EUROTECH
Imagine. Build. Succeed.

Internet of Things
the new engine of Innovation

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Udine – 4RI

5 maggio 2016

GLI EFFETTI DELLA CRISI

30% DI PRODUZIONE INDUSTRIALE PERSA

25% DI CAPACITÀ PRODUTTIVA DISTRUTTA

250.000 POSTI DI LAVORO CANCELLATI

... I NUMERI DI UNA GUERRA ...

NIENTE SARA' PIU' COME PRIMA

National Power Index

Rank	2010	2020	2030	2040	2050	2060
1	United States	United States	China	China	China	China
2	China	China	United States	United States	United States	India
3	India	India	India	India	India	United States
4	Japan	Japan	Japan	Japan	Indonesia	Indonesia
5	Germany	Germany	Russia	Russia	Japan	Brazil
6	United Kingdom	Russia	Germany	Brazil	Brazil	Japan
7	France	United Kingdom	Brazil	Indonesia	Russia	Pakistan
8	Russia	Brazil	United Kingdom	Germany	United Kingdom	Russia
9	Brazil	France	France	United Kingdom	Pakistan	United Kingdom
10	Italy	South Korea	Indonesia	Saudi Arabia	Germany	Germany
Rank	2010	2020	2030	2040	2050	2060
11	South Korea	Indonesia	Saudi Arabia	France	Saudi Arabia	France
12	Indonesia	Italy	South Korea	Mexico	France	Nigeria
13	Mexico	Saudi Arabia	Mexico	Pakistan	Mexico	Saudi Arabia
14	Canada	Mexico	Turkey	Turkey	Nigeria	Mexico
15	Burma	Canada	Italy	South Korea	Turkey	Turkey
16	Spain	Pakistan	Pakistan	Nigeria	South Korea	Bangladesh
17	Saudi Arabia	Turkey	Canada	Canada	Bangladesh	Ethiopia
18	Turkey	Spain	Nigeria	Italy	Canada	South Korea
19	Pakistan	Nigeria	Burma	Bangladesh	Australia	Philippines
20	Nigeria	Australia	Australia	Australia	Philippines	Canada

TOP Business Priorities, by Industry

☐ Highest-ranked priorities

Priorities: 1-3 years	Aviation	Wind	Power Generation	Power Distribution	Oil & Gas	Rail	Manufacturing	Mining
Increase profitability through improved resource management	61%	71%	56%	59%	56%	67%	58%	55%
Gain a competitive edge	58%	55%	53%	69%	50%	50%	76%	48%
Improve environmental safety and emissions	39%	61%	50%	75%	59%	43%	52%	58%
Gain insights into customer behaviors, preferences and trends	58%	61%	47%	56%	38%	60%	70%	39%
Gain insights into equipment health for improved maintenance	55%	48%	34%	56%	47%	73%	67%	39%
Drive operational improvements and workforce efficiencies	42%	48%	41%	72%	44%	53%	55%	64%
Create new business opportunities with new revenue streams	45%	61%	34%	53%	47%	40%	52%	58%
Meet or exceed regulatory compliance	32%	39%	41%	63%	50%	33%	39%	39%

IoT the driver of Business Innovation

better products,

new services and

the outcome economy

Over time :

the enabler for the "Uberization" of everything
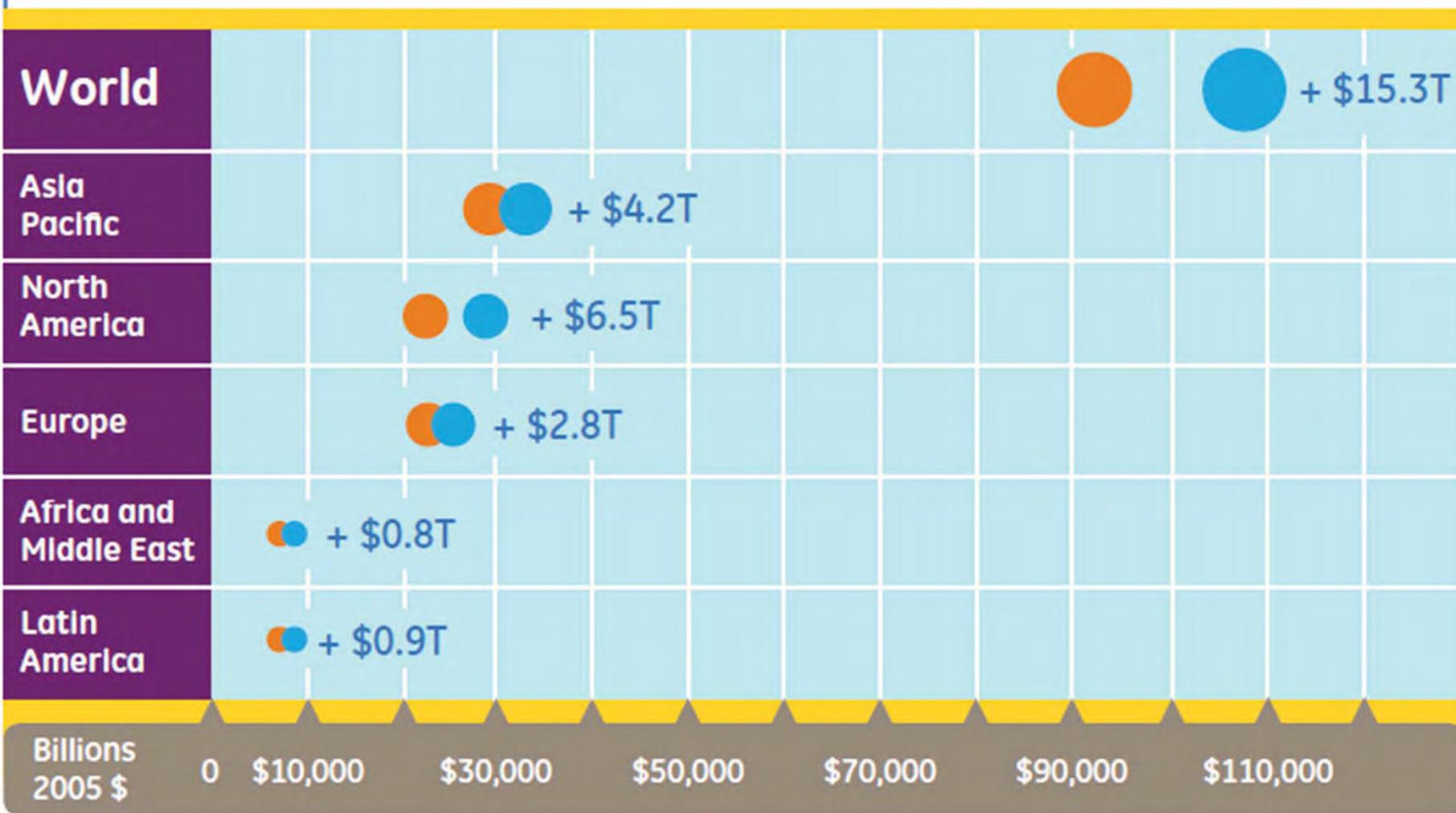
The massive size and growth of IoT

IoT Market Size (by 2025)	Connected Devices (by 2020)	Data Growth (2013 vs 2020)
McKinsey&Company **$6.1T**	Gartner **26B**	IDC **Total Data** 4.4ZB ➡ 44.4ZB **10x**
IDC **$7.1T**	IDC **32B**	**IoT Data** .09ZB ➡ 4.4ZB **49x**
CISCO **$14.4T**	CISCO **50B**	

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GDP in 2030

● 2030 Baseline　● 2030 Industrial Internet

Region		
World		+ $15.3T
Asia Pacific		+ $4.2T
North America		+ $6.5T
Europe		+ $2.8T
Africa and Middle East		+ $0.8T
Latin America		+ $0.9T

