



IHS Markit™

How industrial IoT is impacting the industrial automation market?

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Rita Liu

Rita.Liu@ihsmarkit.com

Agenda

- About IHS Markit
- Understanding industrial IoT
- How industrial automation market is evolving?
- How to redefine industrial automation products

IHS Markit - The new global business information powerhouse

Serving 50,000 customers in 140+ countries including...

ALL

Global investment
banks (14/14)

24 / 25

Largest global oil
companies

Largest hedge funds
(50/50)

94 / 100

Largest U.S.
corporates

Largest global
custodians

46 / 50

Largest Global asset
managers

G20 governments
(20/20)

35 / 50

Largest
U.S. banks

10 / 10

Largest automobile
companies in the world

>85%

of the Fortune Global
500

>75%

of the Fortune
US 1000

Extensive breadth and depth

Information, insight and analytics across critical technology markets

Automotive Electronics

- Electronic systems & semiconductors
- Cost management
- Connected car

Displays

- Display manufacturing & supply chain
- Display materials & components
- Large displays
- Small & medium displays
- Touch & interface

Enterprise & IT

- Data center & cloud
- Enterprise networks & communication
- Enterprise IT security
- M2M, IoT & connectivity

Healthcare Technology

- Medical devices & equipment
- Healthcare IT

Manufacturing Technology

- Capital equipment & machinery
- Electric motor systems
- Discrete & process automation

Media & Advertising

- Advertising
- TV media & content
- Video
- Digital media
- Games
- Cinema

Mobile & Telecom

- Operators & services
- Mobile innovation
- Mobile networks
- Voice & data networks
- Service provider Broadband & video
- Managed services

Mobile, Consumer & Connected Devices

- Mobile devices
- Consumer electronics
- Lighting
- Digital signage
- Smart home & appliances

Power & Energy Technology

- Smart grid & energy storage
- Power supplies & wireless charging
- Solar

Security Technology

- Access control & fire
- Video surveillance
- Cybersecurity & digital ID
- Critical communications

