



# IoT in Action

#IoTinActionMS



# IoT Continuum: Evolving Business

Oliver Niedung

IoT Device Experiences  
EMEA

**IoT** in Action







Thank you

# IoT in Action, Frankfurt, October 21 – Event Agenda

Executive Keynote – Oliver Niedung, Hans-Jürgen Hilscher (Hilscher Gesellschaft für Systemautomation mbH)	13:00–14:00
Business Transformation in Action – Oliver Niedung, Dr. Tobias Adam (Magnify Innovation)	14:00-15:00
Networking Break	15:00–15:30
Architecting the Intelligent Edge to Create Scalable Repeatable Solutions - Jürgen Mayrbäurl, Christian Lutz (Crate)	15:30–16:30pm
Activating Resources & Programs to Accelerate Time to Market and Co-sell – Oliver Niedung, Stefani Eisele (Intel)	16:30–17:15pm
Partner-Customer Matchmaking & Sponsored Partner Solution Showcase	All day





# Our society & technology

# Going digital

**1 million/hour**  
new devices  
coming online  
by 2020

**12 years**  
average age of S&P  
500 corporations  
by 2020

**81% businesses**  
operating in a hybrid  
environment  
by 2021





# Fueling opportunities



**\$267 billion**

Predicted USD spend on IoT by manufacturers by 2020<sup>1</sup>

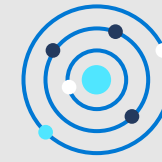
Boston Consulting Group, 2017



**+\$100 million**

Average increase operating income among the more digitally transformed enterprises<sup>2</sup>

Keystone Strategy, 2018



**94%**

Percentage of businesses projected to be using IoT by the end of 2021<sup>3</sup>

Hypothesis, 2019



**80B**

Connected "things" by 2025 generating 180ZB of data



**\$130B**

New monetization avenues due to IoT-related services



**80%**

Companies that increased revenue as a result of IoT implementation

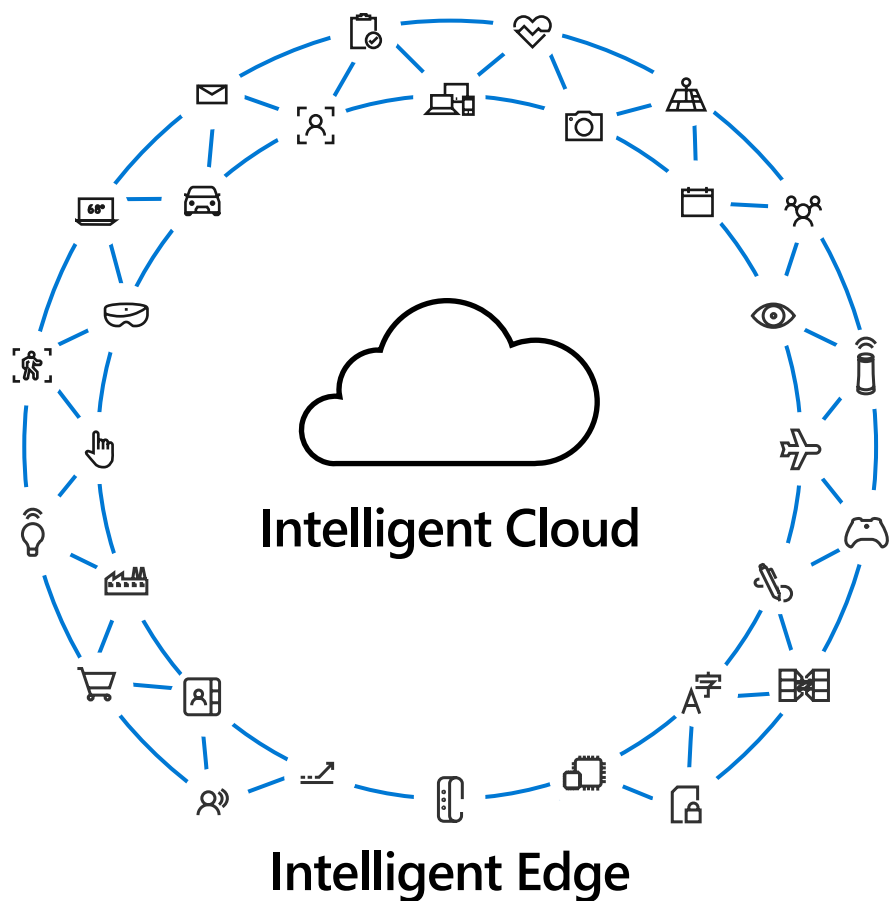
"By 2020, 30 percent of G2000 companies will have allocated capital budget equal to at least 10 percent of revenue to fuel their digital strategies.

This shift toward capital funding is an important one as business executives come to recognize digital transformation as a long-term investment.

This commitment to funding digital transformation will continue to drive spending well into the next decade."

—Shawn Fitzgerald: IDC, Research Director,  
Worldwide Digital Transformation Strategies





"Building applications for multi-device, multi-sense experiences is going to require a **very different form of computing architecture**.

