Topics

AtoS | Worldwide IT Partner

Atos at a Glance
Integrated Digital Services Leader – #5 in the World

FACTS FIGURES

- Integrated digital services leader with strong focus on your business
- With 2014 pro forma annual revenue over €11 billion
- 100,000 employees in 72 countries
- Your Business Technologists. Powering progress

KEY SOLUTION

Providing a comprehensive portfolio for Digital Business Empowerment
Through our services & technologies.

POWERING PROGRESS

Powering progress for our clients, empowering successful digital business transformation

We renew customer experience

We enable Business reinvention

We provide a secure environment

We ensure operational excellence

CLIENTS

Today for the Games, tomorrow for you!
Atos is the Worldwide IT Partner for the Olympic & Paralympic Games

Your business technologist. **Powering progress**

Atos | Worldwide IT Partner

Topics

Atos | Worldwide IT Partner

Digital will be highly disruptive to most industries, affecting not only revenue and cost structures but also shaking up the core business and operating models
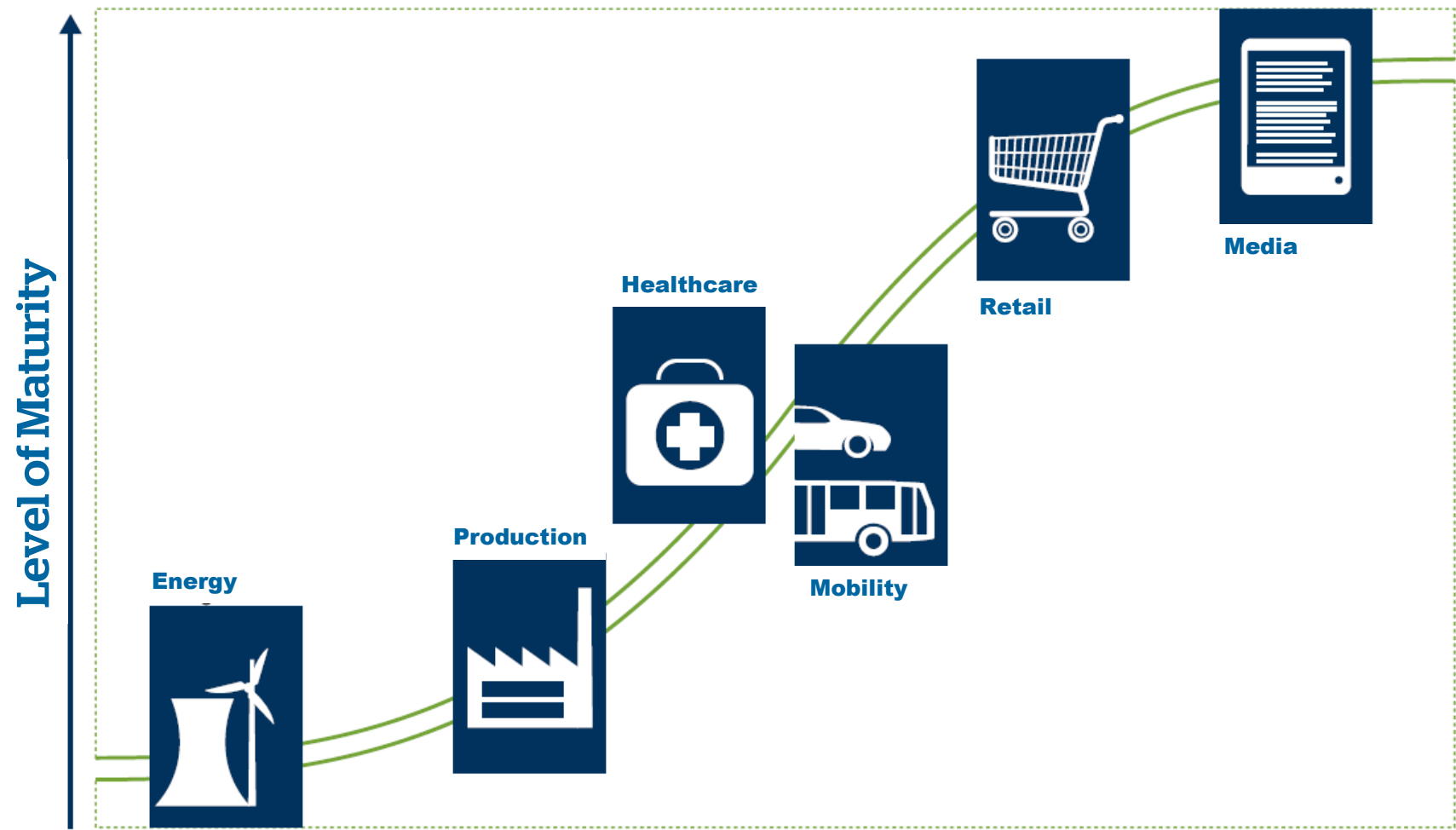
Digital Transformation