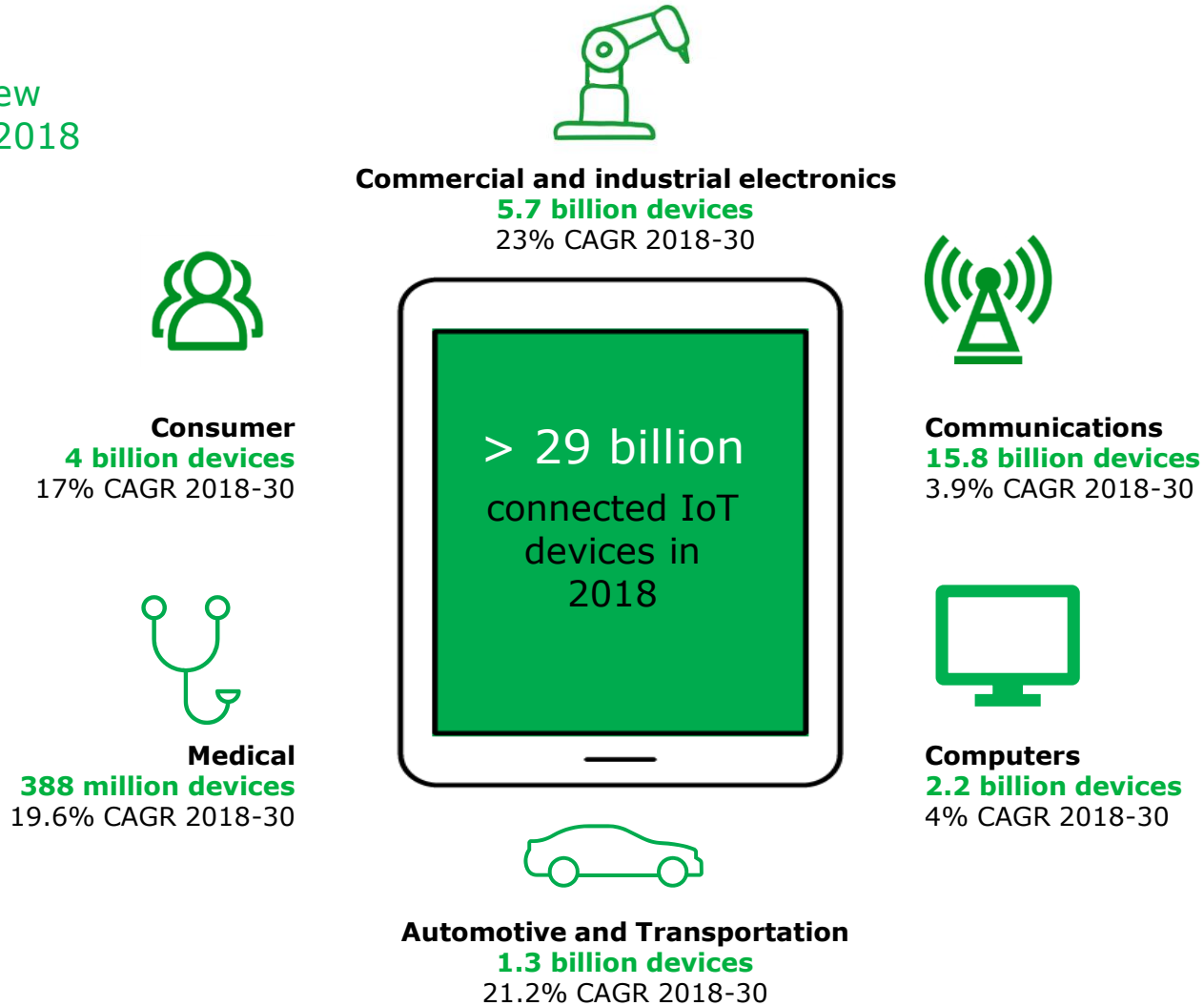
Semiconductors

- Semiconductor market
- Semiconductor components
- Semiconductor manufacturing
- MEMS & sensors
- Memory & storage