Billions 2005 $ — 0　$10,000　$30,000　$50,000　$70,000　$90,000　$110,000

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The Pervasive Computer

Machine-2-Machine / Internet of Things applications everywhere…
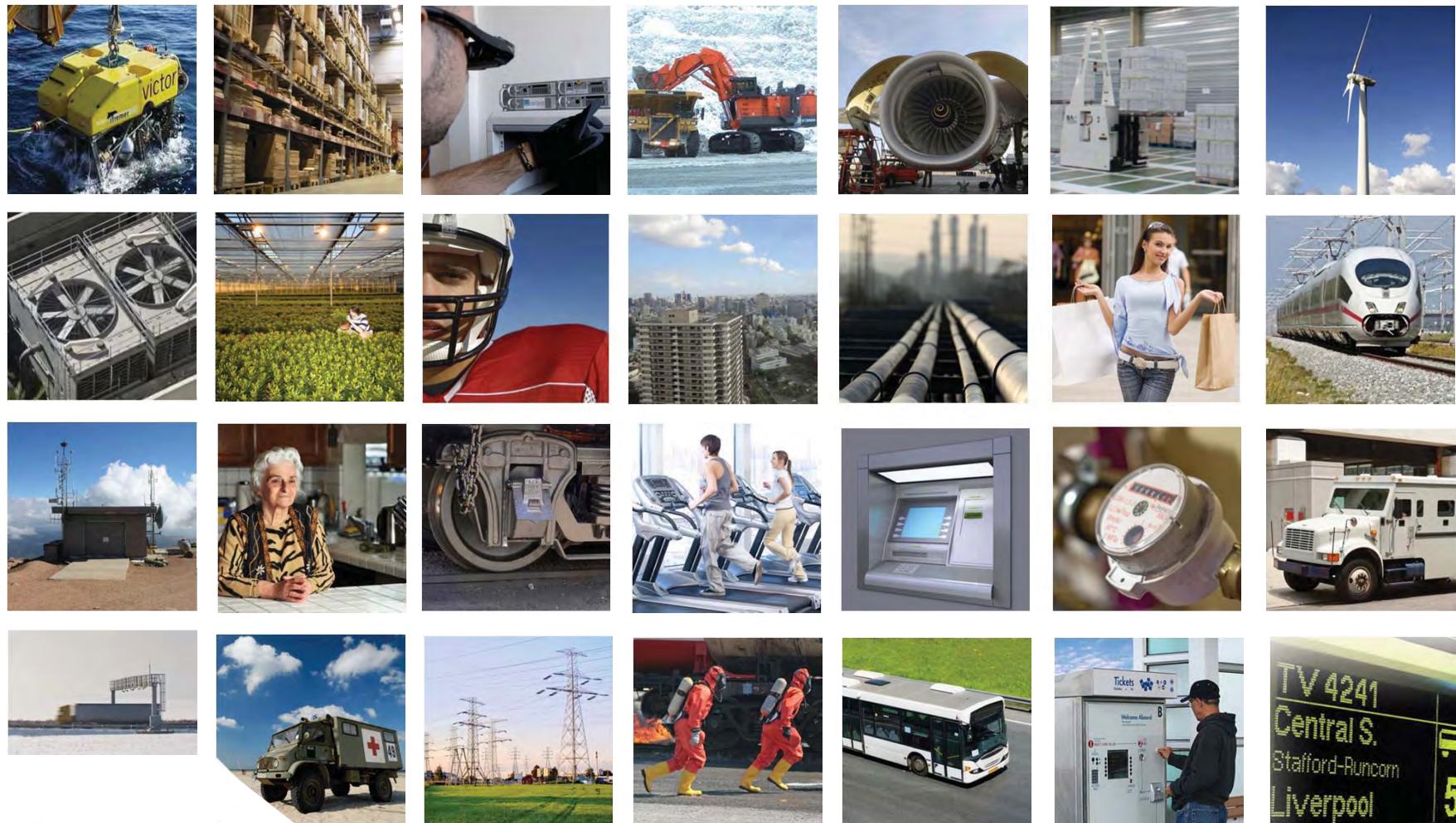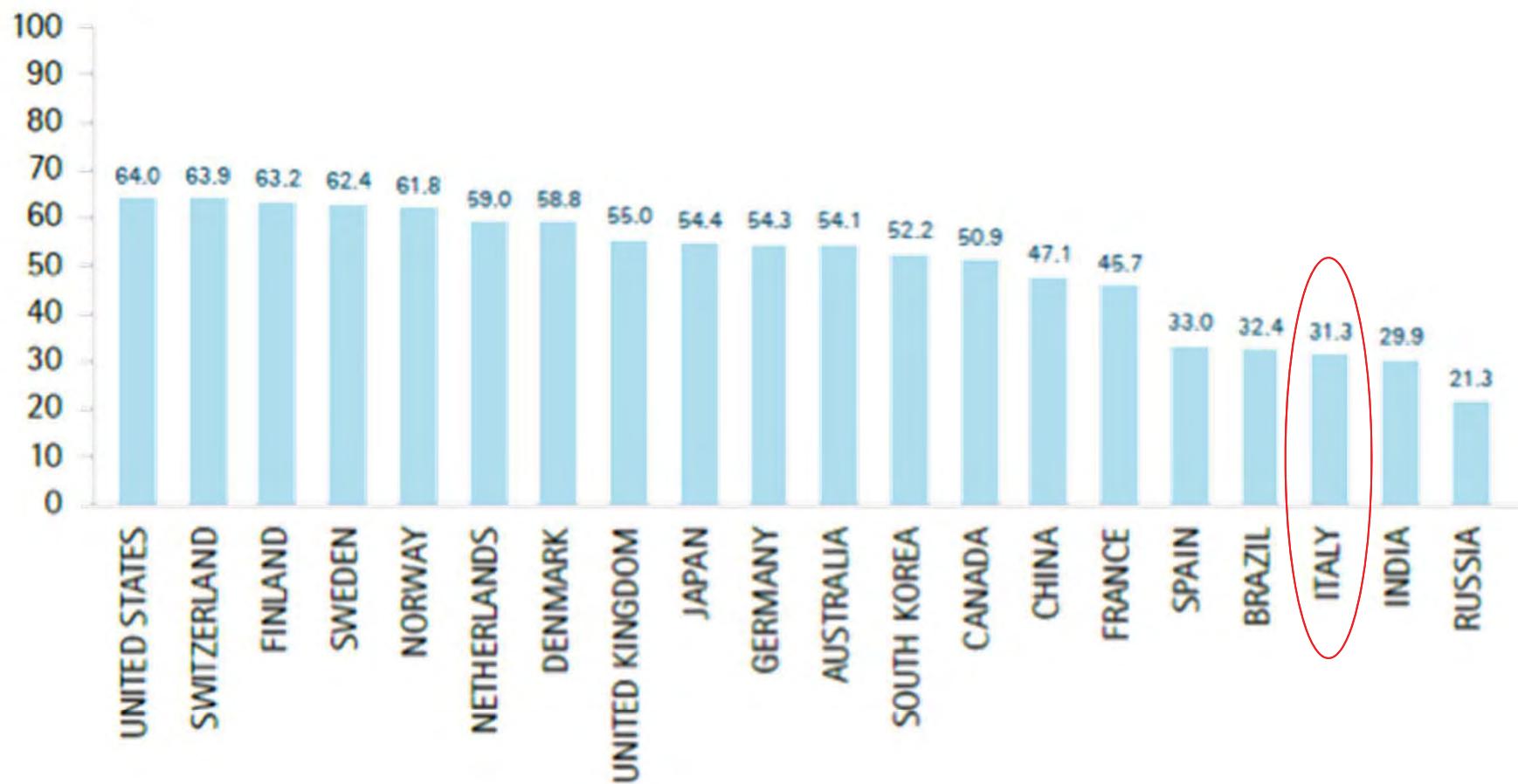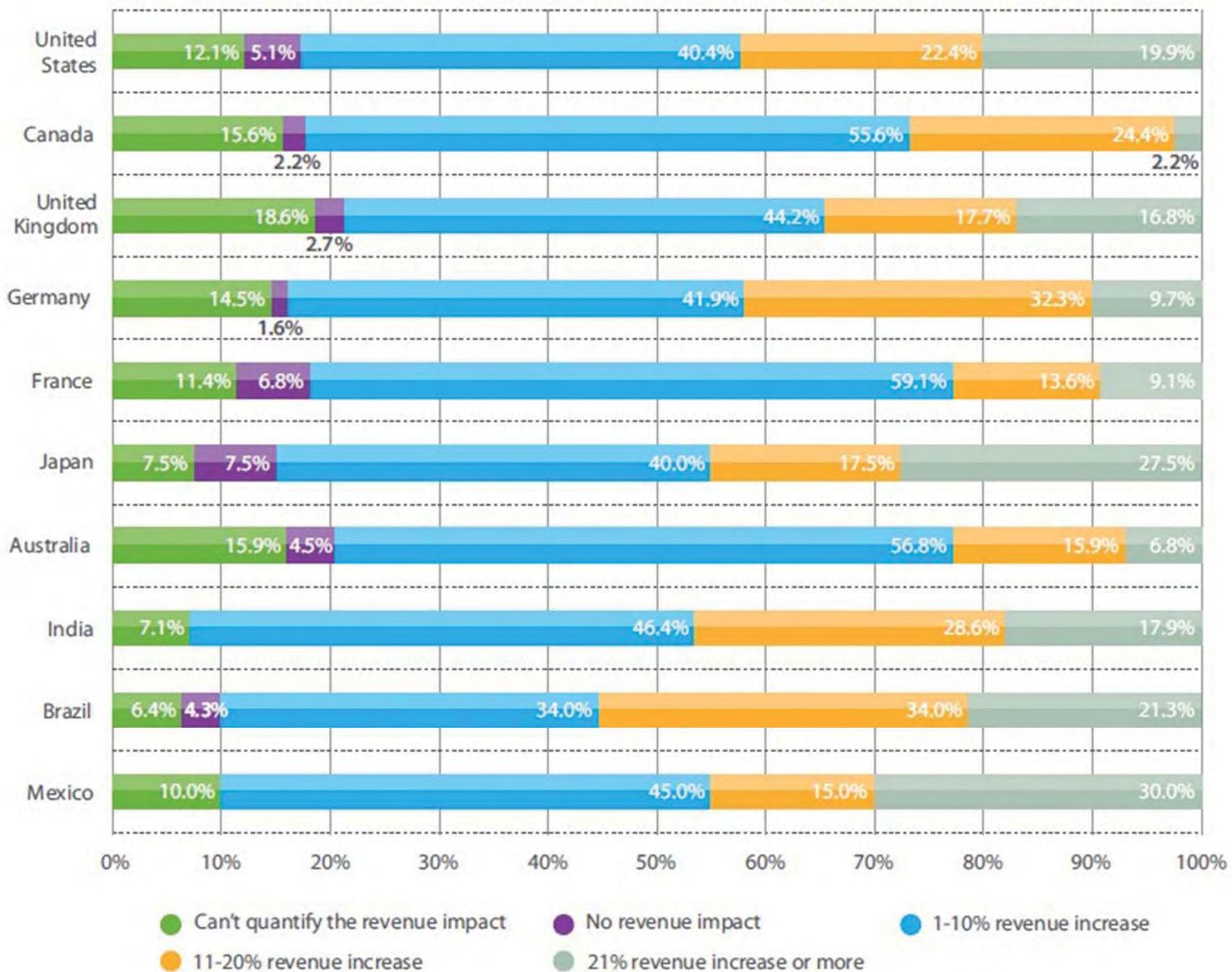
**Figure 2.** Rankings of countries' Industrial Internet of Things enabling factors