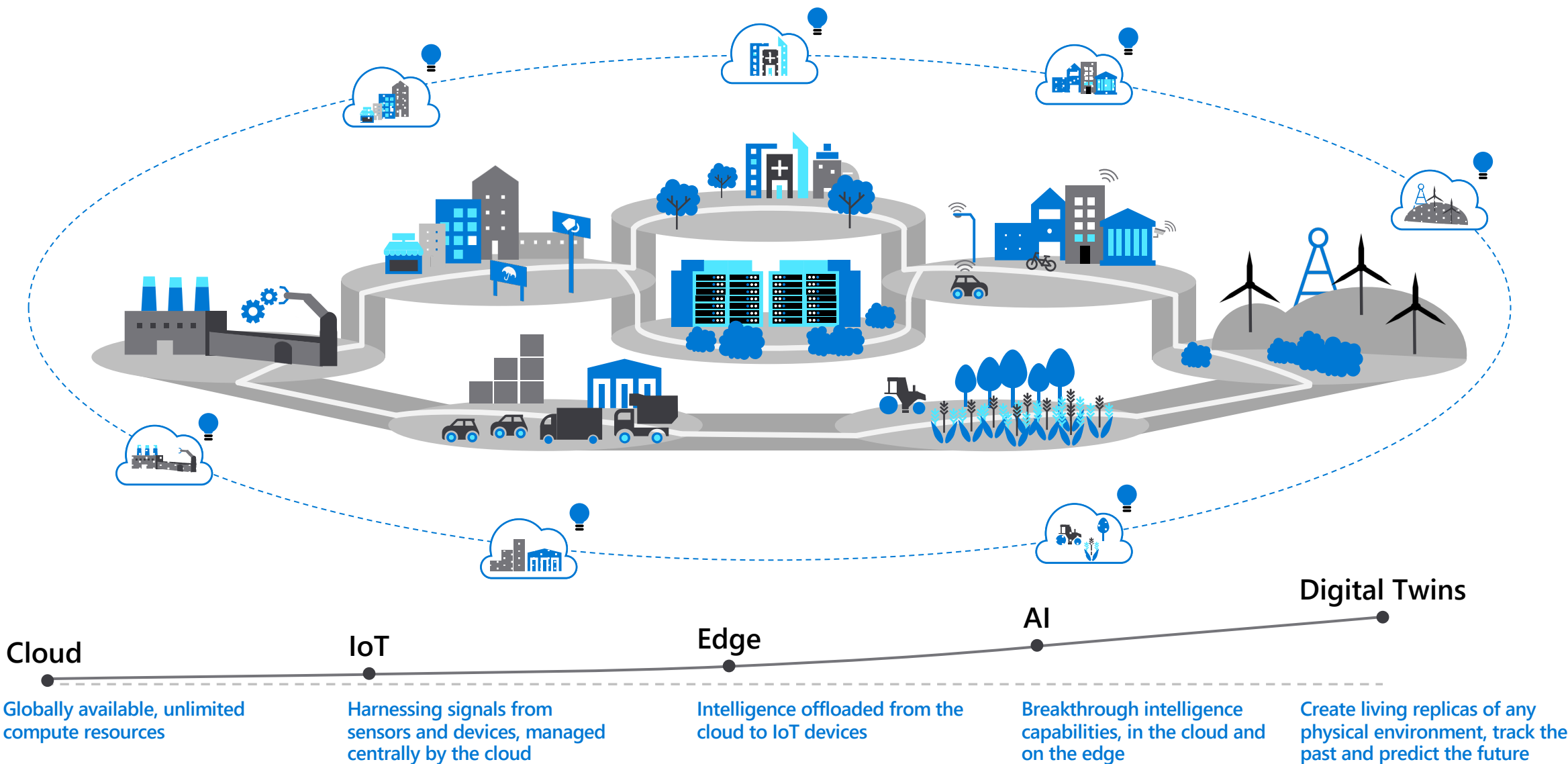
That's the motivation for bringing together all of our systems and people.

**Silicon in the edge to the silicon in the cloud architected as one workload that is distributed—**that's the challenge in front of us."

—Satya Nadella, Q&A Session, April 2018



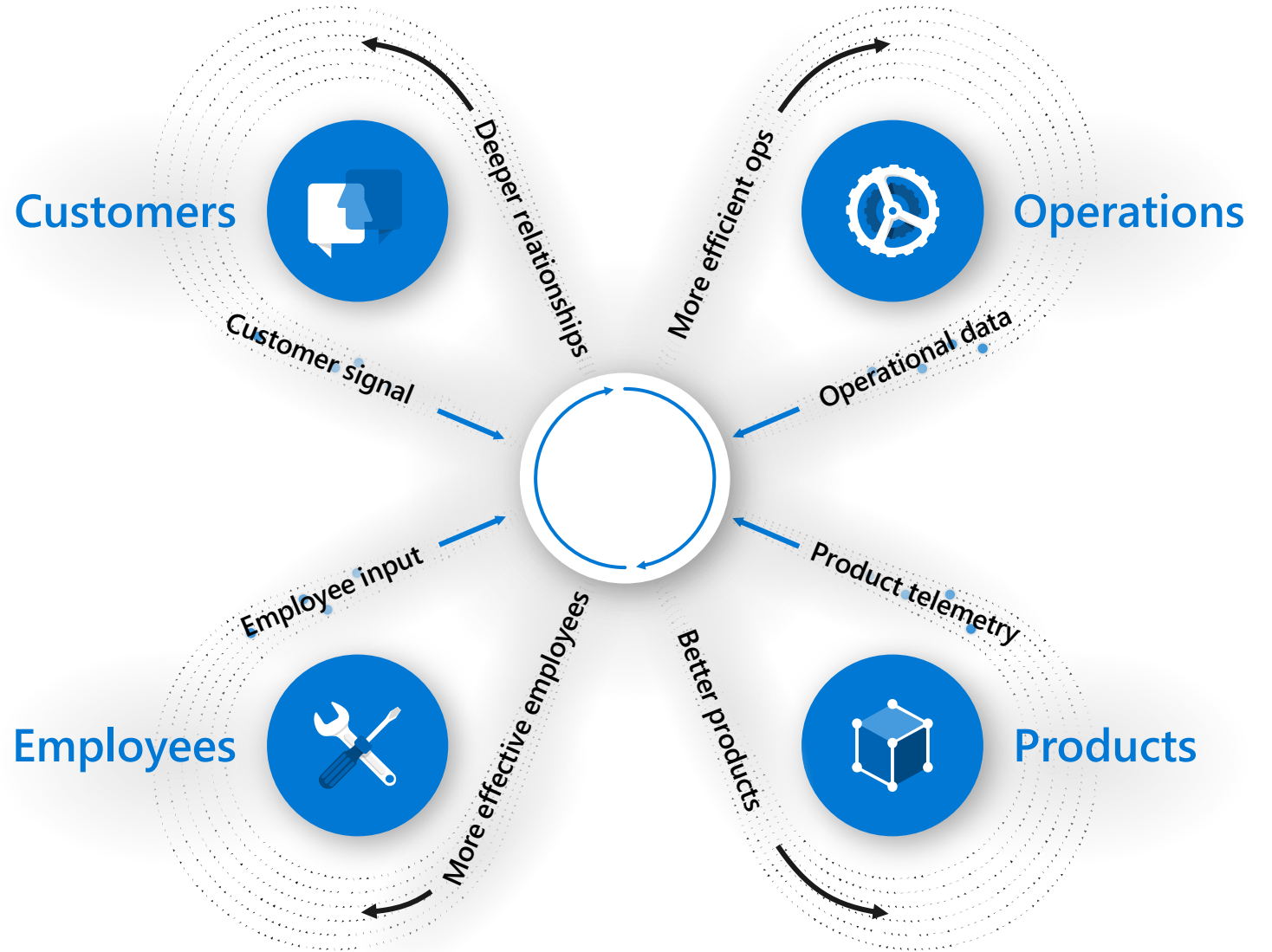
# Innovations enabling new opportunities