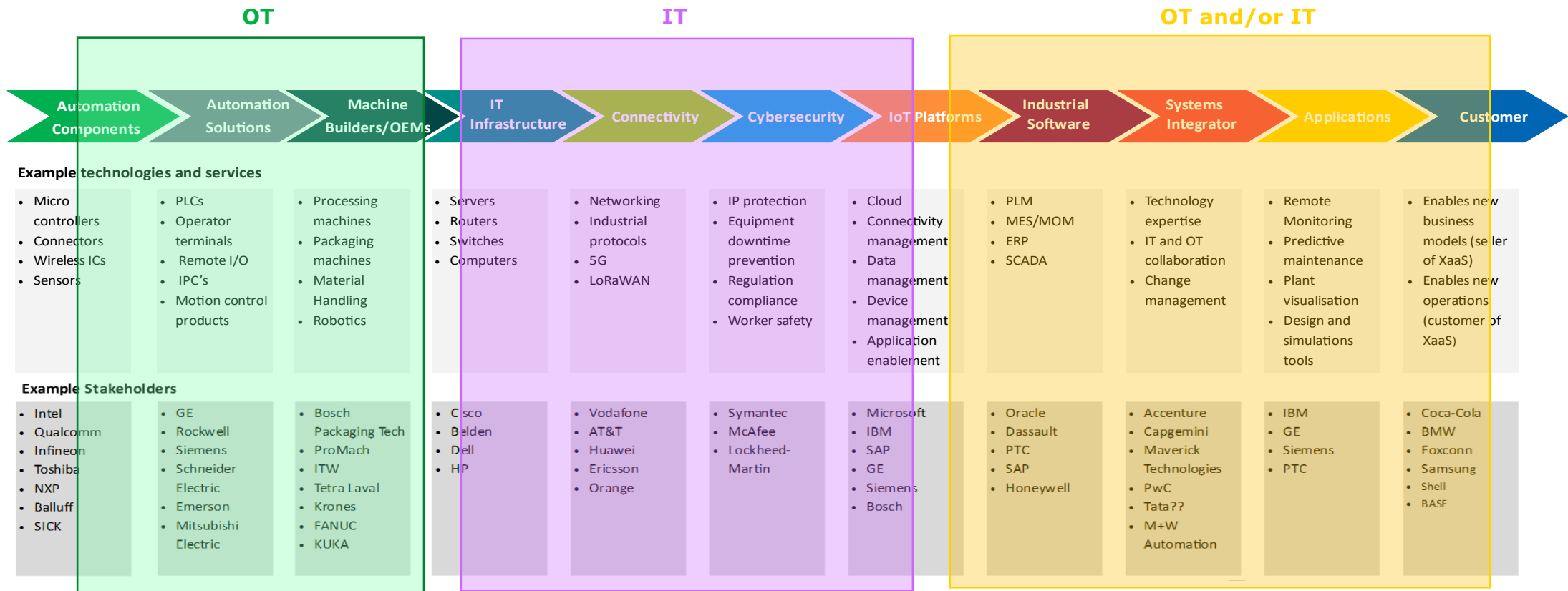
Understanding industrial IoT

Industrial IoT installed base

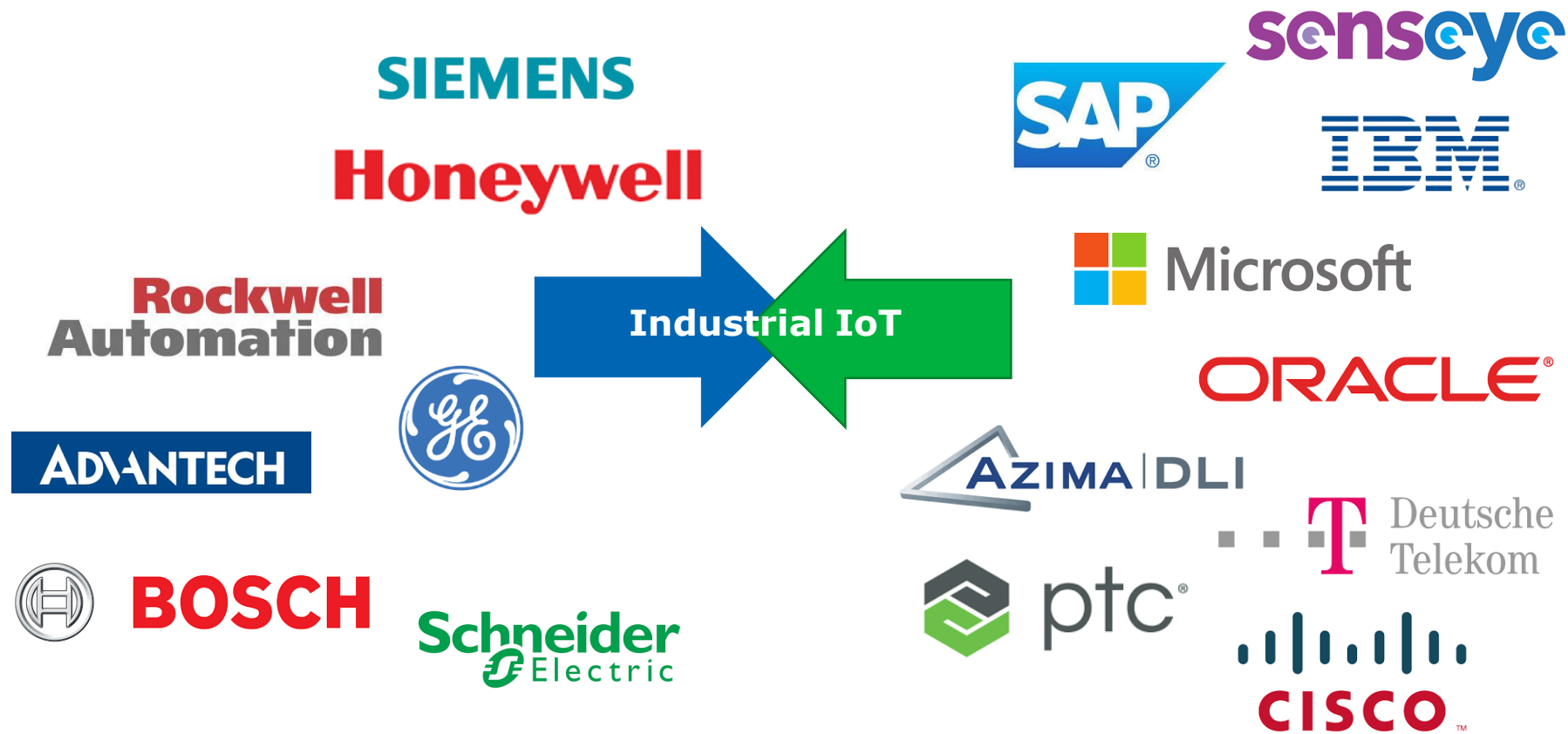
Account for nearly 58% of new connected devices between 2018 and 2030.



Industrial IoT: Convergence of OT and IT



Suppliers: OT and IT Convergence



The Industrial IoT continues to evolve

Innovation continues to drive the three phases of industrial IoT solutions: Connect, Collect, Compute

Industrial IoT solutions are constantly developing to fit ever-growing business needs and technological capabilities—this combination drives the growth and excitement around industrial IoT.



Connect(ivity)

This is the foundational component for IIoT.

Fundamentally, the internet of things is about this idea of embedding connectivity and processing capabilities into devices all around us. This will continue to evolve over time.



Collect

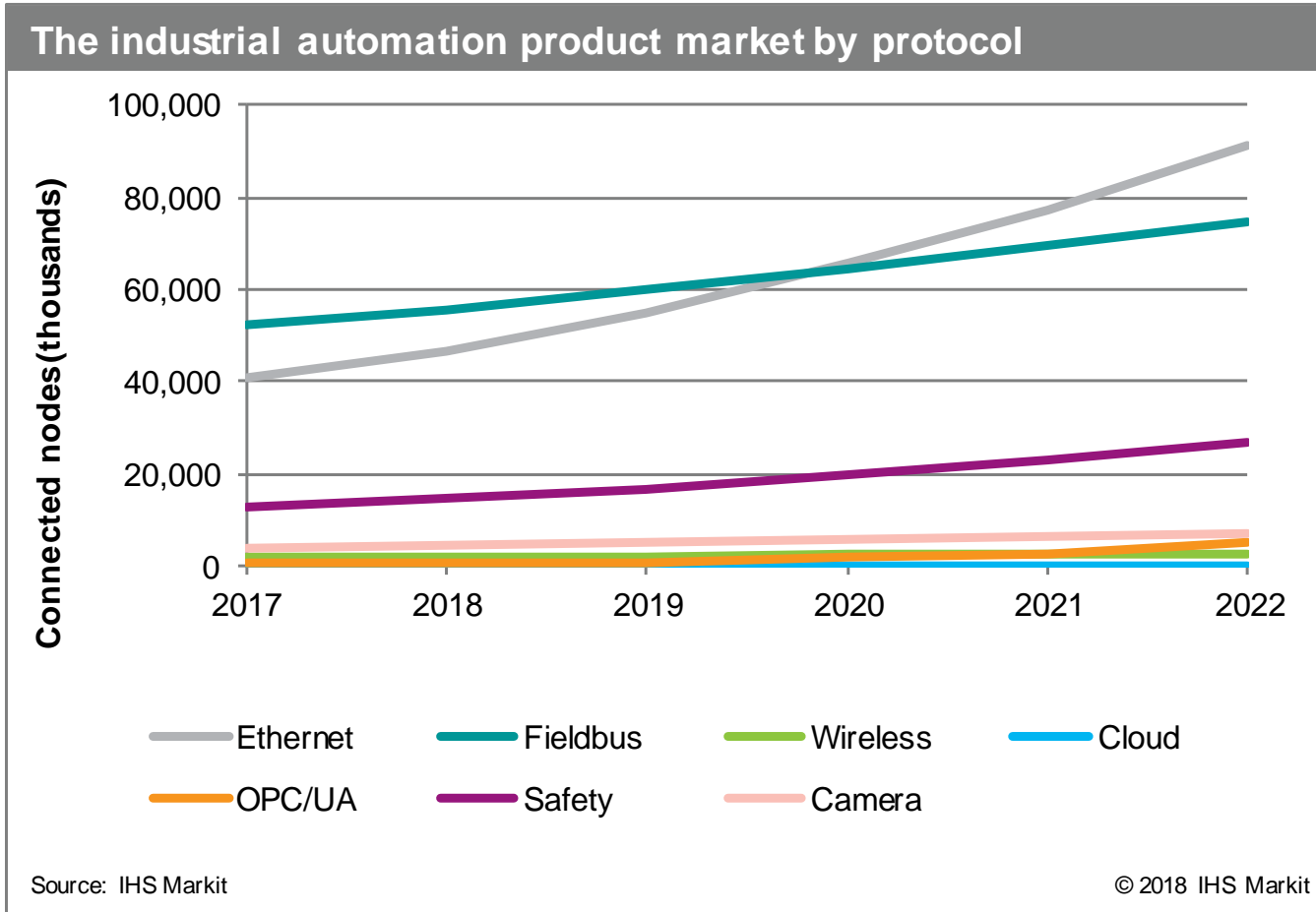
Once devices are connected, sensors and storage features are added. Devices then become aware of their environment, and can now collect and analyze data to provide critical insights.