Disruptive Technologies

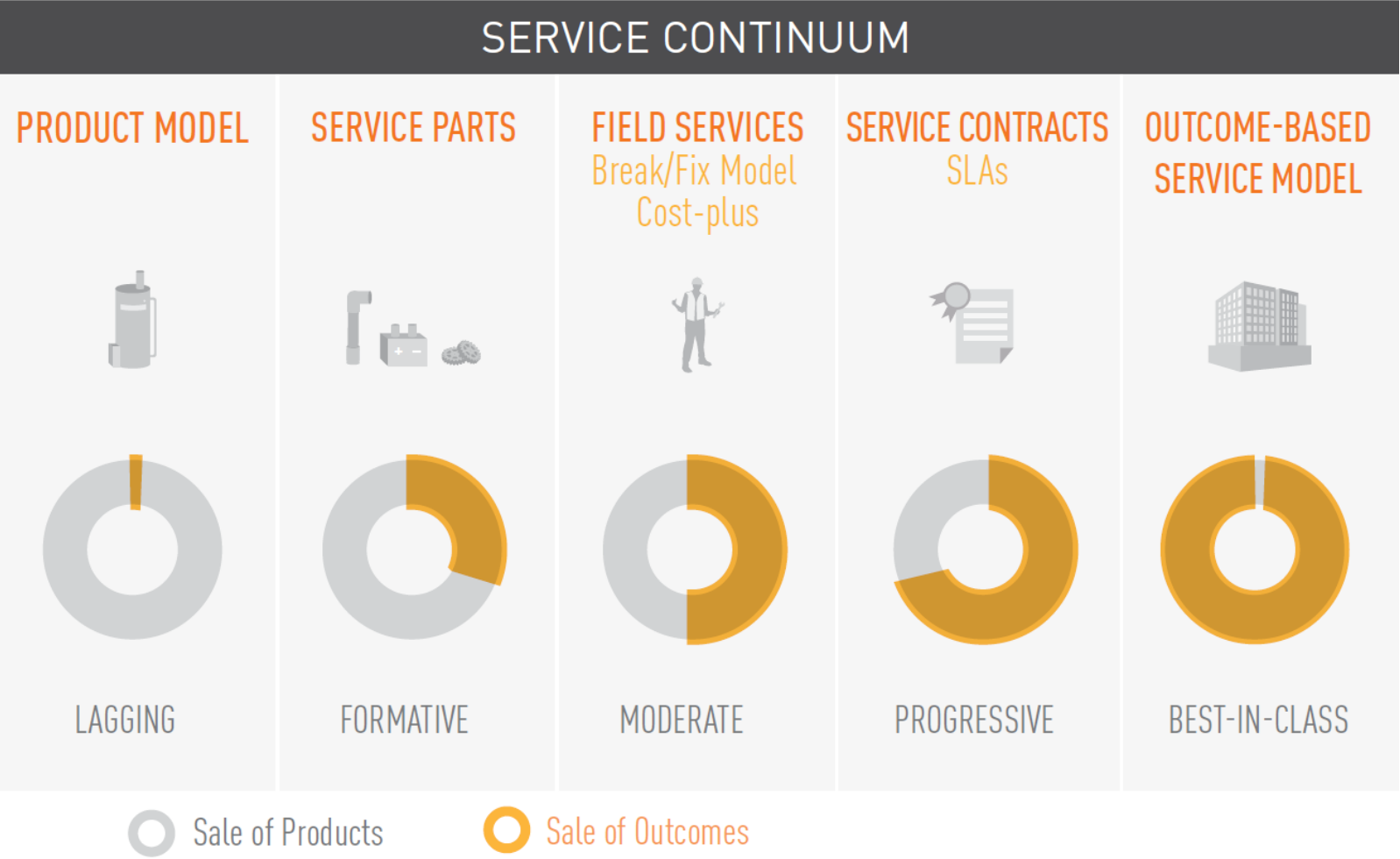**Changing Workforce**

Digital Disruption will be cheaper, stronger and faster

Level of maturity of digital business models

Level of Maturity

Energy

Production

Healthcare

Mobility

Retail

Media

Source: Accenture

Atos
Worldwide IT Partner

70% of the companies in manufacturing are in the first three stages of the Service Continuum

SERVICE CONTINUUM

PRODUCT MODEL	SERVICE PARTS	FIELD SERVICES Break/Fix Model Cost-plus	SERVICE CONTRACTS SLAs	OUTCOME-BASED SERVICE MODEL
LAGGING	FORMATIVE	MODERATE	PROGRESSIVE	BEST-IN-CLASS

Sale of Products   Sale of Outcomes

Source: Oxford Economics

