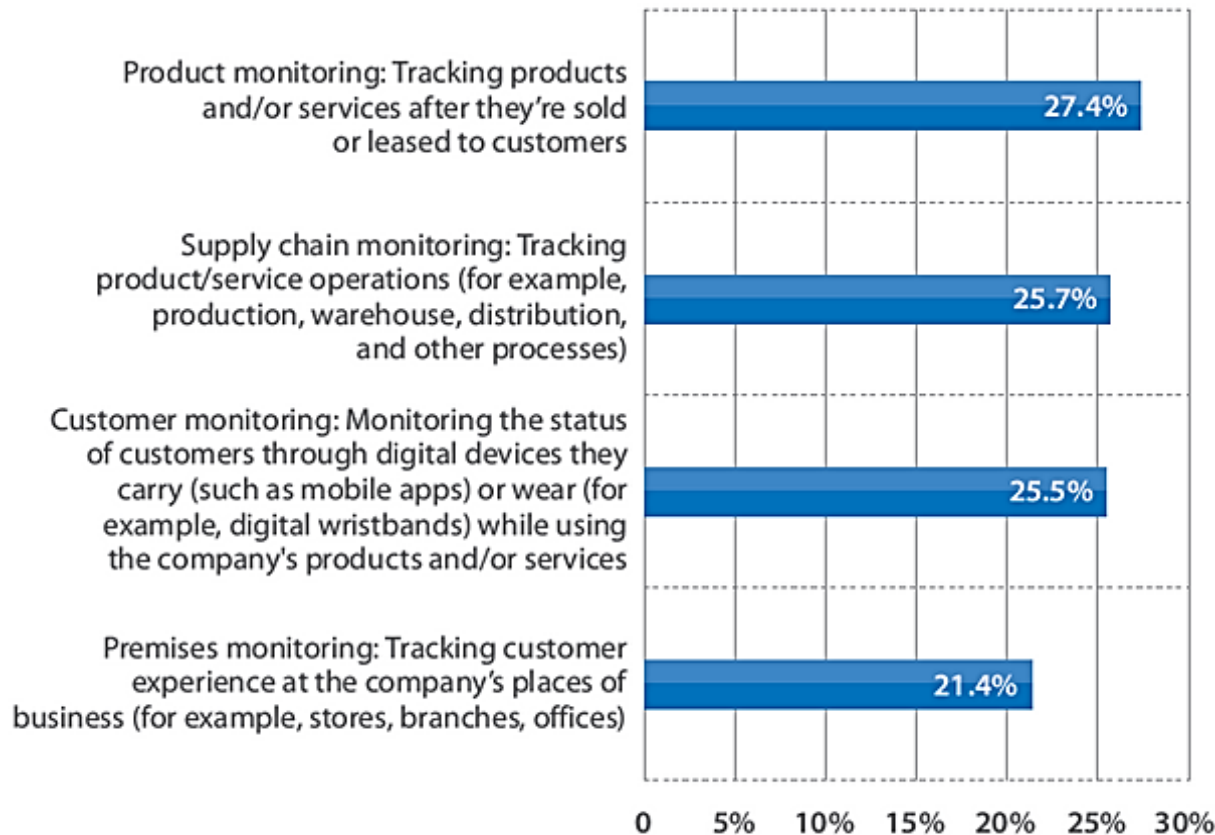
# Survey Findings: Supply Chain Challenges

- Reduce expenses
- Improve productivity levels
- Improve inventory management and levels
- Streamline processes
- Better Systems integration
- Safety – reduce accidents
- Efficient Labor management
- Reduce damages or product spoilage
- Increase Visibility
- Embrace and implement new technologies
- Attain compliance
- Help with Sustainability – corporate citizenship