Compute

The third critical element of any IIoT solution is the ability to process and analyse the volume of data that is being generated by IIoT devices. It is critical to identify which data should be processed at the edge, and which data should be aggregated & stored as part of a big data solution.

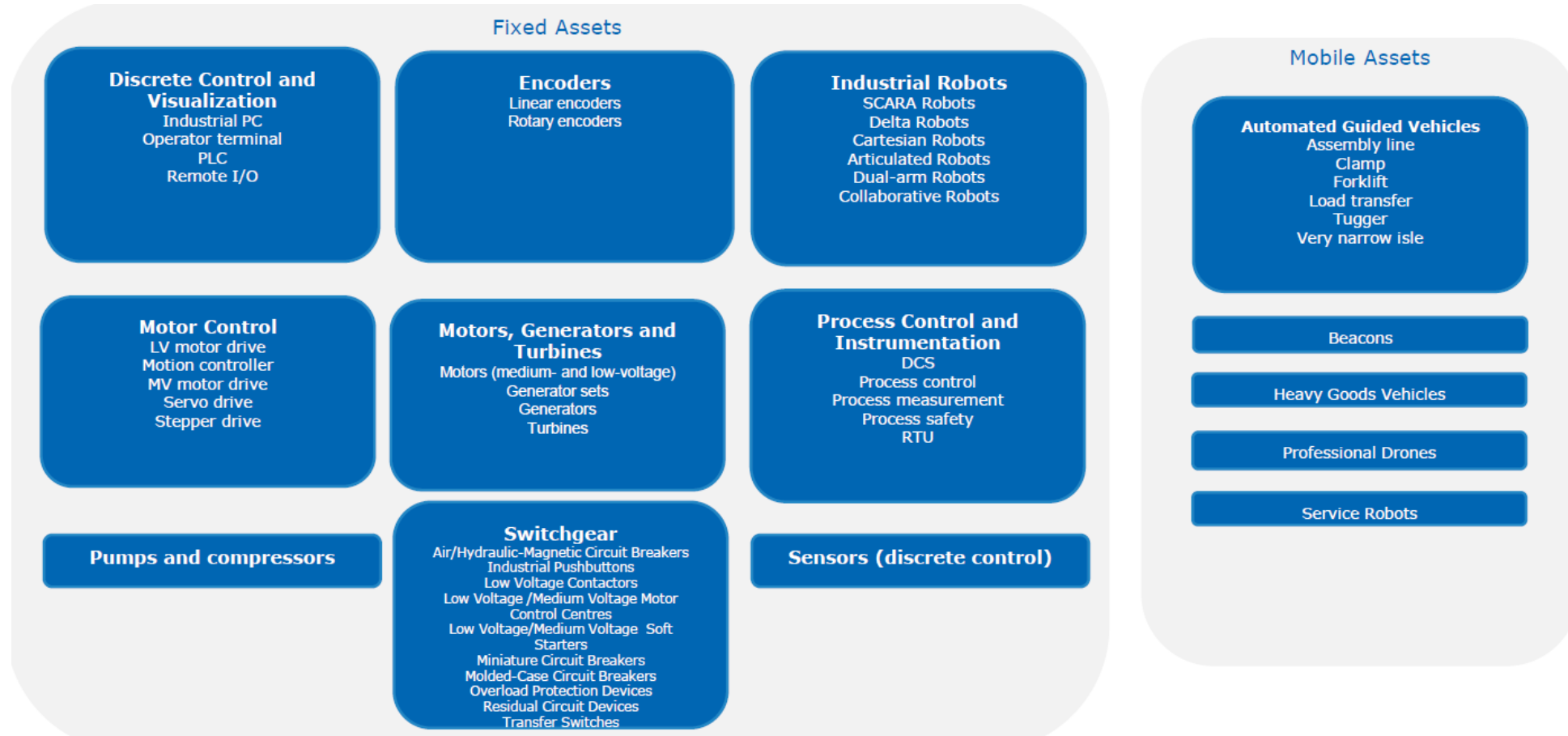
How industrial automation market is evolving?