# These catalytic innovations enable a Digital Feedback Loop

- 1 Data: Capture digital signal across business
- 2 Insight: Connect and synthesize data
- 3 Action: Improve business outcomes



# Three emerging patterns of digital transformation



Customers are on a journey with **different digital maturity levels**



Build digital  
capabilities

Build digital  
businesses

## Modernization

Foundation for Digital Transformation

**Common initiatives:**

- Digital workplaces
- Digital customer experiences
- Transforming the infrastructure
- Application innovation

## Industry & horizontal

**Solution-centric opportunities**

**Industry Solution** examples:

- Predictive Maintenance, Customer Insights, Citizen Services

**Horizontal Solution** examples:

- Digital Marketing, Employee Self-Service, Smart Buildings, Security & Surveillance

## Transformational

**Reimagine their businesses**

CXO sponsorship

**Digital Maturity Model** assessment

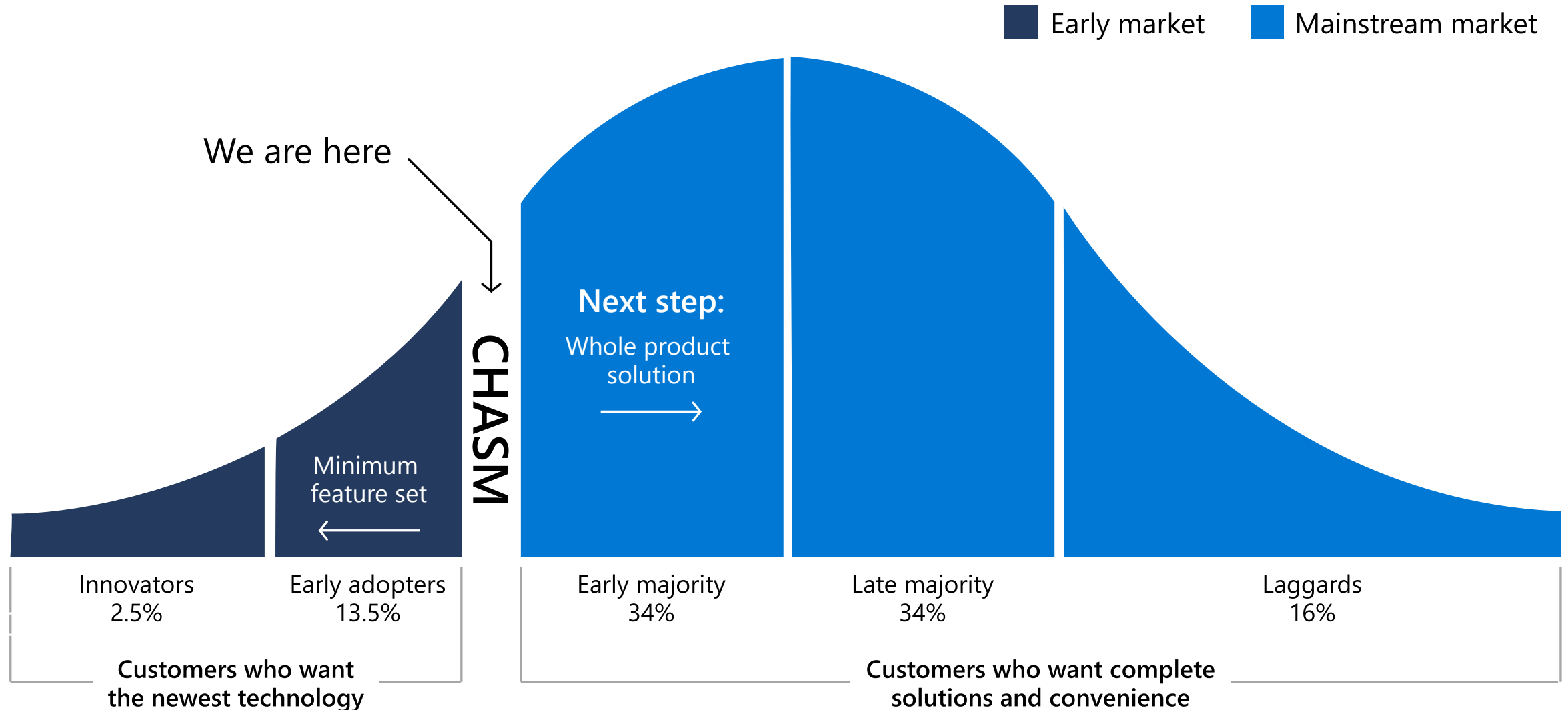
Comprehensive **program of change**

Evolves into new **commercial business models**



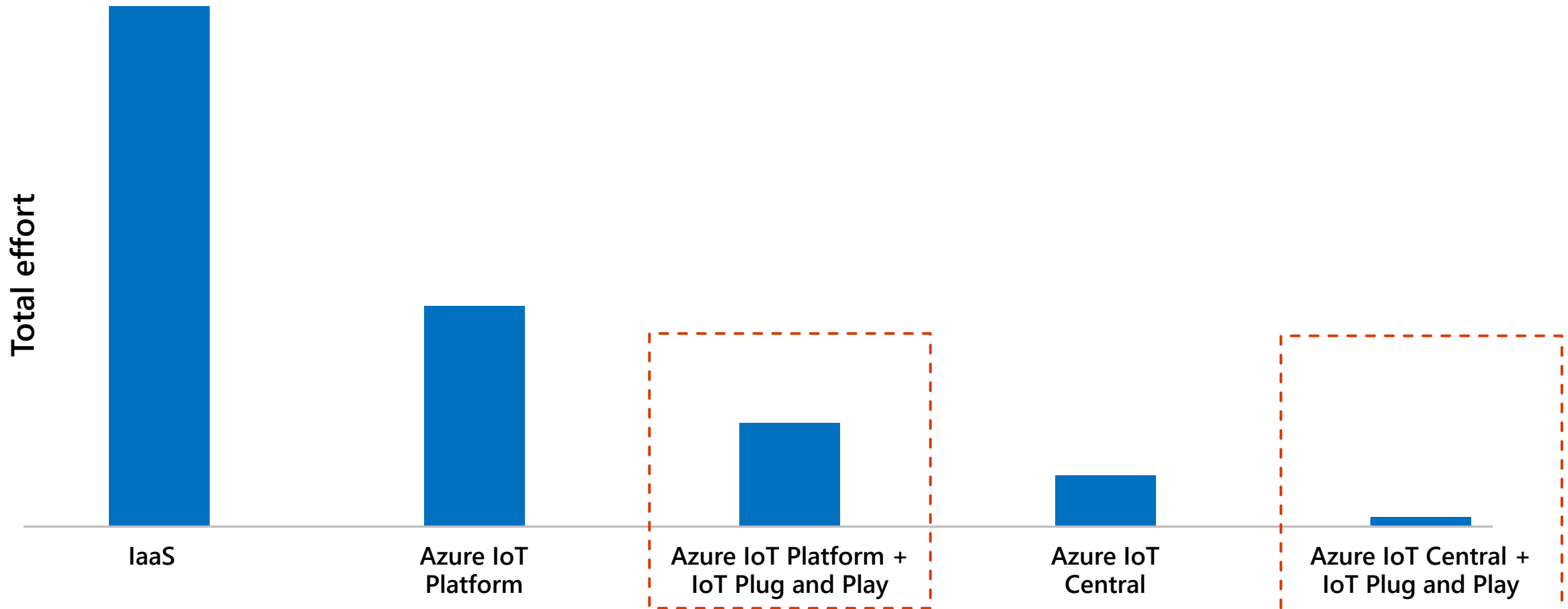
# Preparing for mainstream market customer needs in IoT