# Findings: IoT in Supply Chain

**Percentage of 2015 IOT Spend by Core IOT Business Area**

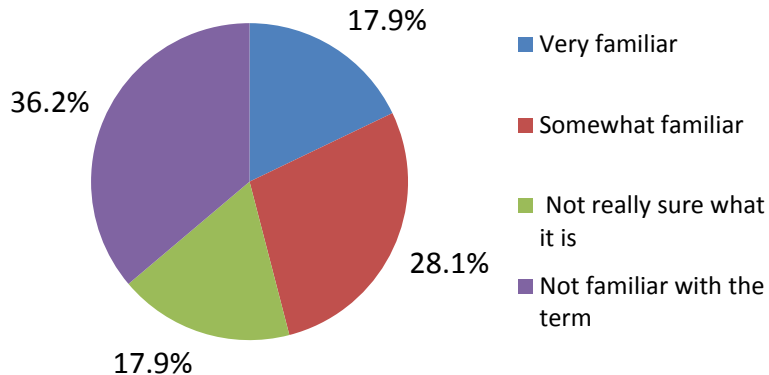


TCS  
conducted  
survey of  
3,764  
executives



# IoT Adoption

- How familiar are you with the term “Internet of Things (IoT)?”

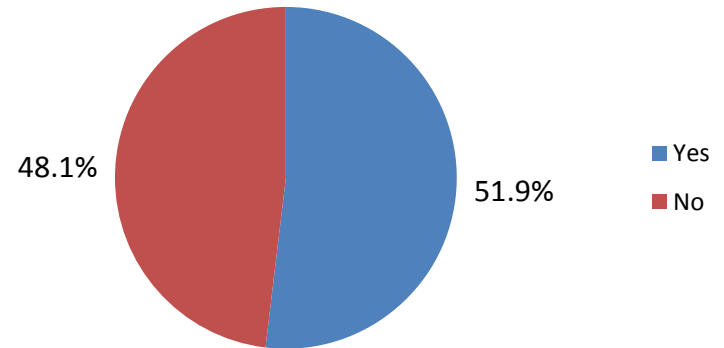


- In what area do you need more information?

*Applications, Software, Hardware, Implementation, Communication technologies, Security, Data collection & Management, Analytics, Technology, Perceived benefits*

**Basically - Everything**

- Do you believe IoT is or will be relevant to your operations?



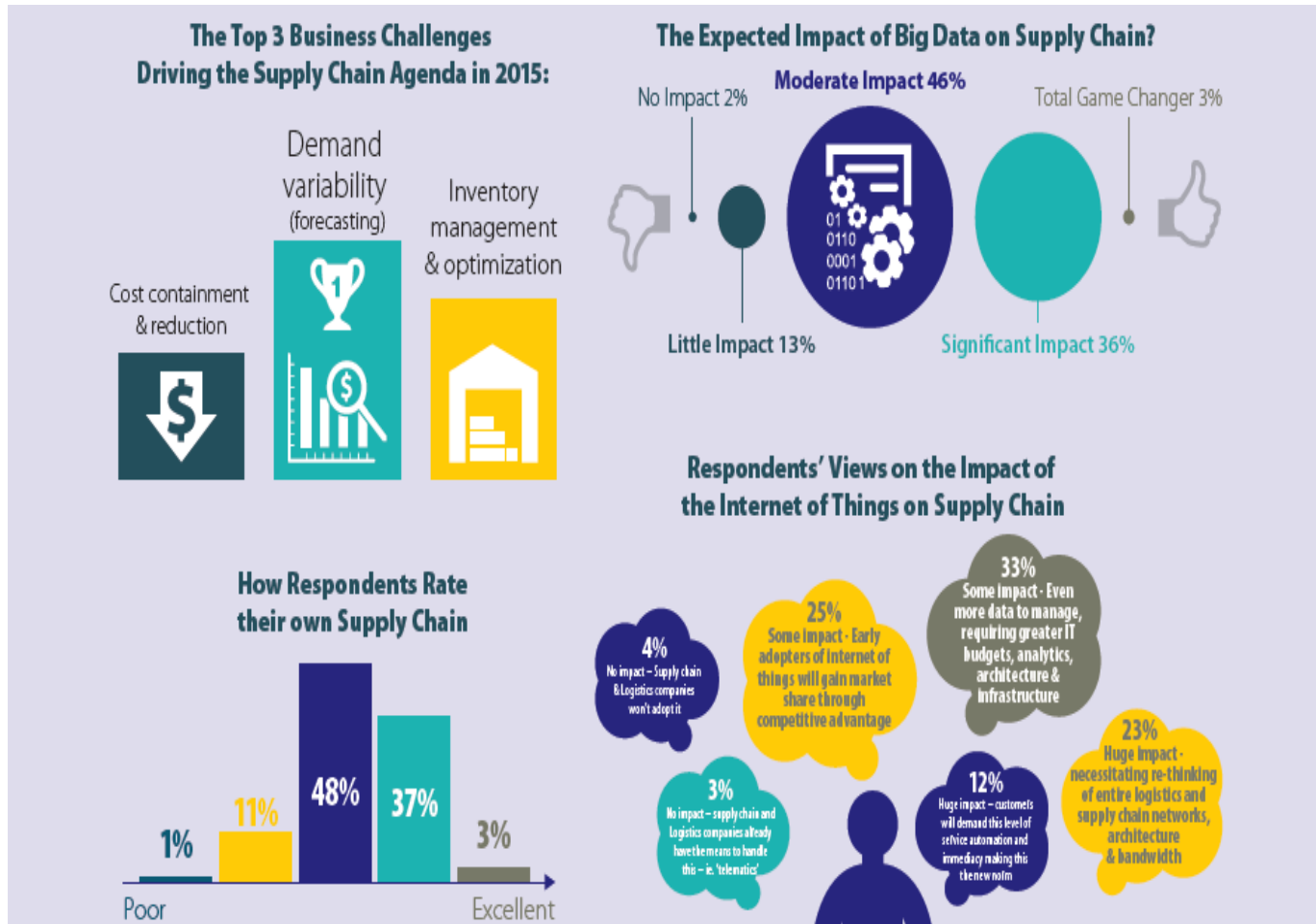
- What challenges/issues are considered when evaluating IoT solutions for implementation?