Connect: Ethernet is critical for connect in the factory



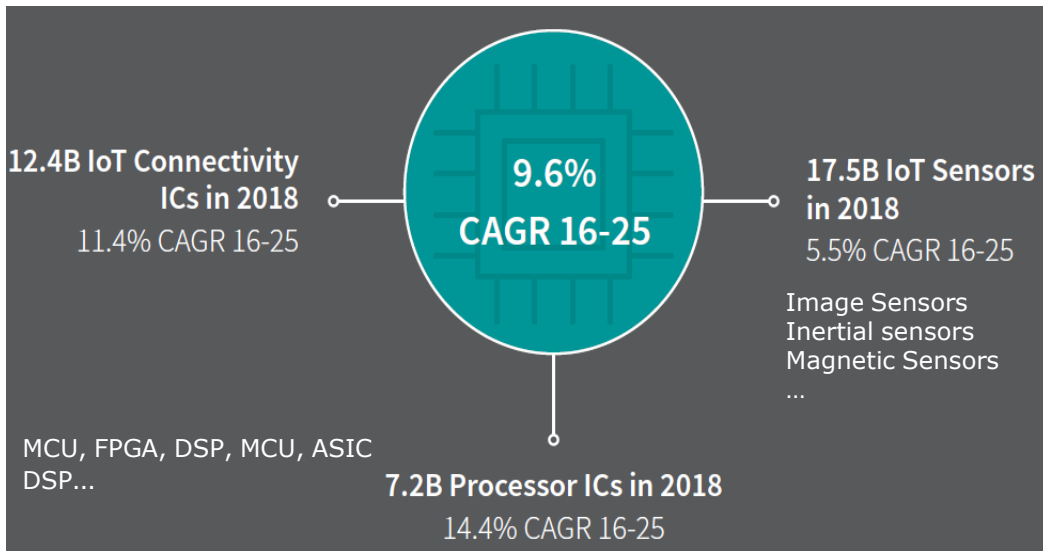
- Sales of Ethernet devices to surpass fieldbus sales by 2020
- Growth in demand for wireless tech is disappointing

Collect: Traditional products to be redefined

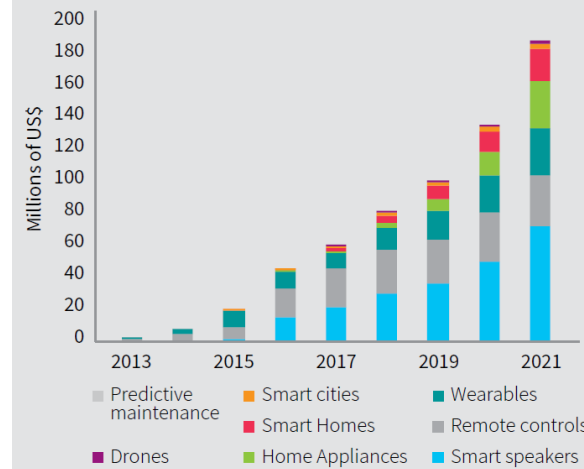


Collect: Sensors and processors in industrial IoT

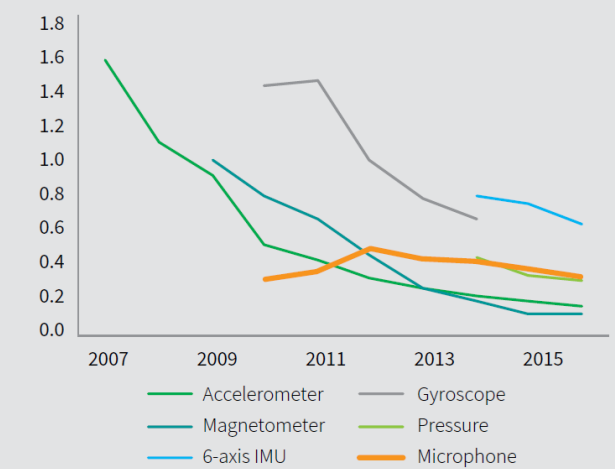
Traditional edge devices + Sensors, MEMS & processors = collect data, smarter