NAC SCORE

Country	NAC Score
UNITED STATES	64.0
SWITZERLAND	63.9
FINLAND	63.2
SWEDEN	62.4
NORWAY	61.8
NETHERLANDS	59.0
DENMARK	58.8
UNITED KINGDOM	55.0
JAPAN	54.4
GERMANY	54.3
AUSTRALIA	54.1
SOUTH KOREA	52.2
CANADA	50.9
CHINA	47.1
FRANCE	45.7
SPAIN	33.0
BRAZIL	32.4
ITALY	31.3
INDIA	29.9
RUSSIA	21.3

Source: Accenture and Frontier Economics
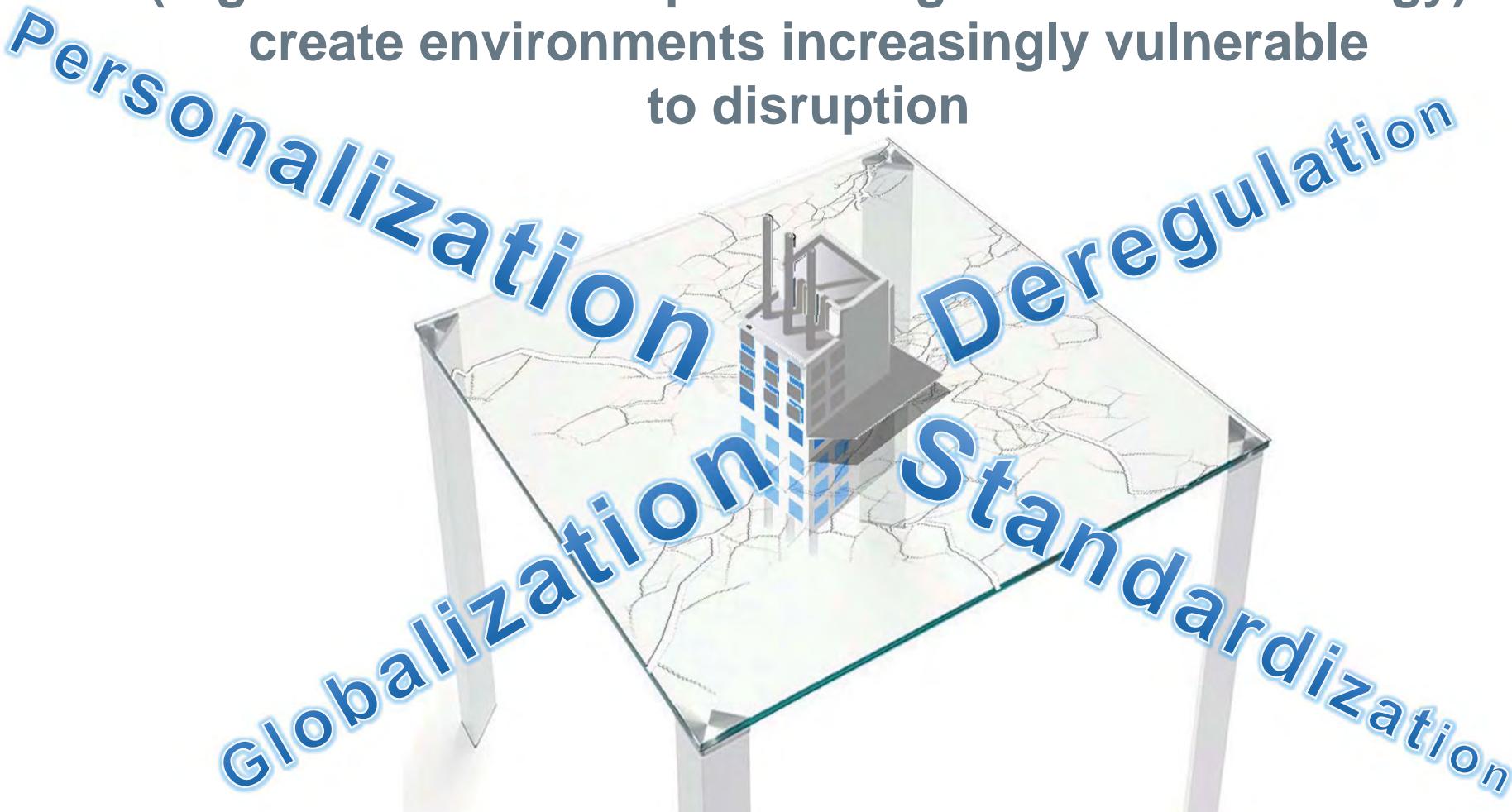
Q12B (Countries): Average Per-Company Revenue Impact of IoT Initiatives (2014 vs. 2013)

Country	Can't quantify the revenue impact	No revenue impact	1-10% revenue increase	11-20% revenue increase	21% revenue increase or more
United States	12.1%	5.1%	40.4%	22.4%	19.9%
Canada	15.6%	2.2%	55.6%	24.4%	2.2%
United Kingdom	18.6%	2.7%	44.2%	17.7%	16.8%
Germany	14.5%	1.6%	41.9%	32.3%	9.7%
France	11.4%	6.8%	59.1%	13.6%	9.1%
Japan	7.5%	7.5%	40.0%	17.5%	27.5%
Australia	15.9%	4.5%	56.8%	15.9%	6.8%
India	7.1%		46.4%	28.6%	17.9%
Brazil	6.4%	4.3%	34.0%	34.0%	21.3%
Mexico	10.0%		45.0%	15.0%	30.0%

Legend:
- Can't quantify the revenue impact
- No revenue impact
- 1-10% revenue increase
- 11-20% revenue increase
- 21% revenue increase or more

The Innovation Imperative
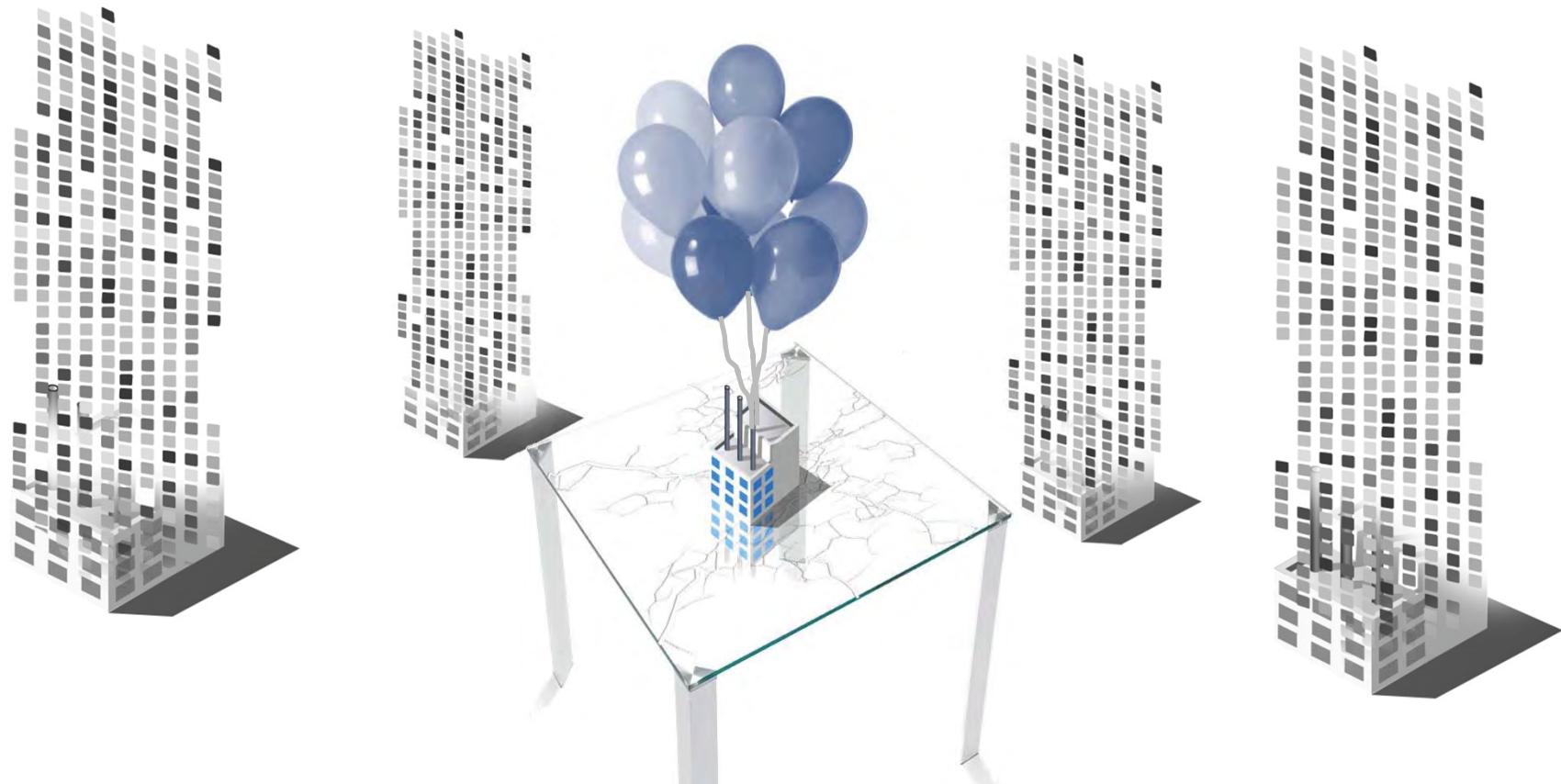
These forces
(together with the exponential growth of technology)
create environments increasingly vulnerable
to disruption

Personalization

Deregulation

Globalization

Standardization

Innovator Dilemmas:

Products Dematerialization & Value Chains Deconstruction

Companies in every industry need to assume that a software revolution is coming…

Marc Andreessen

Data and the 4^ Industrial Revolution

Data are the new raw material:
new source of innovation &
lever to achieve business sustainability.