## Technology adoption lifecycle



# Accelerating IoT

The total effort to build and operate an IoT Solution is rapidly decreasing



# IoT partner value chain

IoT presents a unique opportunity to bring together multi-disciplinary partners



## End points

Silicon/Chip  
Manufacturers

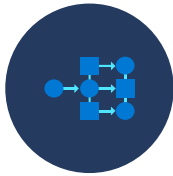
Gateway  
Manufacturers

M2M Modules

Device  
Manufacturers

Traditional OEMs

Device SIs



## Security

Software

Hardware

Regulatory  
experts

Privacy



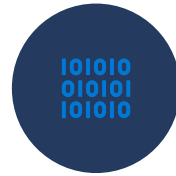
## Connectivity

Mobile Network  
Operators

Mobile Virtual  
Network  
Operators

Channel  
Development  
Providers

Application  
Enablement  
Platform ISVs



## Services

Solution  
Architecture

Solution  
Integrators

Service Providers

Presentation

Dashboarding

Big Data



## Business consultants

Consultants

Advisors

Professional  
Services

Industry  
Influencers



## Distributors

Aggregators

Scale through  
VARs



## Developers

ISV

In-house



## Regulators

Standards  
organizations

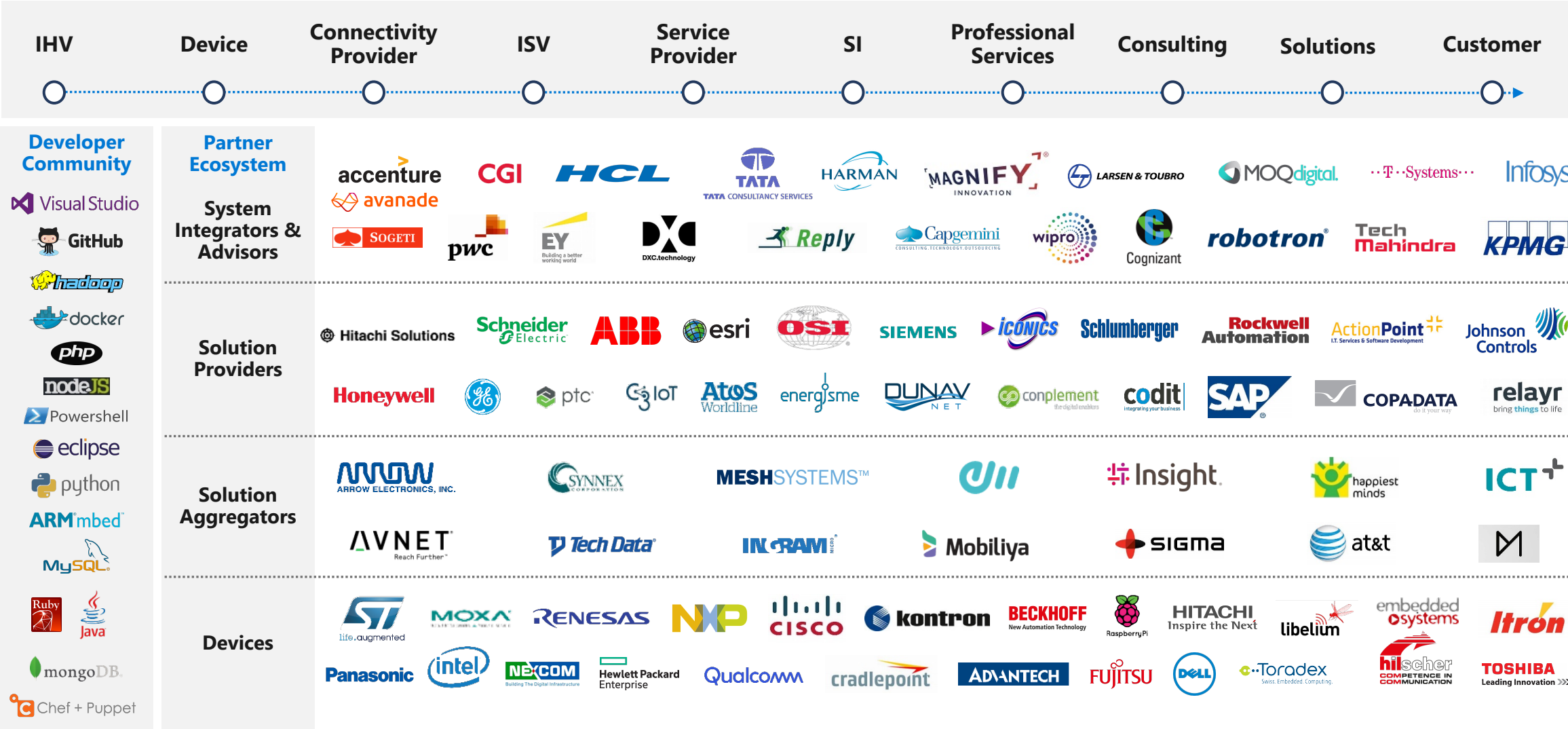
Industry Bodies

Accreditation  
organizations

Auditors



# IoT ecosystem momentum





Microsoft IoT platform  
innovations last year

> 100



Partner provided co-sell  
ready solutions

> 1,200



Ecosystem partners

> 10,000

# IoT vertical focus



## Manufacturing

Field Service  
Safety & Security  
Process & Quality  
Factory Automation



## Retail

Space & Assortment  
Inventory Mgmt.  
Personalization



## Healthcare

Patient Monitoring  
Research  
Supply Chain  
Operation Efficiency



## Energy

Oil & Gas  
Utilities  
Power Plants  
Environment Sensors



## Smart City/ Buildings

Security &  
Surveillance  
Monitoring & Safety  
Energy Mgmt.