Atos | Worldwide IT Partner

Moving from single, siloed systems and organizations to an industrial network of capabilities

Today

While todays production is linearly organized
and optimized within the boundaries
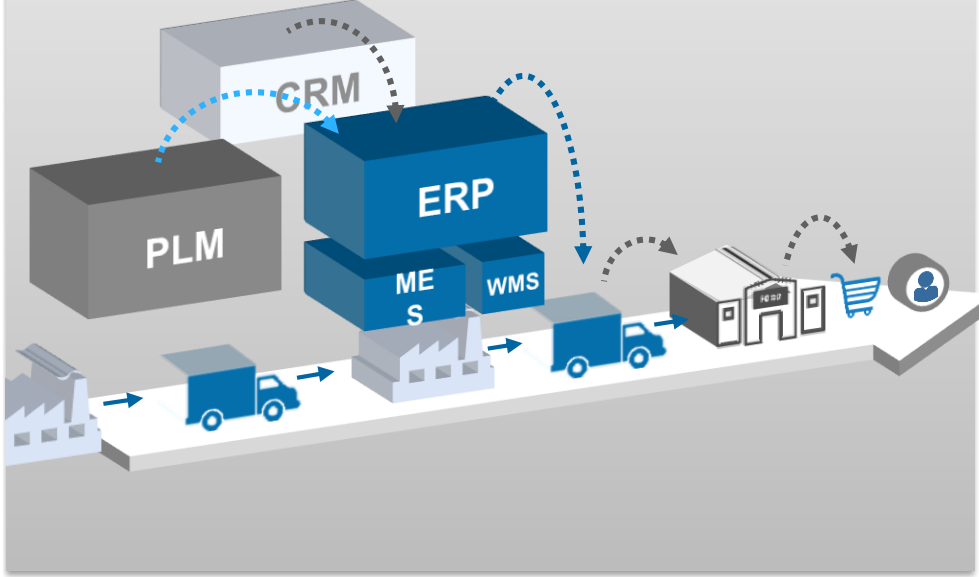of organizational and system siloes…

- Siloed systems
- Centralized
- Layered
- Monolithic
- Interfaces
- Licensed

FUTURE

… manufacturing of the future
will fulfill individual customer needs by a
collaborative and agile network of capabilities

- Interoperability
- Virtualization
- Decentralization
- Real-Time Capability/ Responsiveness
- Service Orientation
- Modularity

Are you ready?