GE CEO Jeff Immelt told his troops last year:

"If you went to bed last night as an <u>industrial company</u>, you're going to wake up this morning as a <u>software and analytics company</u>."

Jeff Immelt
Chairman & CEO, GE   @JeffImmelt

powered by GE

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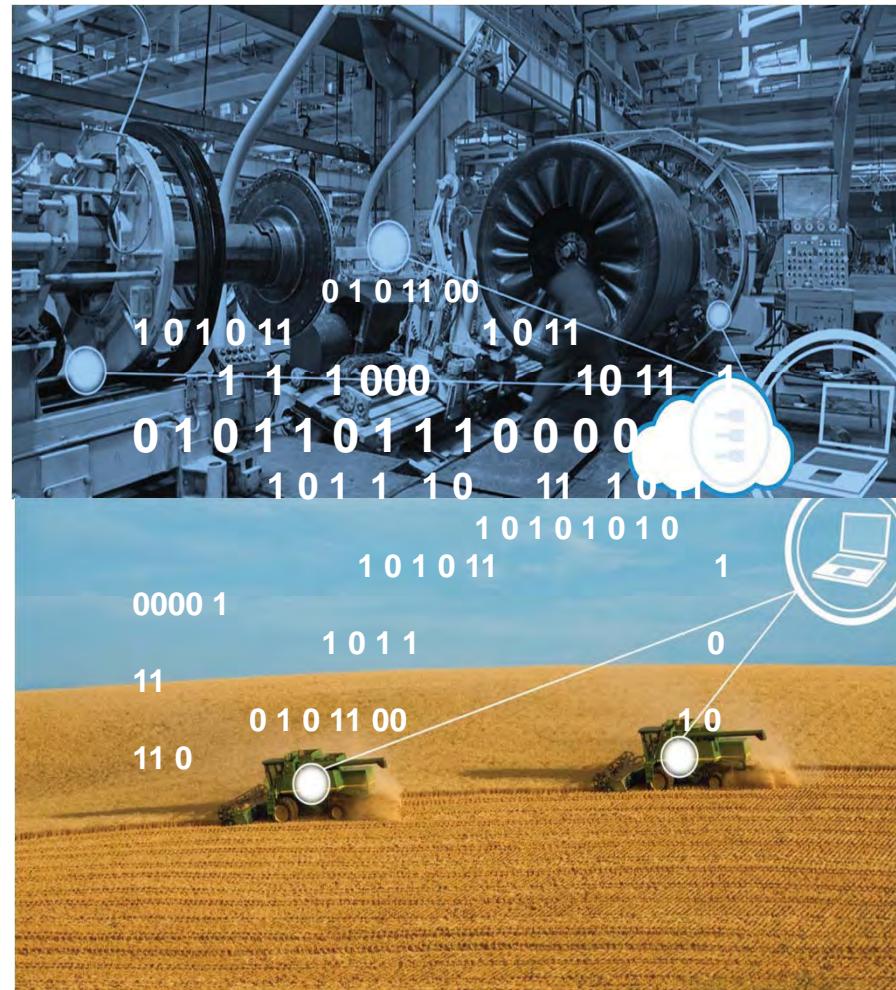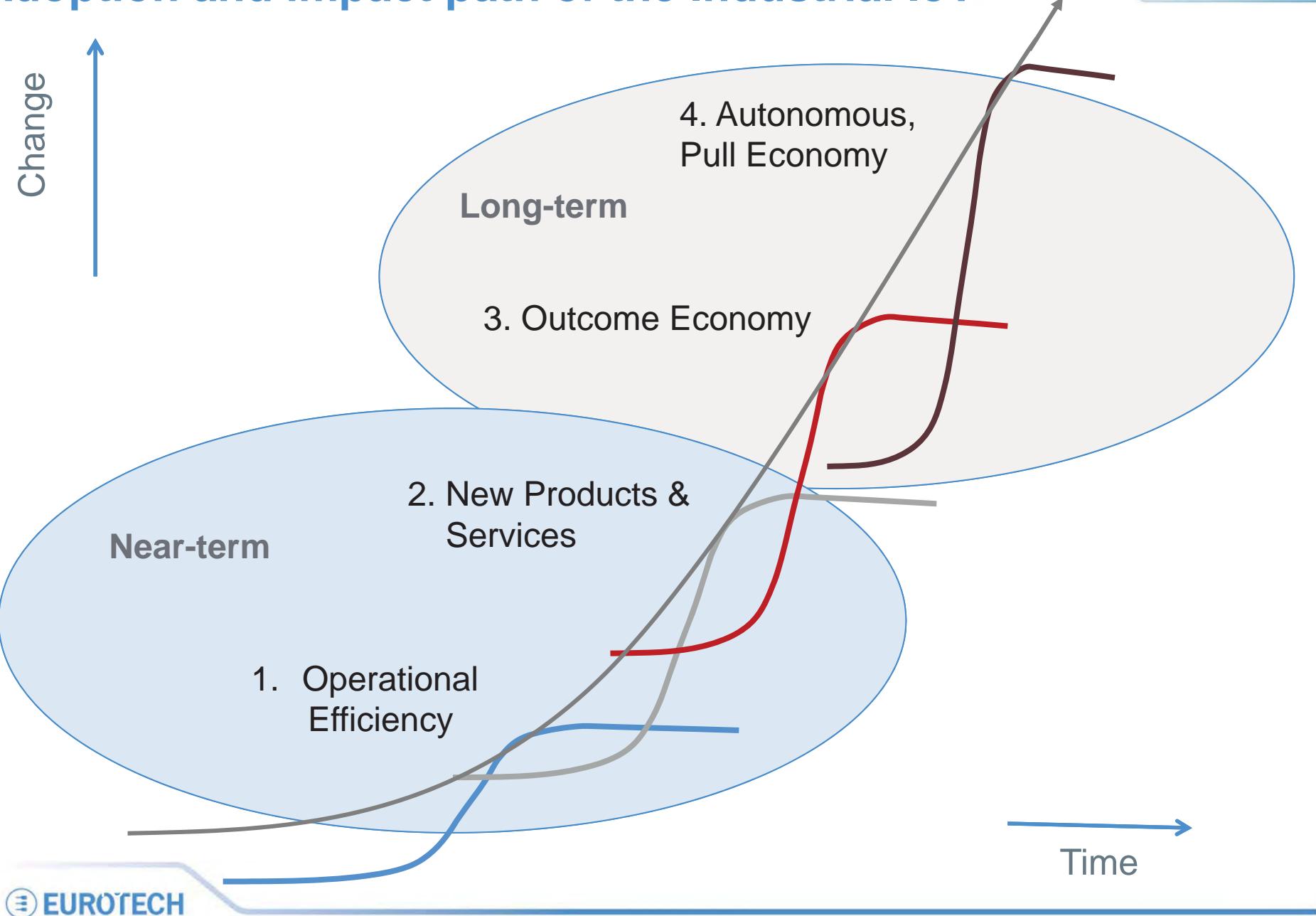
Transition = Business Disruption

i.e. New value creation

- Improve operational efficiency

- New connected ecosystems

- Collaboration between humans and machines

- Emergence of an outcome economy

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Adoption and impact path of the Industrial IoT

Change

Long-term

4. Autonomous, Pull Economy

3. Outcome Economy

Near-term

2. New Products & Services

1. Operational Efficiency

Time

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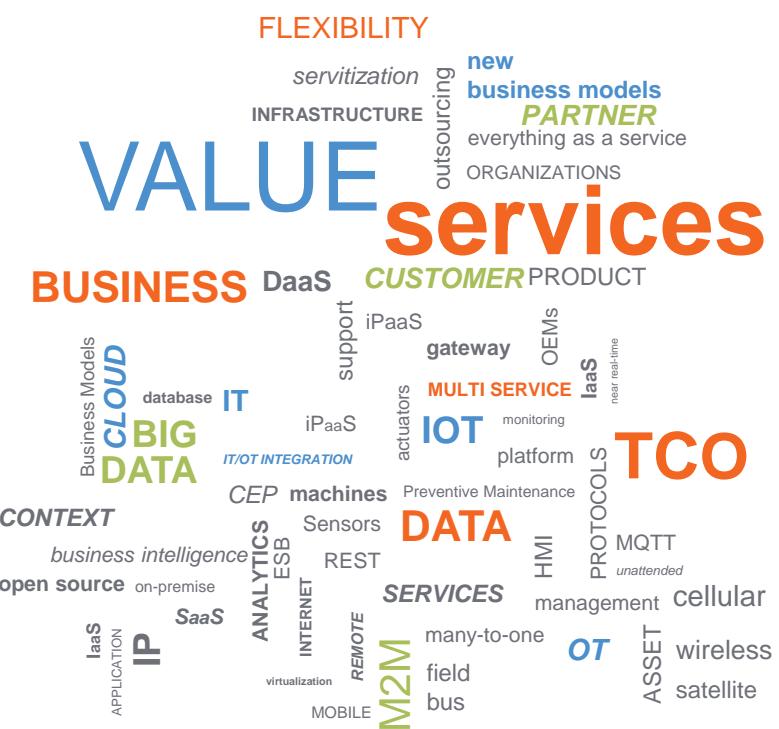
Fundamental Business Model Shift