## Agriculture

Soil Sensors  
Livestock  
Equipment  
Supply Chain  
Connectivity



# Customer momentum

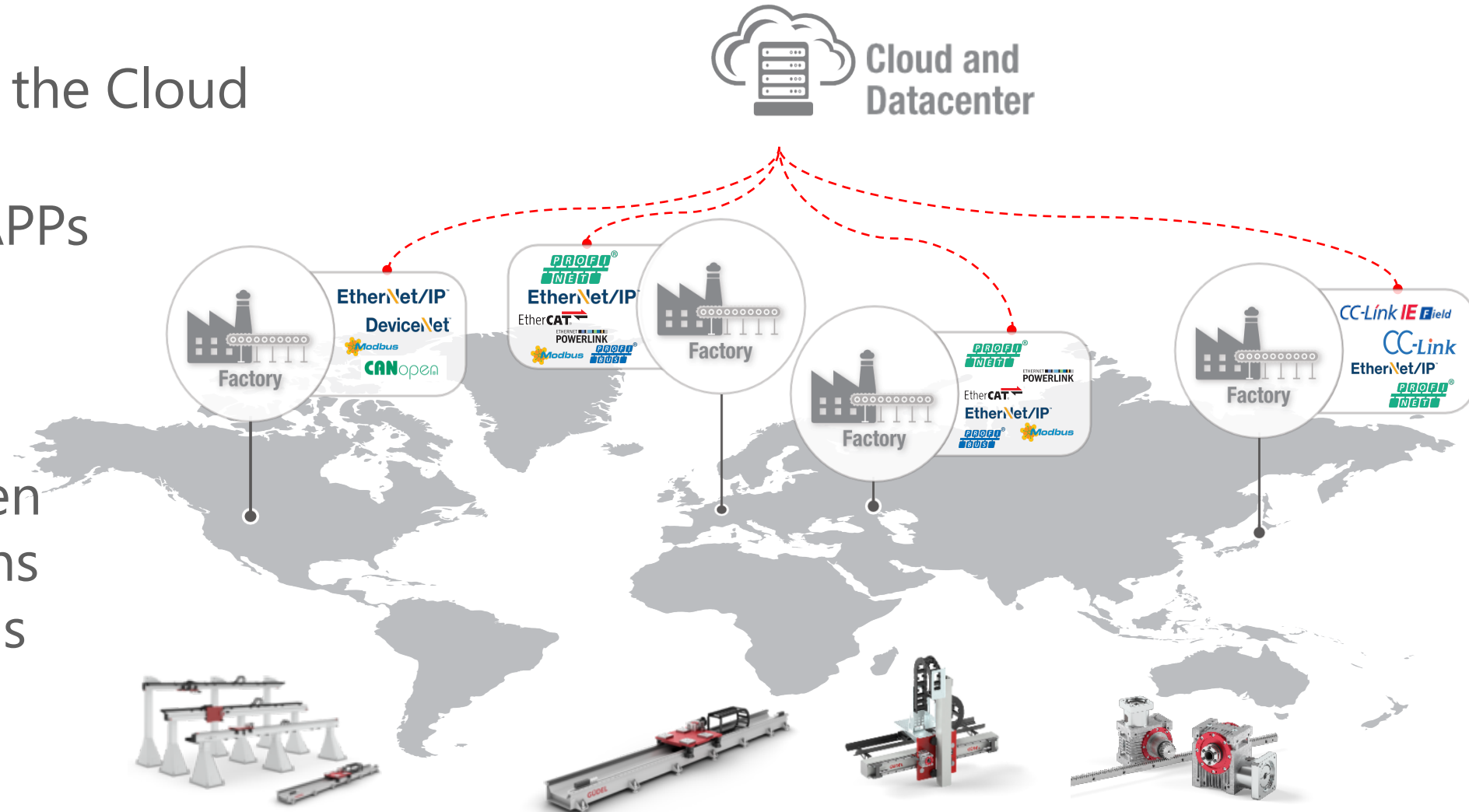
Hans-Jürgen Hilscher

# I4.0 Edge and Cloud Platforms in Automation

IOT in Action, Frankfurt 21. October 2019

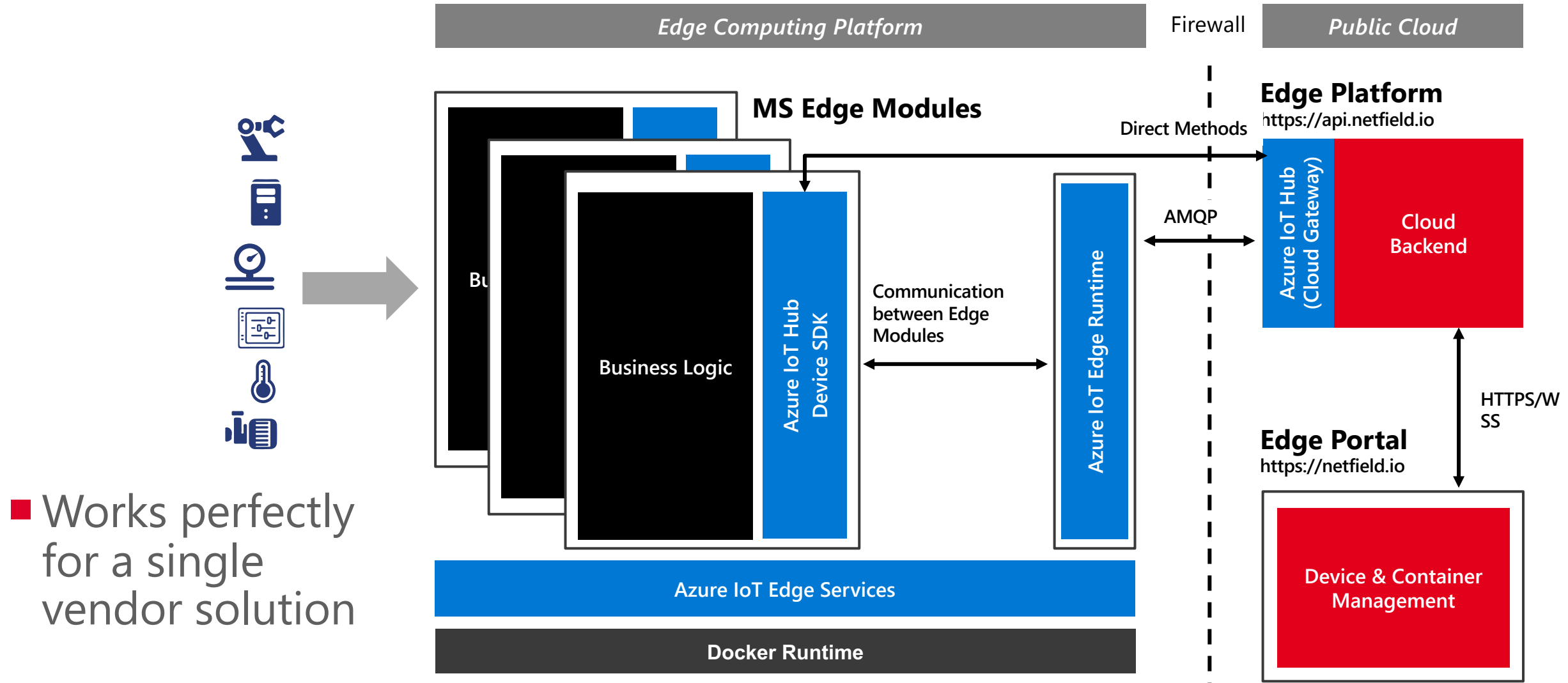
# OT / IT Connectivity as a Service

- From Sensor to the Cloud
- Plug and play
- Interoperable APPs
- Digital Twin
- Life Cycle Management
- Brown and green field applications
- Business models


