Your business technologists. **Powering progress**

AtoS | Worldwide IT Partner

From Industrie 4.0 to Smart Services

Smart Services

Data based service offerings drive Industrie 4.0 because neither the usage of more sensors nor connected machines alone provide added value compared to existing solutions.

Service Platforms

Integrated service platforms will become the core components of Smart Services.

Topics

Atos
Worldwide IT Partner

Internet of Things – Atos Industrie 4.0
Atos on the Forefront

Research	Atos' scientific community	Gemini Project	Industrial Data Space	HORIZON 2020 Factories of the Future

	Thought Leaders Focus on techno-logical challenges, new trends & standards. + I4.0 solutions … With customers	Development of sustainable business models for Industrie 4.0 / smart factory BMWi Program	Creating a virtual data room to enable secure exchange and usage of data.	European open Platform for future Internet & smart factory
IPT (IEM) → Augmented Reality IML → Industrial Data Space IOSB → Consulting	Solutions for Smart Analytics, Big Data, I- ,P- ,SaaS, Augmented Reality, Security, etc.	Standards for connectivity, Security, Models, Reference Architecture, Definitions	Security, standards, data governance, conectors	

Your business technologists. **Powering progress**

Atos | Worldwide IT Partner

Industrial Data Space is complimentary to the platform Industrie 4.0

Insurance 4.0	Retail 4.0	Industrie 4.0 Focus on manufacturing industry	Banking 4.0	...	Smart Services

Industrial Data Space
Focus on Data

Data

Networks

Real Time Systems

...

Source: Fraunhofer / IDS
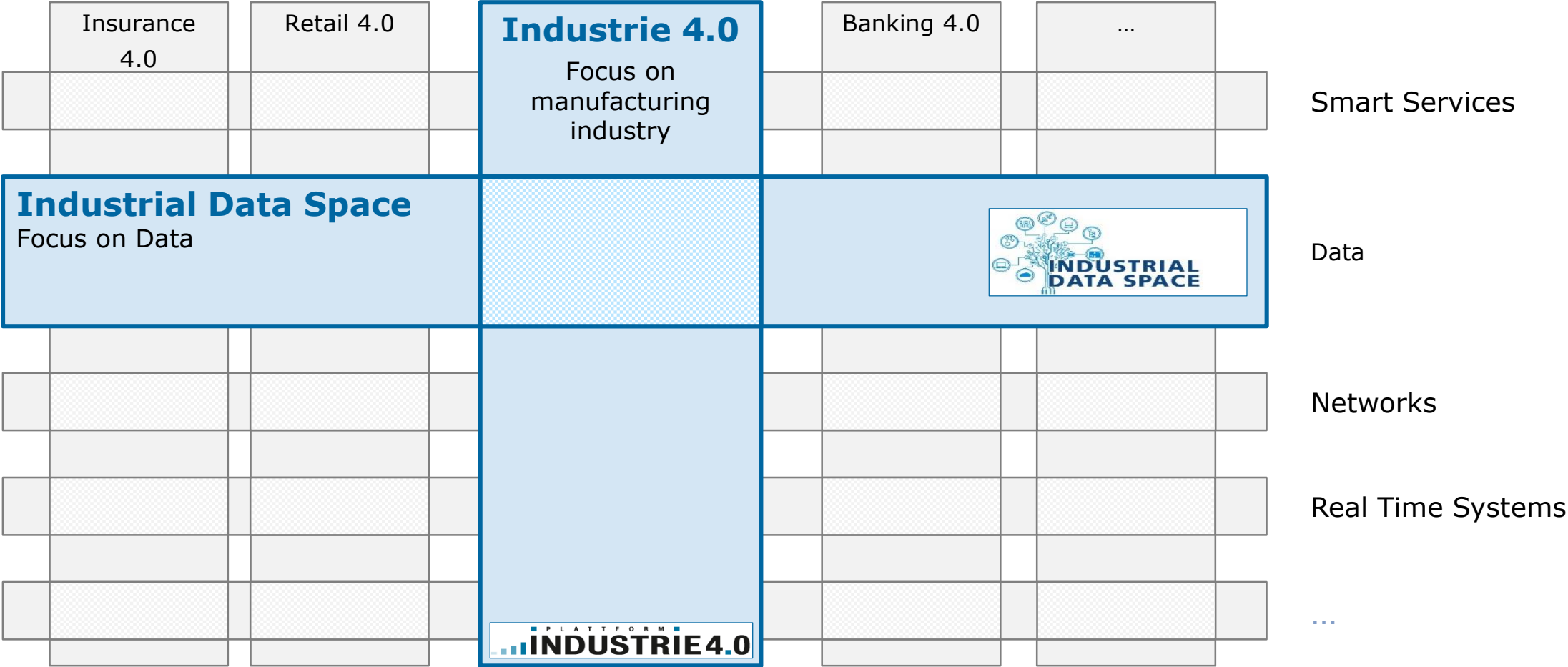
Your business technologists. **Powering progress**