Servitization

is happening in almost all industries on a global scale

products evolve to integrated «bundles» of services
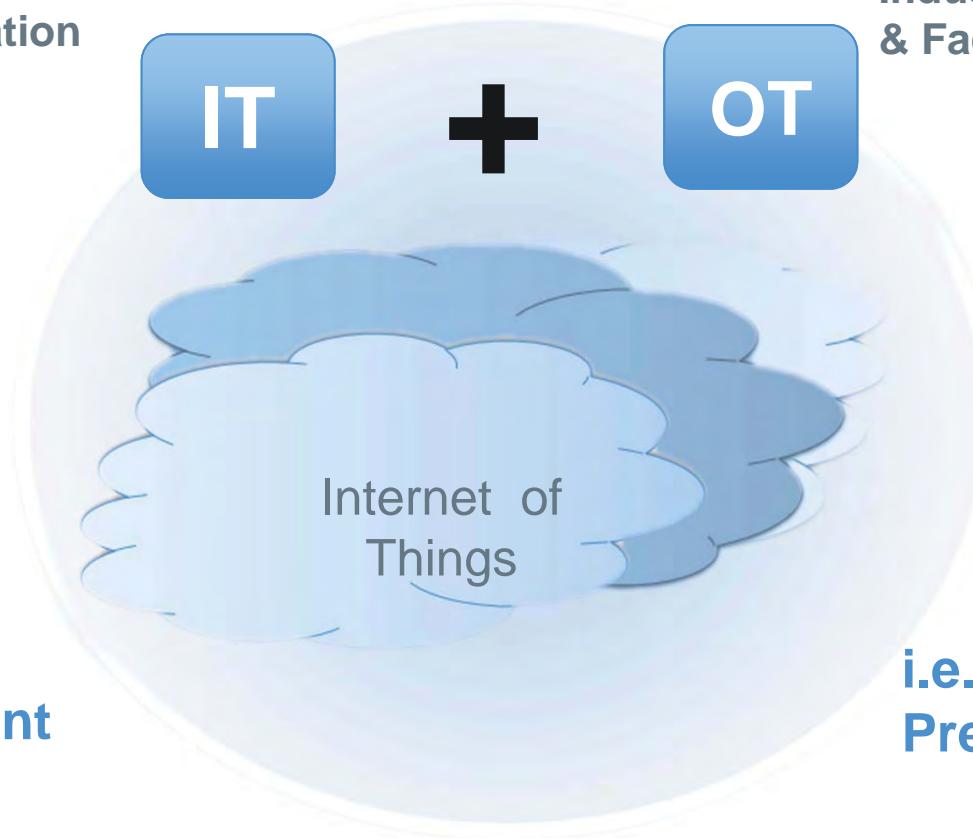
Industry needs to combine IT and OT

IoT is the fusion of IT & OT

Information Technology
Business Process Automation
& Office Automation

Operational Technology
Industrial Process Automation
& Factory Automation

IT **+** **OT**

Internet of Things
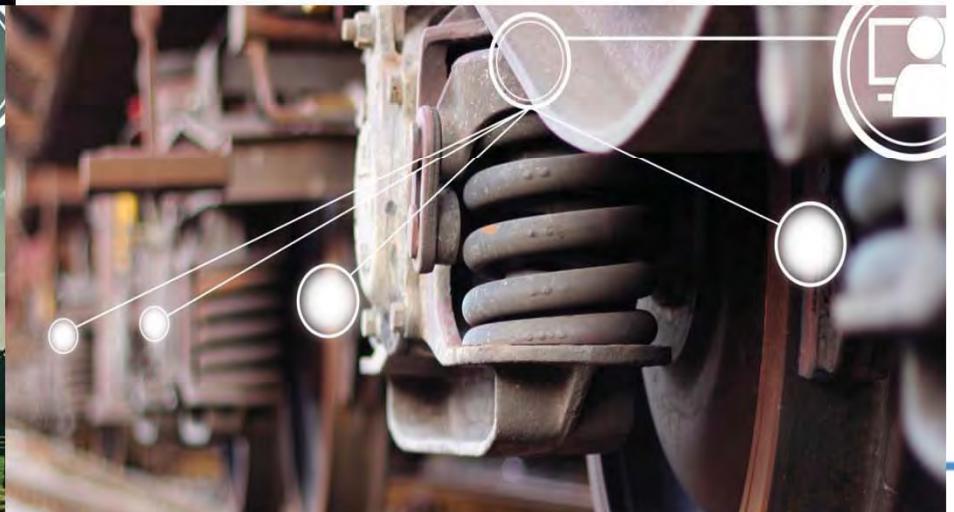
i.e:
Engagement

i.e.:
Predictive Maintenance

OT business opportunities
because of IT integration
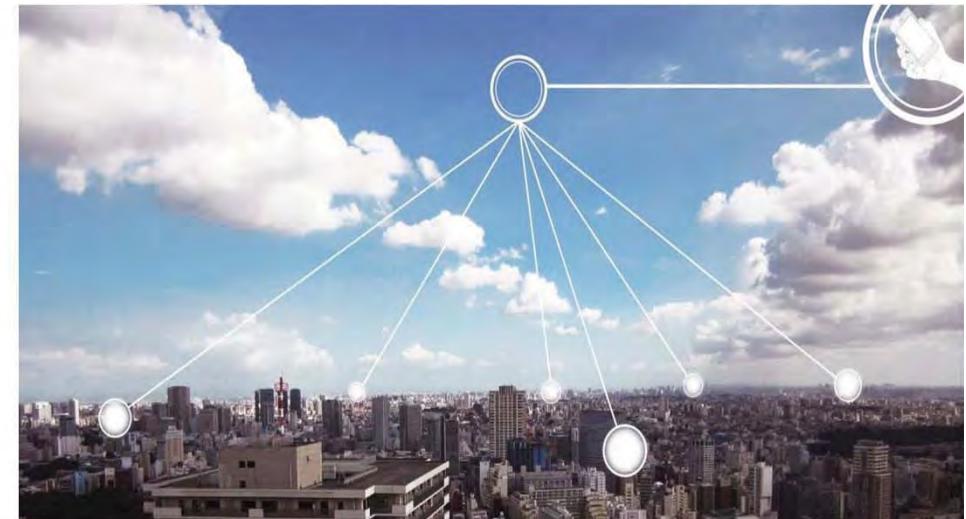
- Predictive Maintenance
- Remote Assets Monitoring Performance Management
- Operational Efficiency and Productivity Gains
- New More Performing Products
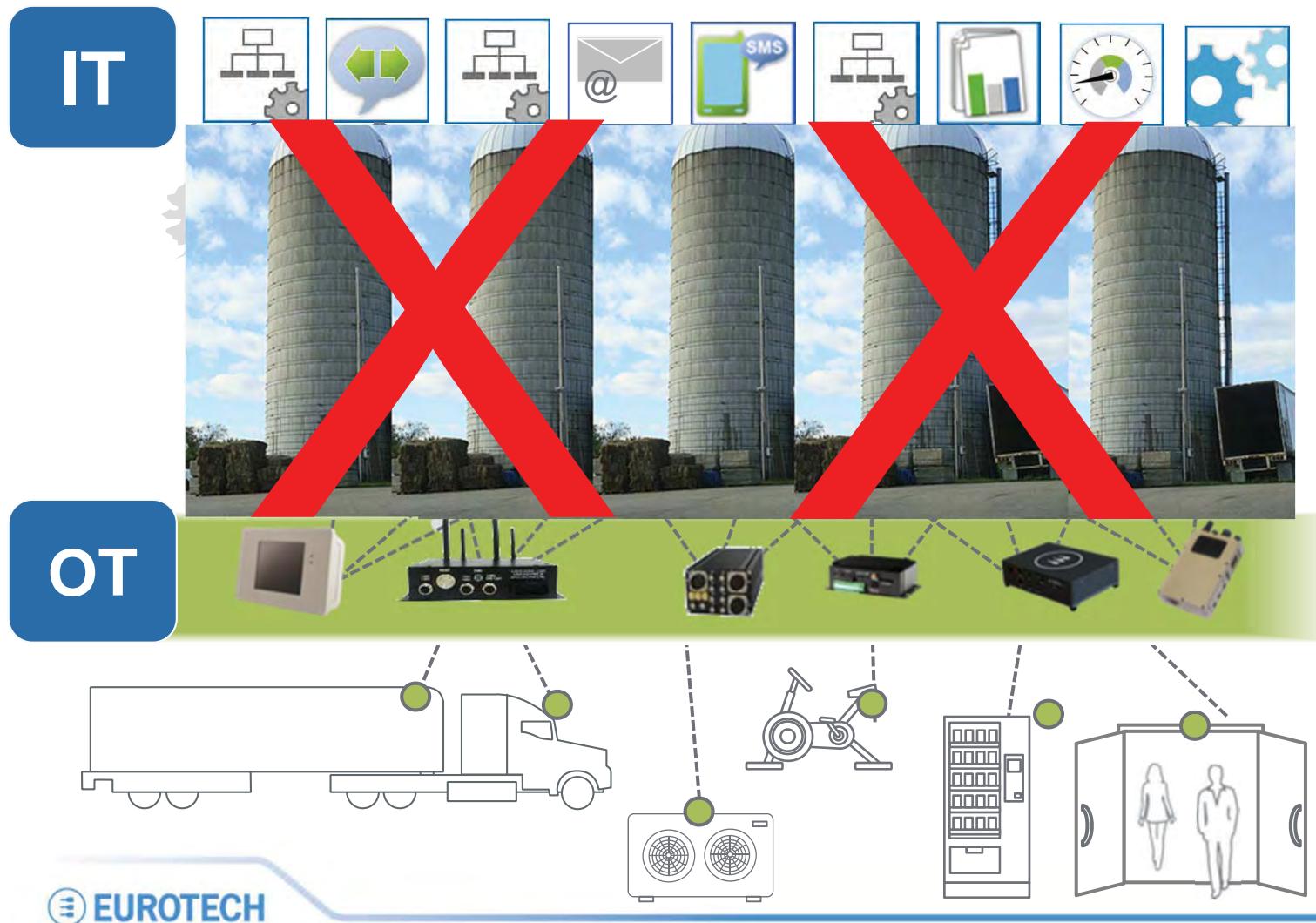
IT business opportunities
because of OT integration