# From sensor to the cloud with Azure technology

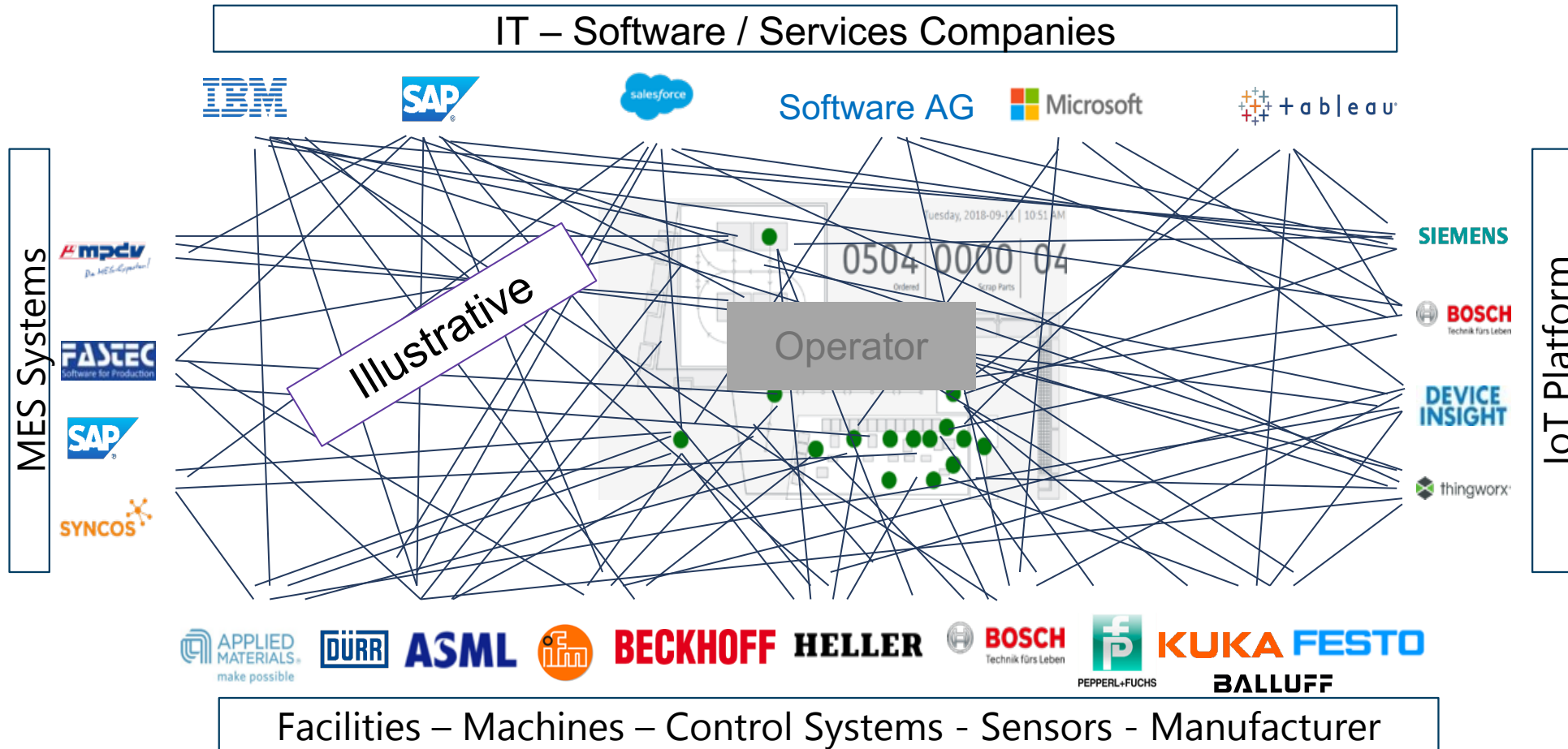


- Works perfectly for a single vendor solution

# Uses automation IoT platforms in Europe

 <b>ABB</b>	<b>FactoryTalk</b>	<b>ADAMOS</b> <small>ASM Assembly Systems</small>	<b>BAUDIS IoT</b> <small>BAUMÜLLER</small>	<b>TwinCAT IOT</b> <b>BECKHOFF</b>	 <b>bell howell</b>	 <b>BELIMO</b>	<b>ORACLE</b> <small>INTERNET OF THINGS</small> <b>rexroth</b> <small>A Bosch Company</small>
 <b>CAME</b>	 <b>DEMATiC</b>	 <b>EATON</b>	<b>Life-Cycle-Information Cloud</b> 	 <b>ELAU</b>	 <b>FANUC</b>	<b>Gaia-X</b> <b>FESTO</b>	<b>Galileo IoT Plattform</b> 
 <b>PREDIX</b> 	<b>HAHN ROBSHARE</b> <small>HAHN AUTOMATION</small>	<b>AXOOM</b> <b>TRUMPF</b>	<b>WebNMS IoT Platform</b> 	 <b>Honeywell</b>	 <b>Johnson Controls</b>	<b>KUKA</b>   Connect 	<b>i³SAAC</b> 