Data is the strategic resource to link »Industrie 4.0« and »Smart Service World«

Public Data

| »Industry 4.0« | Data | »Smart Service Welt« | Customer |

Production Networks

Logistics Networks

Human-Machine-Collaboration

Interoperability

Autonomous Systems

Internet of Things

Smart Data Management

End-to-End Customer Process

Individualization

Ecosystem

Ubiquity

Commercial Services

Industrial Services

Data from the Value Chain
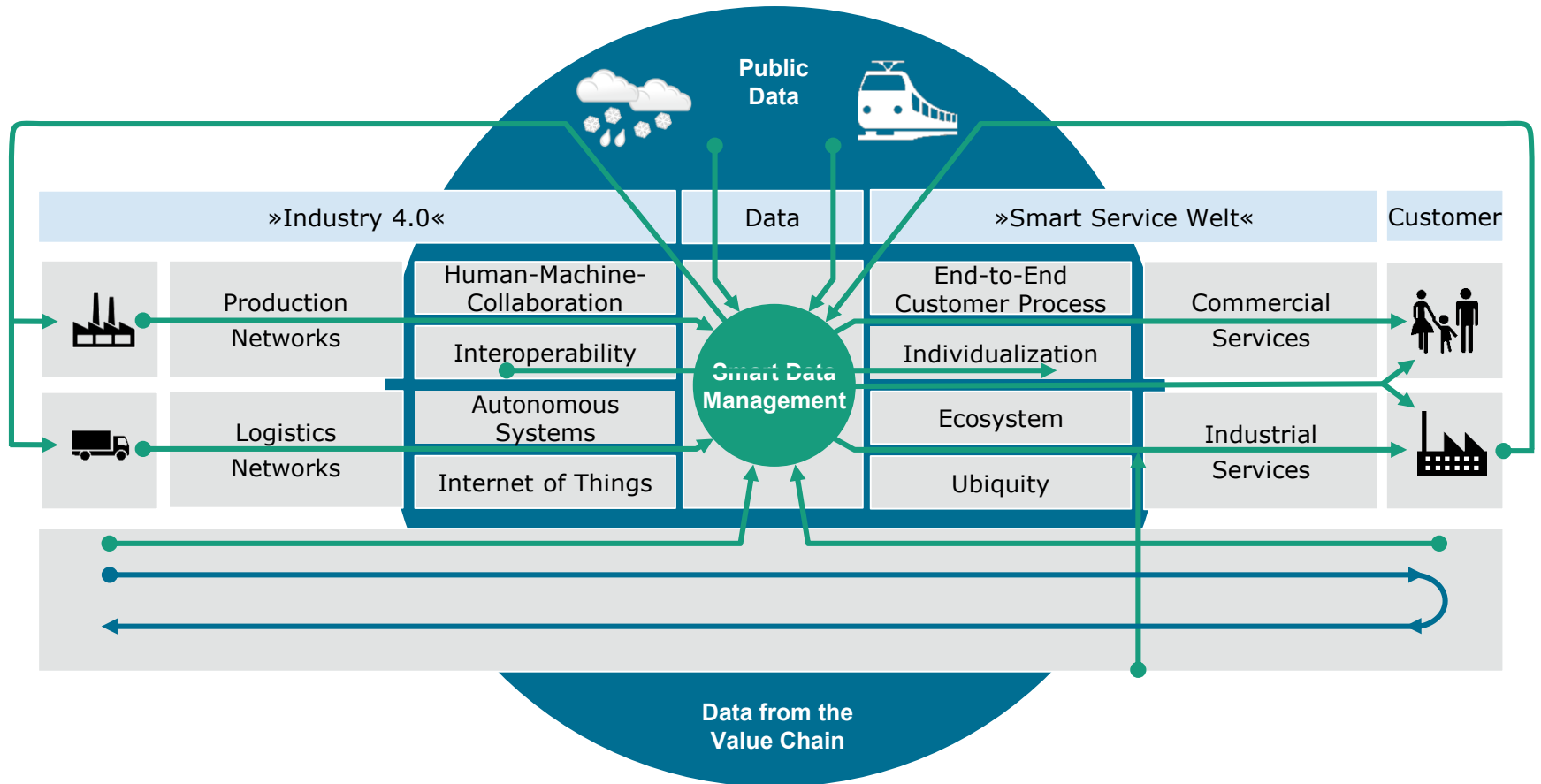
Legend: ● → Information flow ● → Material flow.