- Increase Customers Retention and Fidelization
- New Business Models
- Products-as-a-Service,
- Pay-per-Use
- Monetization of Data
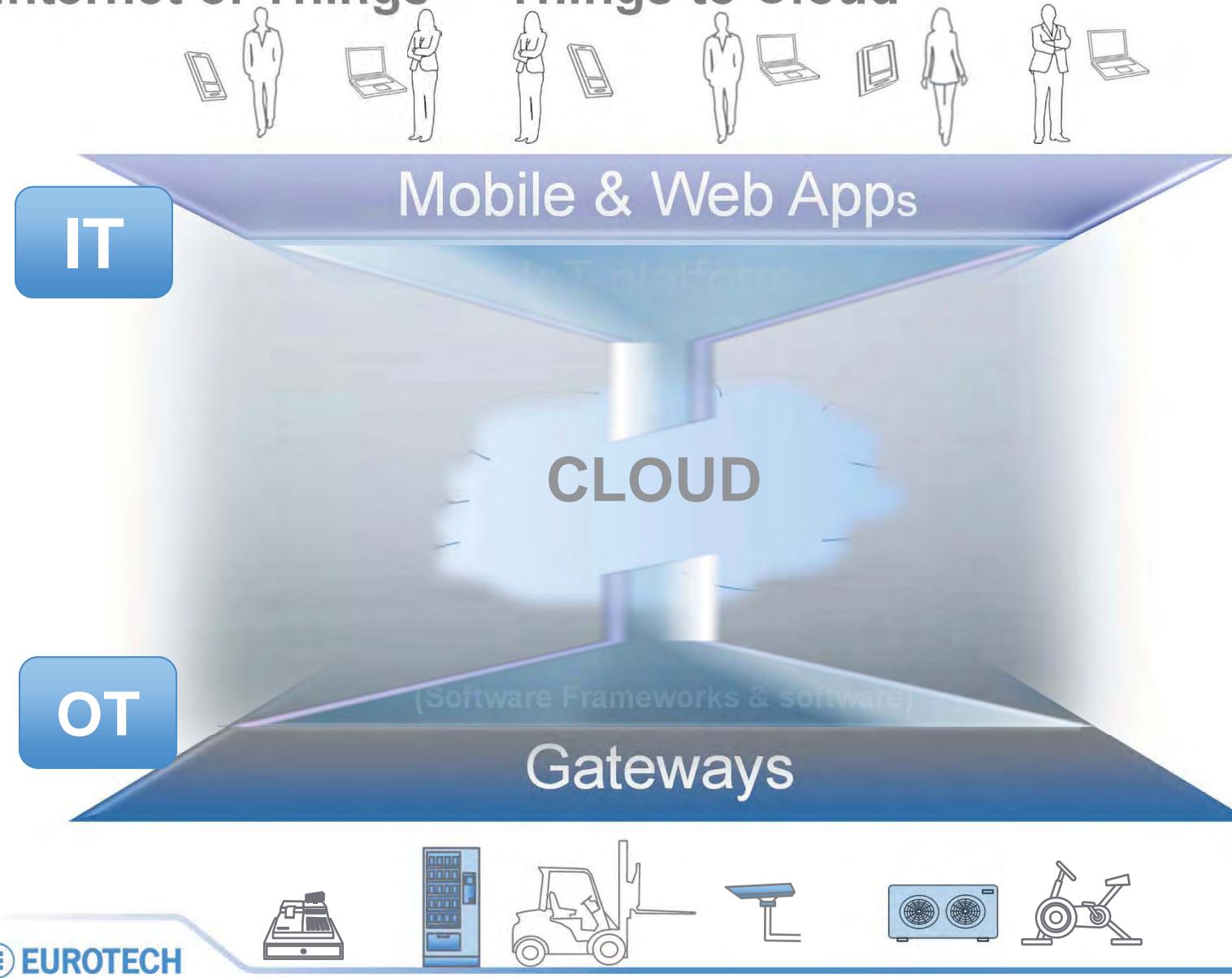
The complexity trap in IoT

**In need of a bridge between Distributed Things and Multiple Business Apps**

IT — Business Applications

OT — Sensors, Actuators, Displays, …

How to tame complexity?

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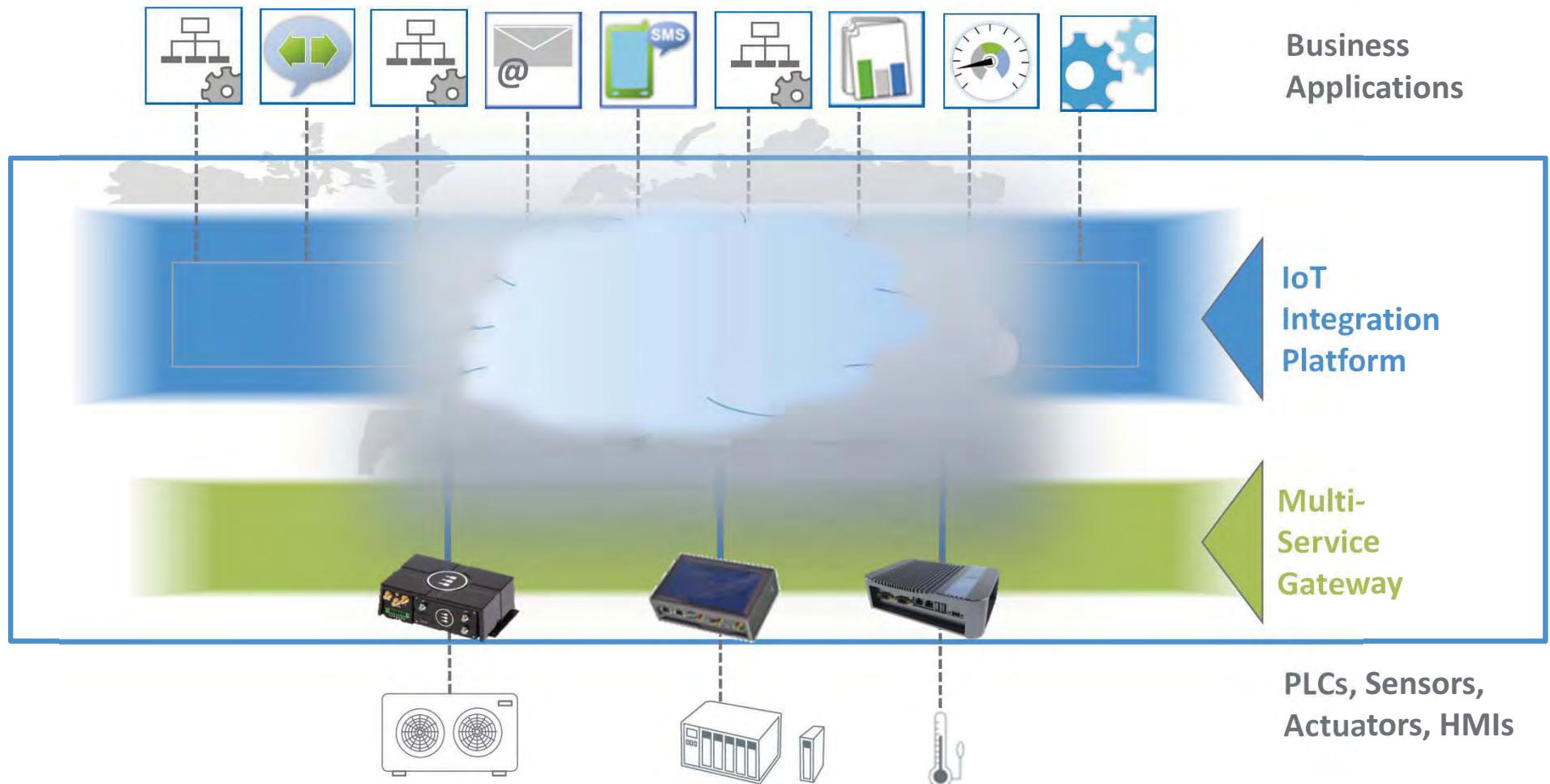
The IT & OT Pyramids
Internet of Things = Things to Cloud

IT

OT

Mobile & Web Apps

IoT platform

CLOUD

(Software Frameworks & software)