<b>Lenze.Digital</b> <b>Lenze</b>	 <b>MELCloud™</b> <small>MITSUBISHI ELECTRIC</small> <small>Changes for the Better</small>	 <b>MURR ELEKTRONIK</b>	 <b>CONFIGURATION MANAGEMENT</b> 	 <b>PHENIX</b>	<b>FactoryTalk</b> <b>Rockwell Automation</b>	<b>Sauter Cloud</b> <b>SAUTER</b>	 <small>Innovation At Every Level</small> <b>Schneider Electric</b>
 <b>SIEMENS</b>	 <b>SIGMATEK</b>	 <b>medius</b> <small>Control AP, Control Your Business.</small> <b>SMC</b>	<b>eXport Cloud Enterprise</b> <b>softing</b>	 <b>WAGO</b>	 <b>Weidmüller</b>	 <b>wieland</b>	<b>Yaskawa Cockpit</b> <b>YASKAWA</b>

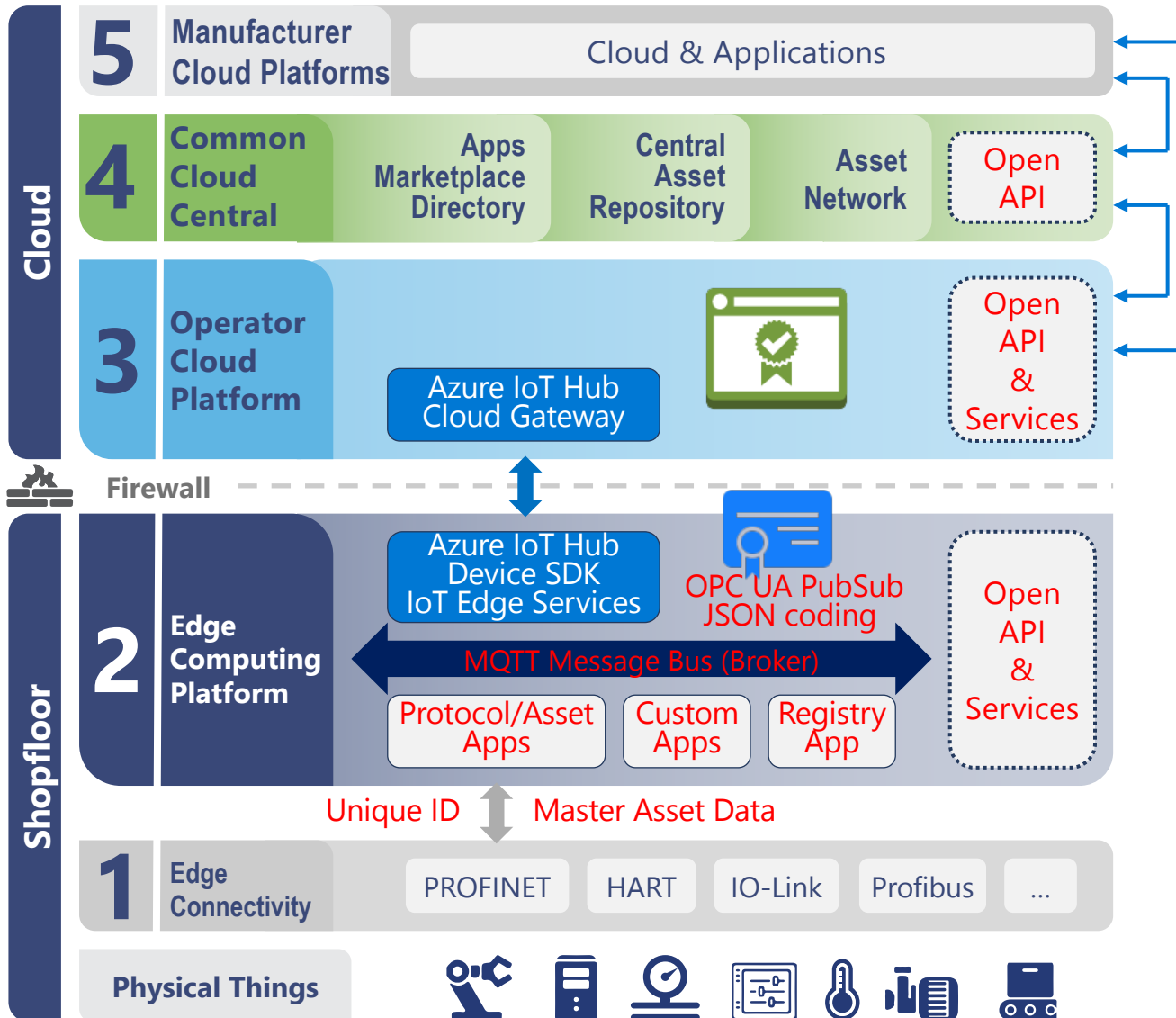
# Complexity of multivendor IT – OT integration