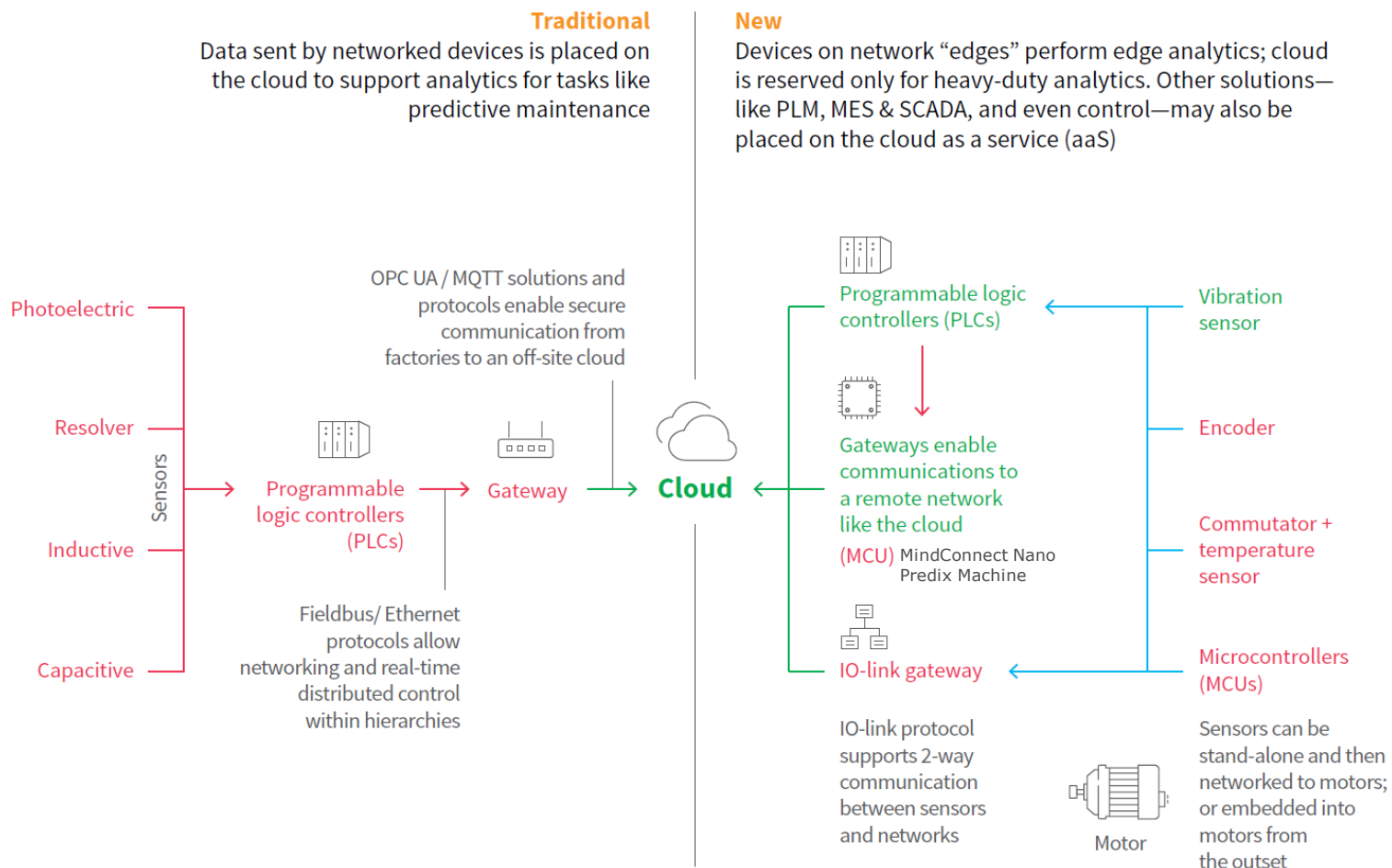
MEMS microphone shipments in IoT by application



Sensor ASP in US\$ for iPhone



Compute: Decentralized intelligence in edge



Legend:

Ethernet protocols

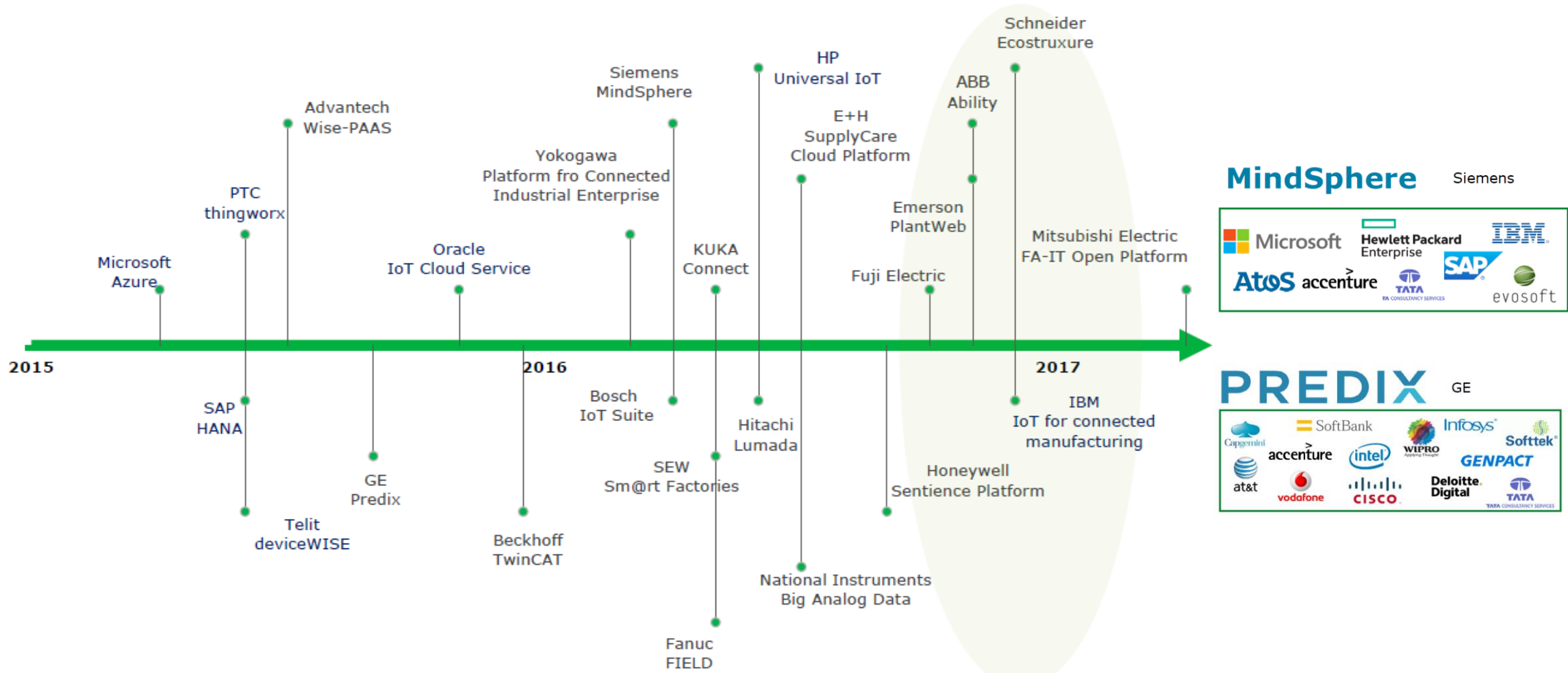
IO-Link connectivity

Cloud connectivity such as OPC UA

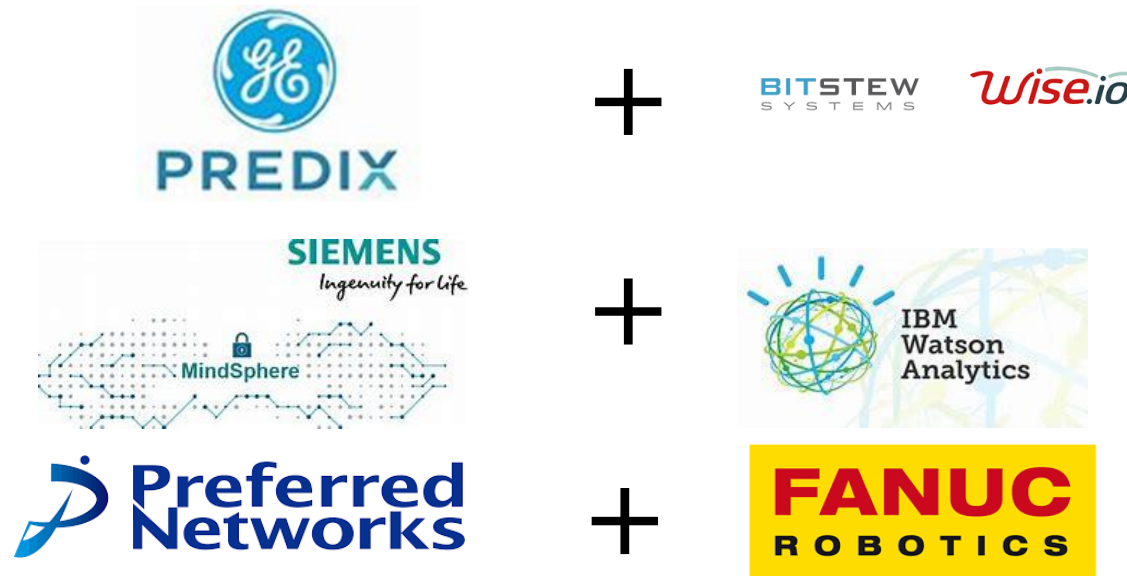
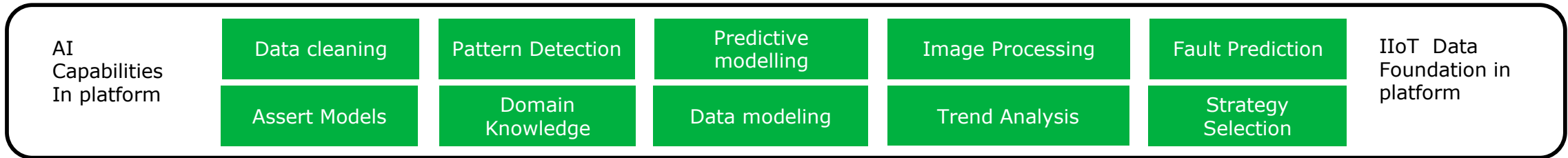
Green text: A device that can compute or process data