Gateways

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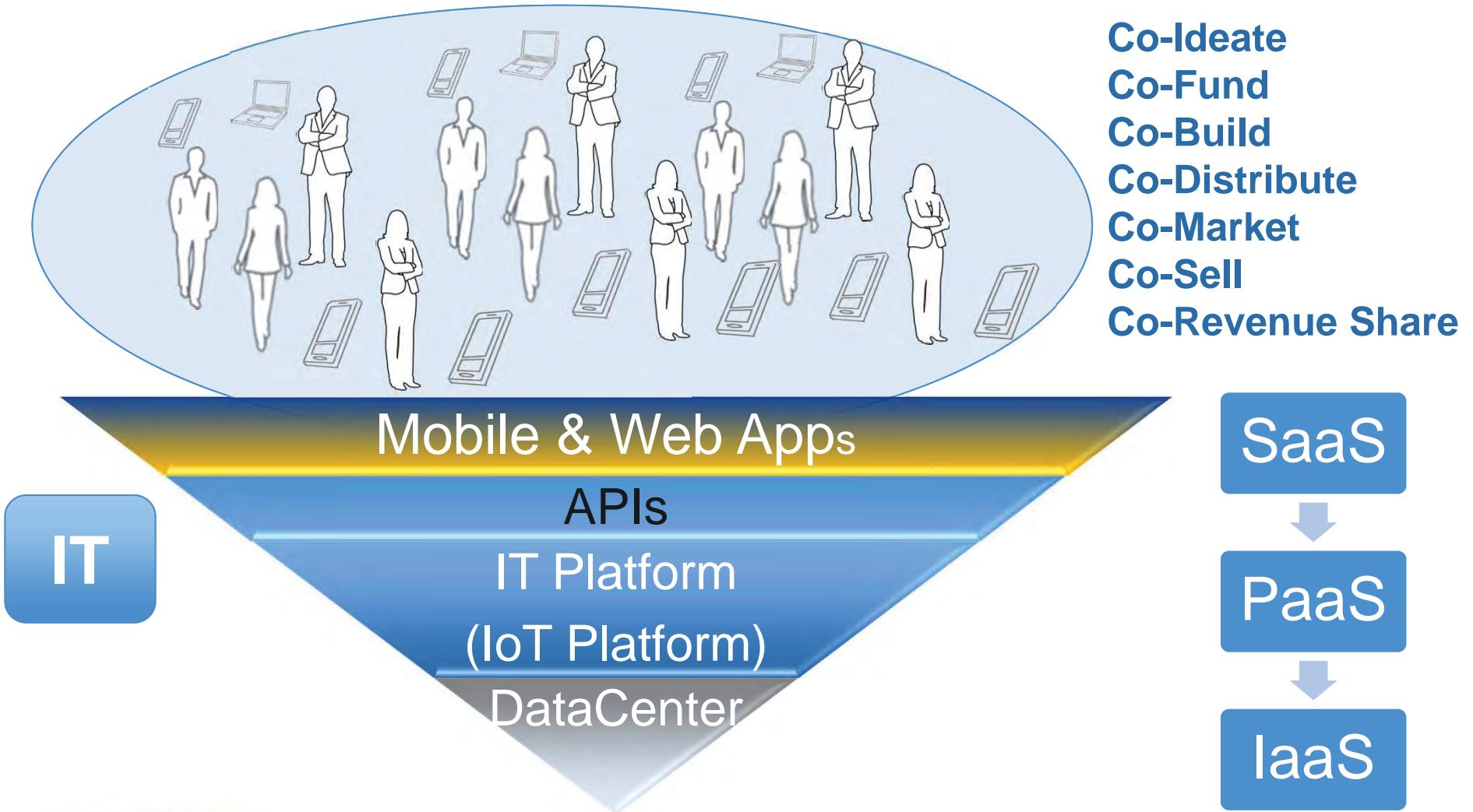
A layered approach to I-IoT

Building a bridge between the field and business apps

Business Applications

IoT Integration Platform

Multi-Service Gateway

PLCs, Sensors, Actuators, HMIs
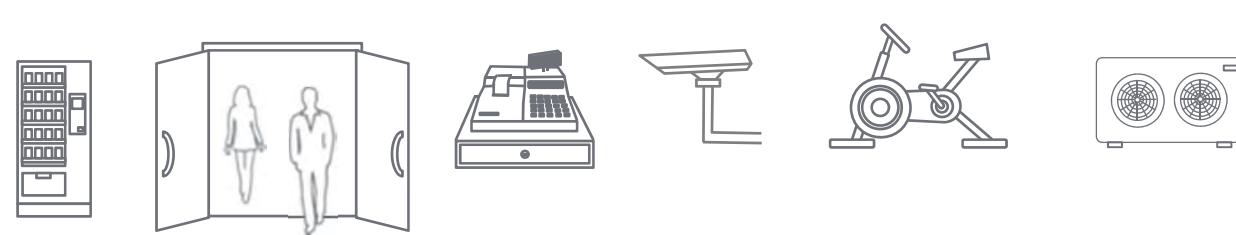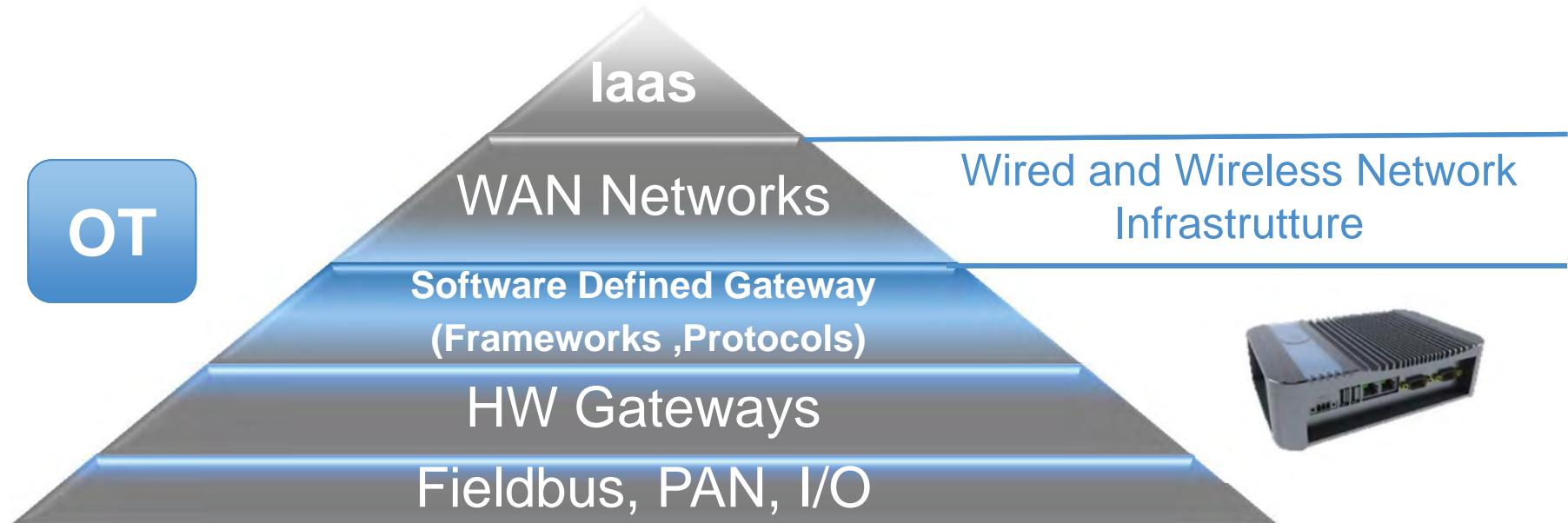
The IoT IT Pyramid

Internet of Things = Co-Innovate Platform

Co-Ideate
Co-Fund
Co-Build
Co-Distribute
Co-Market
Co-Sell
Co-Revenue Share

Mobile & Web Apps

APIs

IT Platform

(IoT Platform)

DataCenter

IT

SaaS

PaaS

IaaS

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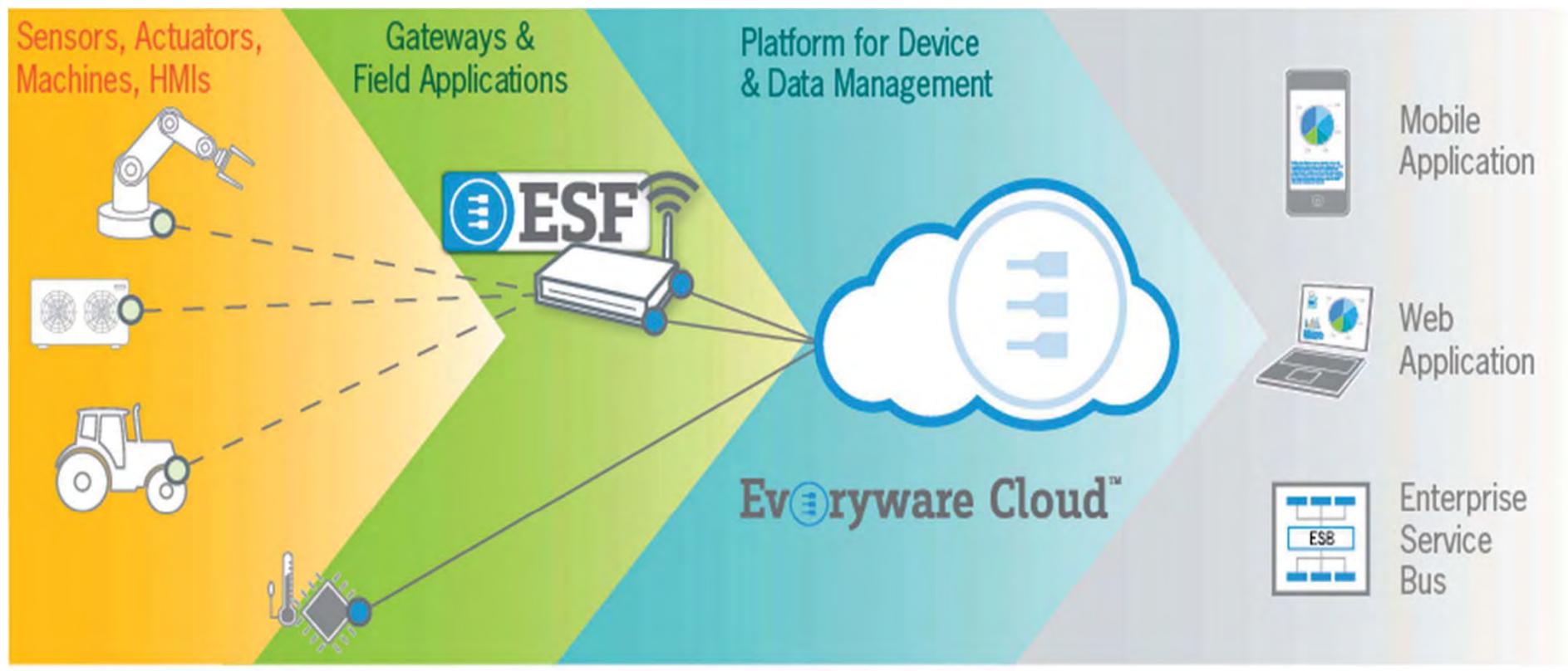
The IoT OT Pyramid