Your business technologists. Powering progress

Atos | Worldwide IT Partner

The Industrial Data Space aims at a »Network of Trusted Data«

Decentralization
Federated Architecture

Sovereignty
Data and Services

Trustworthiness
Certified Members

Security
Data Exchange

Openness
Neutral and User-Driven

INDUSTRIAL DATA SPACE

Governance
Common Rules of the Game

Scalability
Network Effects

Ecosystem
Platform and Services

Source: Fraunhofer / IDS

Your business technologists. **Powering progress**

Atos | Worldwide IT Partner

Industrial Data Space

Industrial Data Space **App Store**

Vocabulary

Apps

Industrial Data Space **Broker**

Index

Clearing

Registry

Download

Upload

Internal IDS **Connector**

External IDS **Connector**

Upload / Download / Search
Internet

Third Party Cloud Provider

External IDS **Connector**

Company A

Internal IDS **Connector**

Upload / Download

Company B

© Fraunhofer

Quelle: Fraunhofer / IDS

With Siemens, a unique technological Proposition
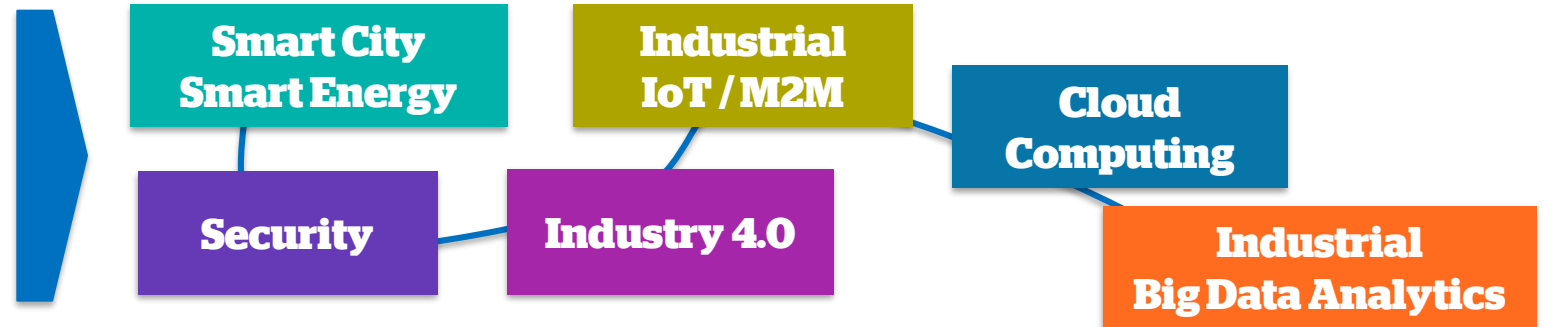## Atos & Siemens a Strategic Partnership