*ROI, System Integration, Management buy-in, Security issues, Technology obsolescence, connectivity, End-user education, Achieving greater efficiency, Deploying solutions in cloud, etc.*

**Basically - Everything**



# Big Data & IoT: Strategic Investments



# Key Industry Benchmark Data

Financial Metrics	Major Opportunity	Disadvantage	Typical	Advantage	Best-in-class	Median
Distribution Costs as a Percent of Sales	Greater than 11.2%	$\geq 6.6$ and $< 11.12\%$	$\geq 3.68$ and $< 6.6\%$	$\geq 2.4$ and $< 3.68\%$	$< 2.04\%$	5%
Distribution Costs as a Percentage of COGS	Greater than 18.8%	$\geq 9.1$ and $< 18.8\%$	$\geq 4.978$ and $< 9.1\%$	$\geq 1.6$ and $< 4.978\%$	$< 1.6\%$	6.05%
Distribution Costs per Unit Shipped	Greater than \$5.00	$\geq \$1.41$ and $< \$5.00$	$\geq \$0.72$ and $< \$1.41$	$\geq \$0.30$ and $< \$0.72$	$< \$0.30$	\$1.04
Days on Hand Finished Goods Inventory	Greater than 83.8 Days	$\geq 45$ and $< 83.8$ Days	$\geq 30$ and $< 45$ Days	$\geq 15$ and $< 30$ Days	$< 15$ Days	40 Days
Inventory Shrinkage as a Percent of Total Inventory	Greater than 2%	$\geq .05$ and $< 2\%$	$\geq 0.1$ and $< 0.5\%$	$\geq 0.02$ and $< 0.1\%$	$< 0.02\%$	35 Days