- This is not scalable in heterogeneous multivendor plants



# Industry 4.0 multivendor IoT platform solutions

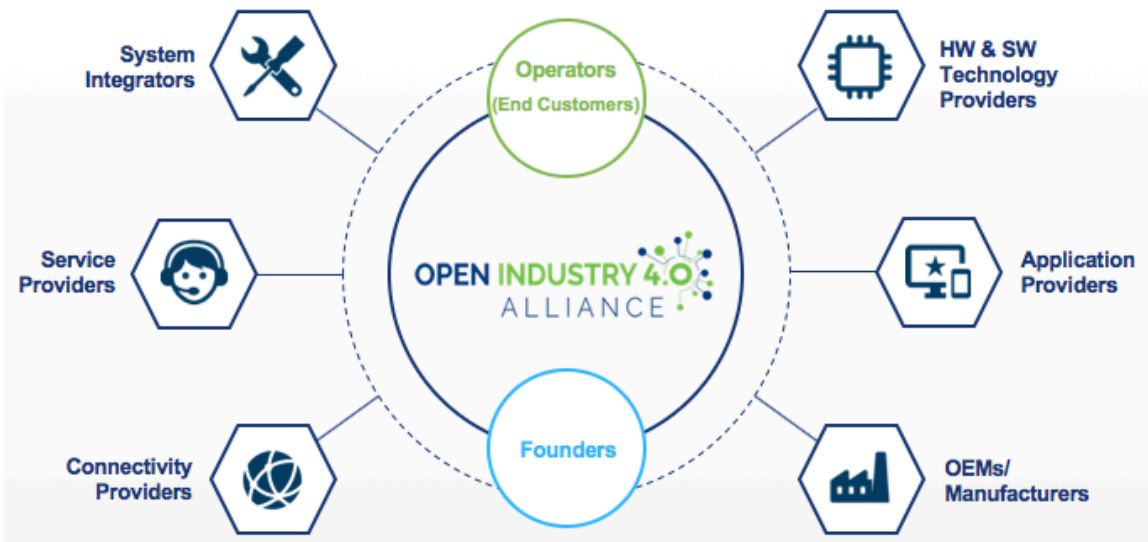


- Automatic device detection and generating of an Unique ID
- Generic Master Asset description
- Container based Edge System
- Message Bus between Apps
- Standardize Communication and Information System
- Standardize Cloud to Cloud APIs
- System wide Security (PKI)

# Following the success of fieldbus organizations



Industry 4.0 relevant companies-with their interoperable solutions and services-committed to deliver customer value



## Founding Members

BECKHOFF

E+H  
Endress+Hauser  
People for Process Automation

hilscher  
COMPETENCE IN  
COMMUNICATION



KUKA

MULTIVAC  
BETTER PACKAGING



VOITH

## Members

awinia  
software consulting & development

BALLUFF

CAPTRON  
Sensortechnologie

CAXperts

cedalo AG  
Orchestrating IoT and the Digital Industry

HENGSTLER | FORTIVE

FUJITSU



EDGE  
CLOUD

HENSOLDT  
Sensors and Process

itelligence

IT-Informatik

KAESER  
KOMPRESSOREN

komax

NEXIOT

PEPPERL+FUCHS

QSC AG

Q-loud  
Ein Unternehmen der QSC AG

samson

schwa

SCHUNK

SICK  
Sensor Intelligence.

SMC

software AG  
Freedom as a Service

TREIBING + HIMSTEDT

weber

WIKAL

3DSignals

MACHIQ

SCHMIDTSCHACK | ARVOS

AUCOTEC

schneider

We want the vision of Industry 4.0 to become reality,  
a common open ecosystem using industrial standards  
is our strategy...

...there are many other IoT Platforms with a strategy  
that goes in the opposite direction

*Hans-Jürgen Hilscher*

CEO Hilscher Gesellschaft für Systemautomation mbH  
and Technical Lead of the Open Industry 4.0 Alliance

For more information

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[www.hilscher.com](http://www.hilscher.com)

[www.OpenIndustry4.com/contactus](http://www.OpenIndustry4.com/contactus)

So what's stopping  
**you** from making  
*things* happen?