Internet of Things = Scalability & HW agnostic

OT

Iaas

WAN Networks

Software Defined Gateway
(Frameworks ,Protocols)

HW Gateways

Fieldbus, PAN, I/O

Wired and Wireless Network Infrastrutture
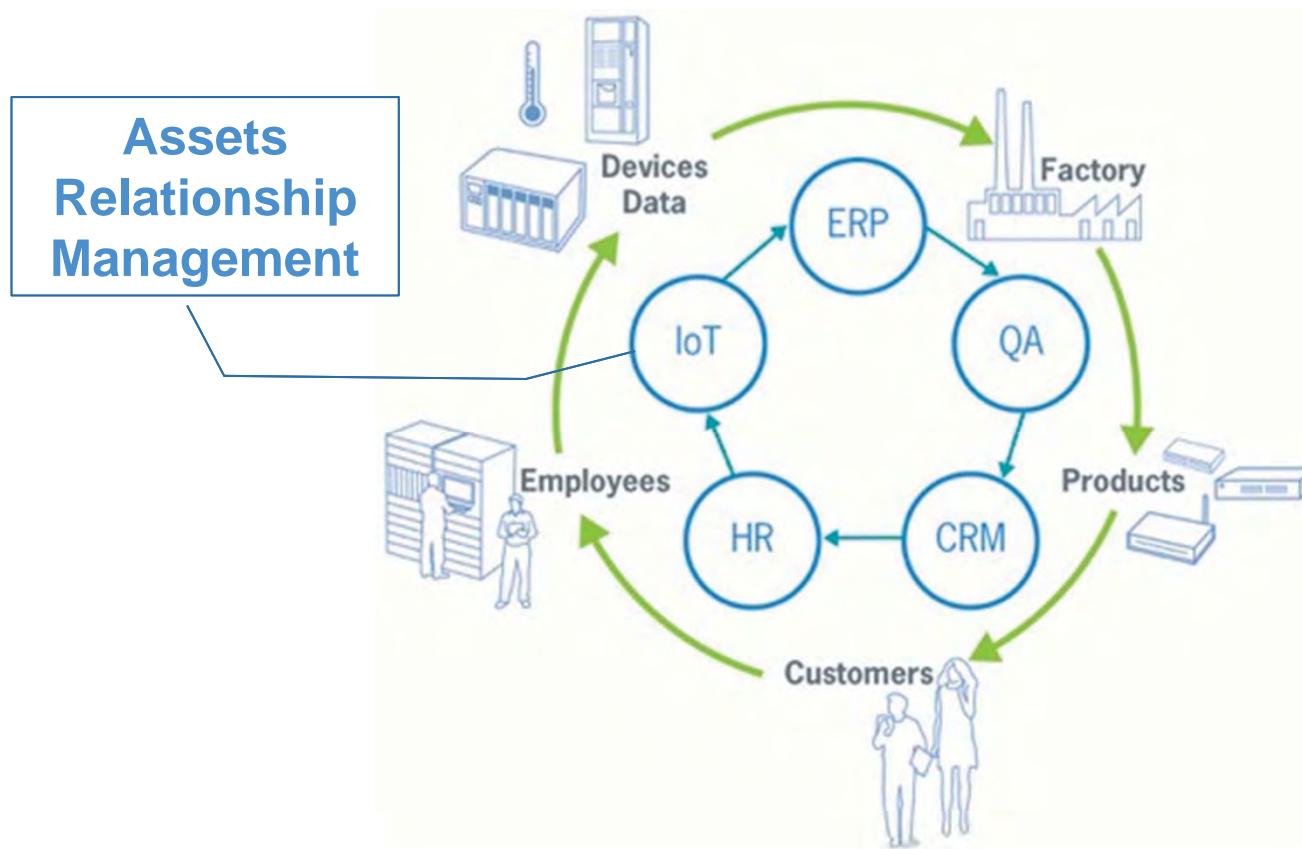
Transforming Bits of Data from Operating Assets on the Field into Actionable Information for Business Applications

Sensors, Actuators, Machines, HMIs

Gateways & Field Applications

Platform for Device & Data Management

ESF

Everyware Cloud™

Mobile Application

Web Application

Enterprise Service Bus

ESB

Eurotech End-to-End Solution

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IoT Platform as a a new Enterprise tool
Efficiency & Added Value

Assets Relationship Management

Devices Data — ERP — Factory — QA — Products — CRM — Customers — HR — Employees — IoT

Transforming Bits of Data at the Edge of the Network into Actionable Information & Knowledge
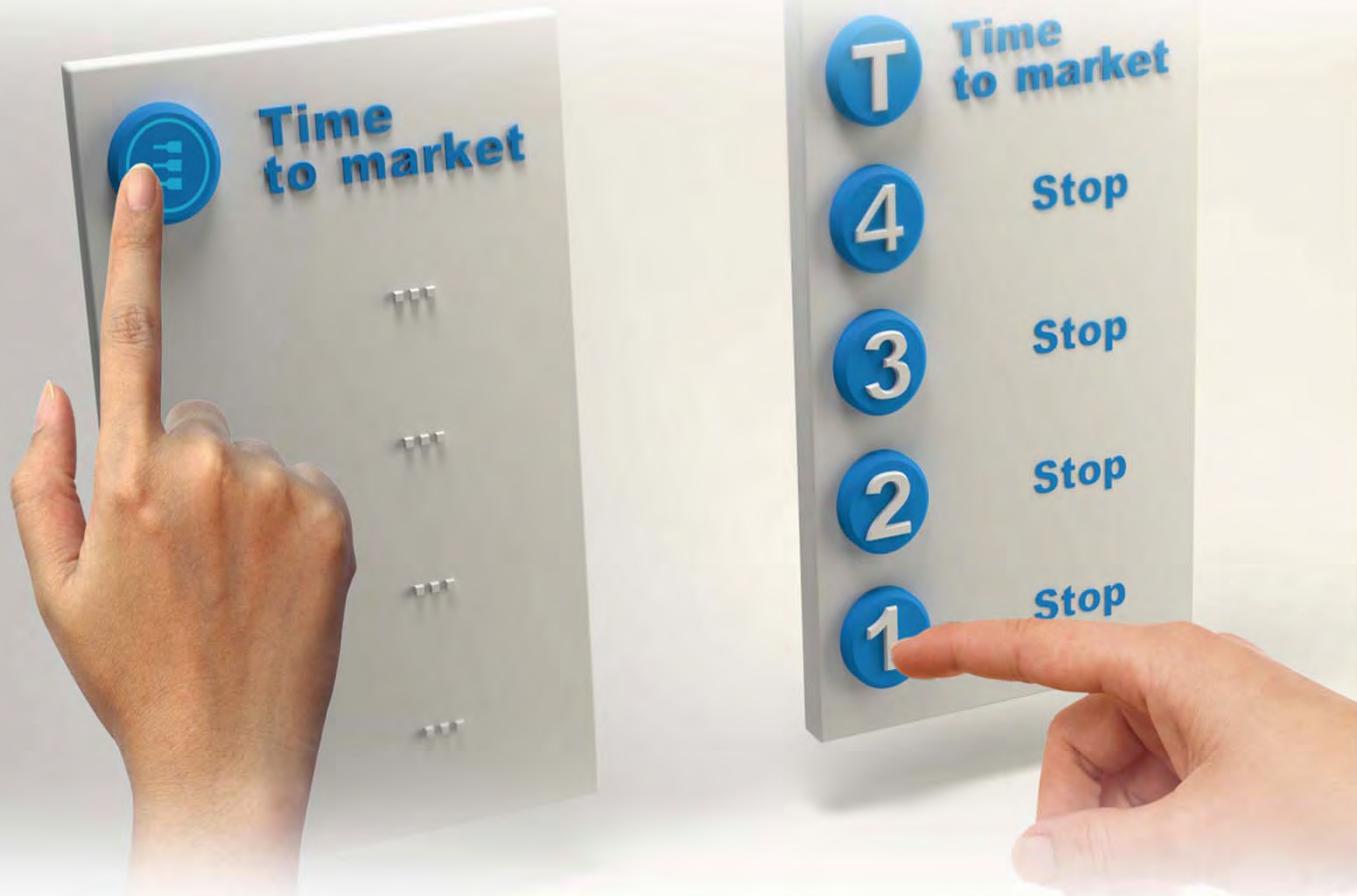
Thank You!

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