# Examples of Supply Chain IoT Use Cases



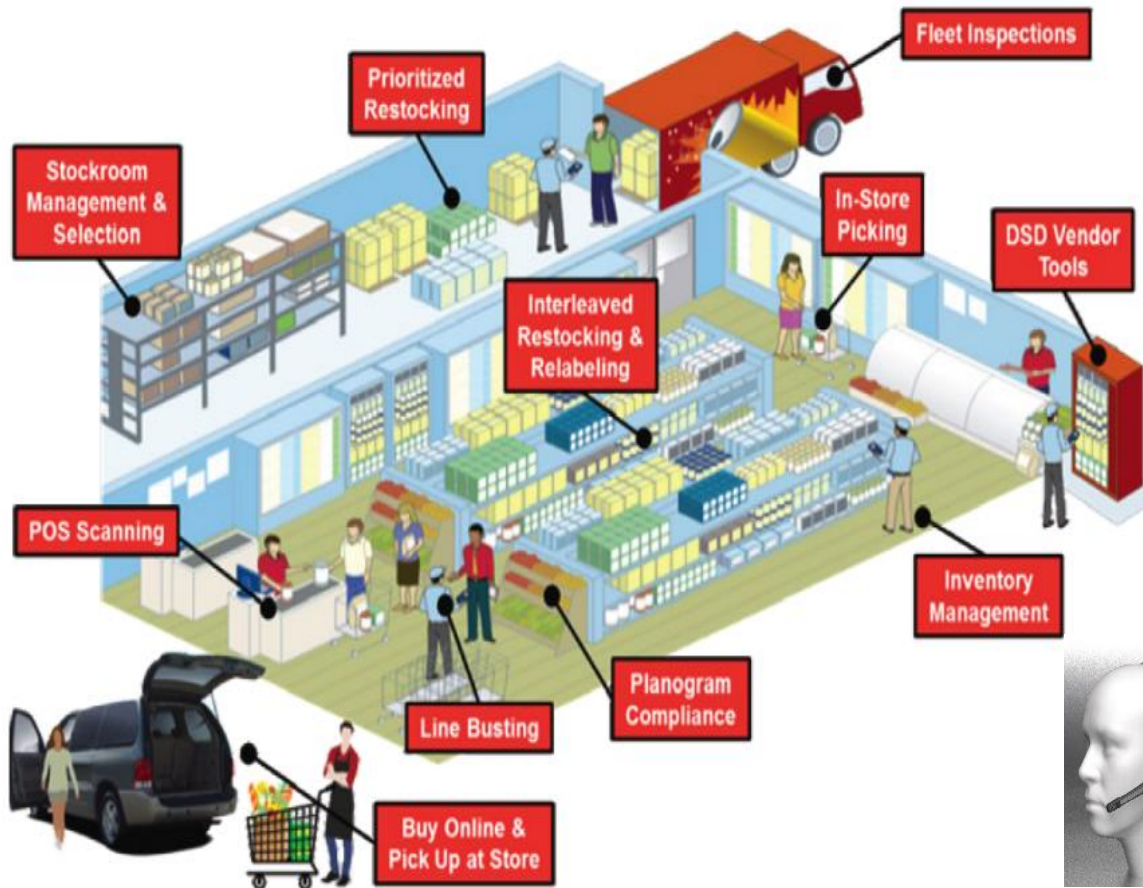
# Cold Chain/Custody transfer

- Enable logistic providers ability to track and monitor conditions of refrigerated shipping containers reducing food spoilage and transport liability costs
- Download data and visualize on same dashboard as inventory transfer



# Omni-channel Retail Supply Chain

Increase Sales. Optimize Customer Service. Improve Productivity.