Red text: A device that may collect but not process data

Compute in the cloud: Rush for IIoT platforms

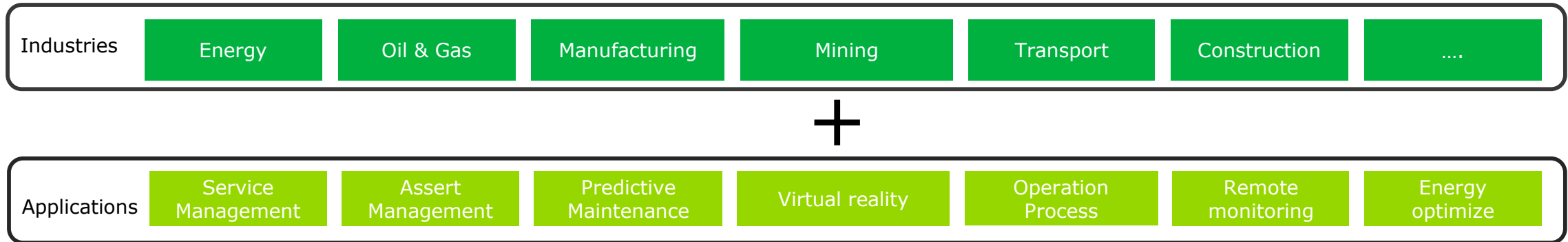


Create: Embedded AI and data analytics capabilities in platform



Create: More opportunities

Various industrial APP

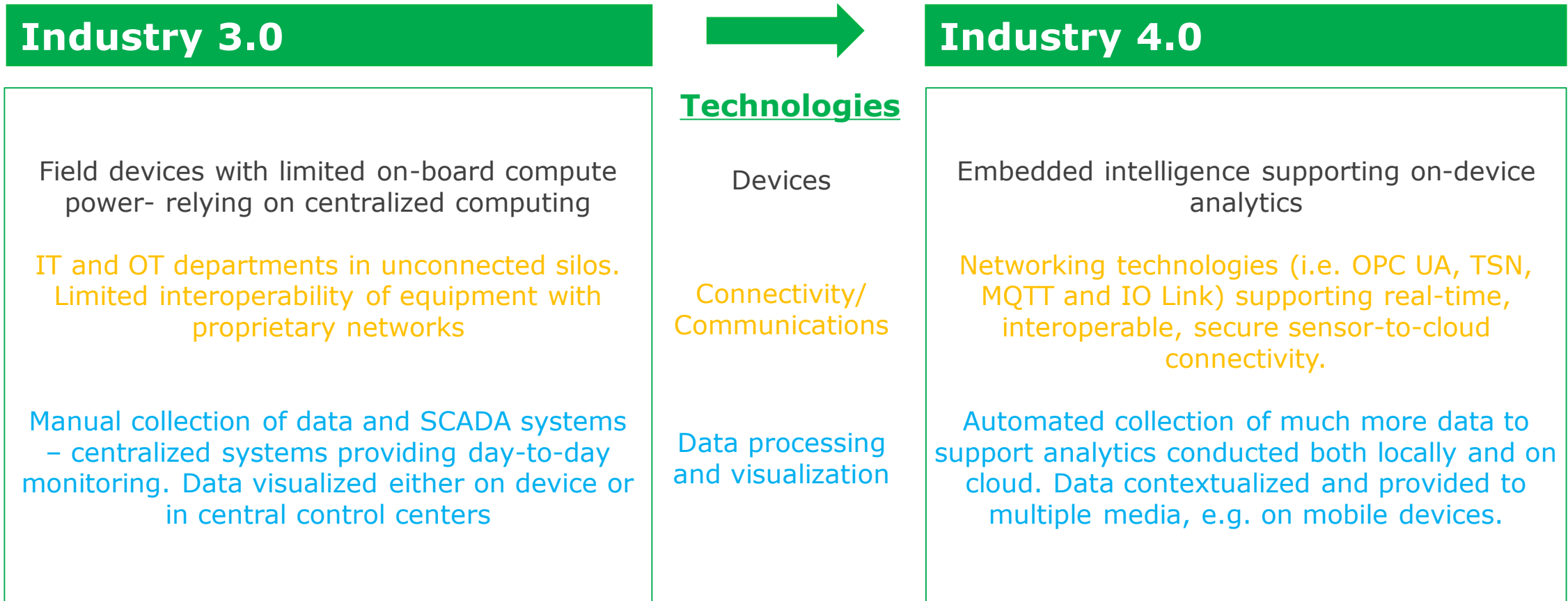


Digital Twin, Simulation tools and software on cloud



How to redefine industrial automation products

How to redefine industrial automation products



How to redefine industrial automation products

Industry 3.0

Data provided to support human decision making

Individual product and solution sales directed at capital budget



Outcomes

Industry 4.0

AI able to make decisions influencing product design, process optimization, maintenance planning etc.

Outcome-based sales introducing new service models – transition to operating expense

An example: trends on industrial HMI products

Being integrated with more functions

- Soft PLC/Motion control
- Gateway function
- Data collection, processing, and analyzing

Mobile applications

Gesture recognition
and haptic
technologies

New type of embedded operator terminals

- Smart drive
- Power meter

Moving to the Cloud

Multi-touch technology

See clearer. See further. Know more.
With IHS Markit Technology.

Thank you!