## Impact

Worker productivity increase by > 20%

Reduce out-of-stocks by 25%

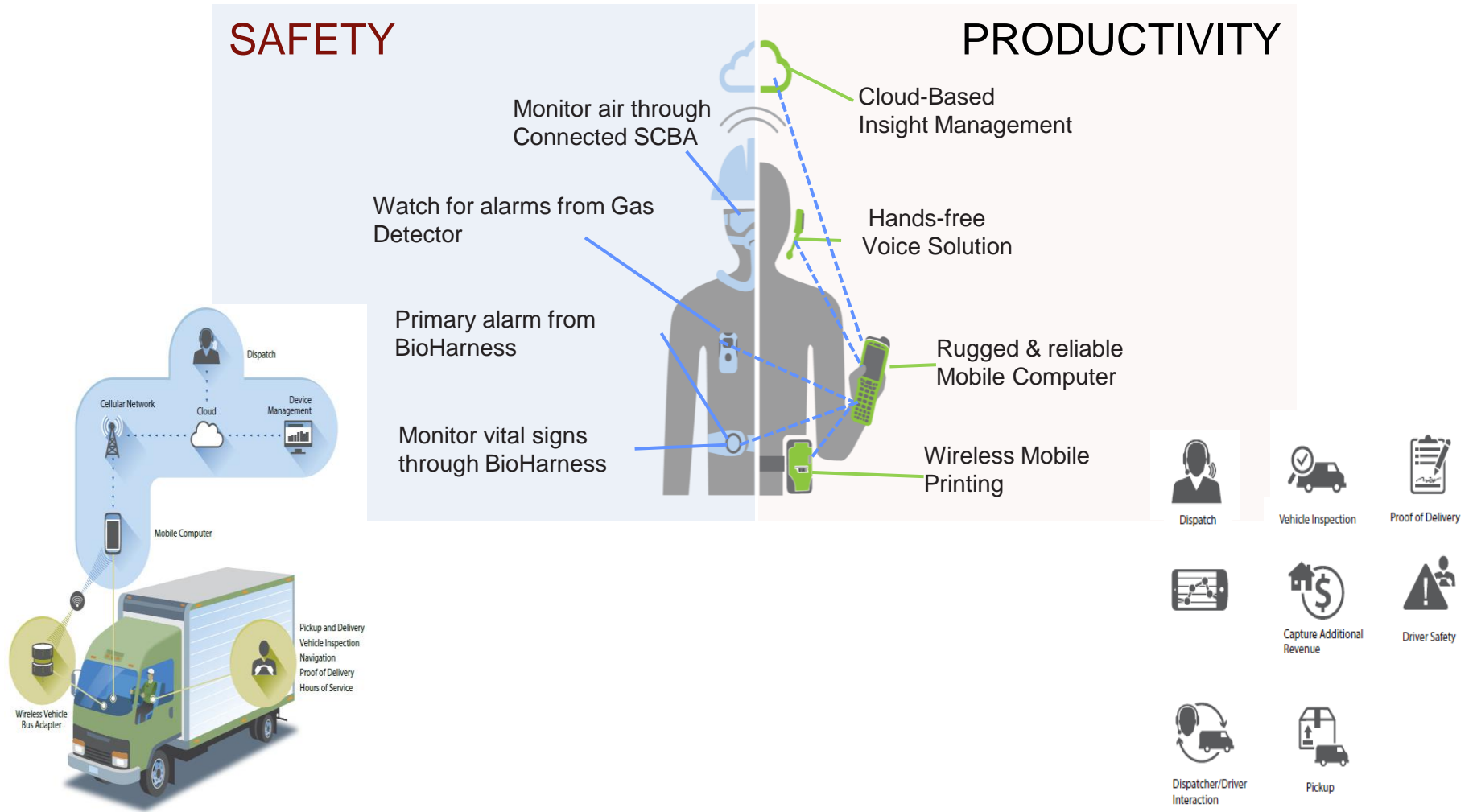
Up to 1% increase in store sales



# Connected Worker

## SAFETY

## PRODUCTIVITY



# Asset Management



## Vehicle Mount Computers

Support task management aligned with the warehouse management system



## Handheld & Hands-Free Scanners

Quickly manage and process asset data with ease, getting information out to the field



## Voice Technology

Generate up to 10-25% productivity improvements by transforming loading/unloading processes with voice-based devices



## Mobile Computers

O/S versatility, large multi-touch displays, superior scanning and battery life offer more ways to send and receive information



## Satellite Tracking

Delivers satellite-based products and services for tracking, monitoring and protecting assets



## Enhanced Asset/Driver Productivity

Improved Asset utilization,  
Intelligent stock allocation  
combined with direct  
instructions  
to workers  
improve productivity



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