SIEMENS

JOE KAESER

President and CEO of Siemens AG

"This **partnership** forms one of the largest strategic relationships ever between a global engineering company and a global IT provider. The value of our combined strength enables our **customers to take full advantage** of the next wave of industrial IT in order to maintain competitiveness and deliver outstanding services."
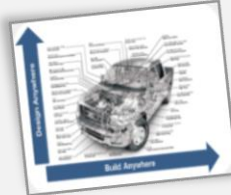
150 m€

Joint Investments
to shape the future
& shared value creation

- Smart City Smart Energy
- Security
- Industry 4.0
- Industrial IoT / M2M
- Cloud Computing
- Industrial Big Data Analytics

Strategic joint investment projects with Siemens
Defining the future of IoT Services

Universal Tolling Solution	Low Emission Zones	Energy Trading & Risk Management	Data Center Infra-structure Management	Industrial Data Analytics
Satellite and Microwave tolling integrated with back-office and central system to provide end to end system	A end to end cloud-based LEZ solution with integrated ANPR and roadside technology, and Atos back-office services	Integration Siemens JROS and Atos PTRS allows integrated view of production scheduling and energy market trading	A new joint solution to enable end to end Data Center wide (Facilities & IT-Infrastructure) reporting, analysis and optimization.	A comprehensive program to build both the analytics platform and 9 use cases in preventive, predictive and prescriptive analysis for Industry & Manufacturing, Energy, Mobility and Healthcare

MES Just In Time, Just In Sequence	PLM Supplier Connect	Data Analytics for Smart Grid	Core Communication Platform	Innovation PoC's
Seamless integration between OEMs and their first tier suppliers at production and assembly time	Seamless integration between OEMs and their first tier suppliers at the design phase	A comprehensive program with 5 use cases for Data Analytics in Smart Grid management.	An elaborate scalable and cost effective communications platform to facilitate connecting millions of devices and support the remote management services.	Running: Spare Part Identification Additive Manufacturing Security Incident & Event Management In preparation: Internet of Systems Future Networking

Your business technologists. Powering progress

Atos | Worldwide IT Partner

Topics

► **Atos update**

► **Demand for Smart Services**

► **Atos Research Activities**

► **Industrie 4.0 Architecture**

► **Building blocks and use cases**

► **Methodology**

Atos

Worldwide IT Partner

Atos Industrie 4.0 Reference Architecture

Security

Standardization

Connectivity

Business&Process

Business Models | Changed Jobs | Social Dimension

Engineering | Production | Logistics | Sales & Services | Smart Services

Applications

Industrial Data Analytics (IDA)

CAx | PLM | MES | ERP

Device Management

Enablers

B2B Platform | ESN | ECM | GIS

BigData | Cloud | Mobility | AR/VR

Edge Computing

Sensors& Actuators | PLC | CPS

Devices

Internet of Things

Technology

Core Communication Platform

ICT Infrastructure / OT Infrastructure

Meister | Instandhaltung | Werkzeuge | QS | AV/Planung | IT | Fertigungsleitung

Efficiency

Effectivness

Industrie 4.0

Agility

Quality

Topics

► **Atos update**

► **Demand for Smart Services**

► **Atos Research Activities**

► **Industrie 4.0 Architecture**

► **Building blocks and use cases**

► **Methodology**

Internet of Things – Atos Industrie 4.0
Road to Security

1 Security Maturity Assessment

2 Penetrationstest

3 Security Concept

4 Security Monitoring

5 Auditing

Atos cyber security

- ▶ Target: Reaching a security level sufficient for Industrie 4.0

- ▶ As-is analysis: Security maturity assessment

- ▶ Technical assessments via penetration tests performed by Certified Ethical Hackers

- ▶ Security concept with proof of implementation for BSI (esp. required for KRITIS)

- ▶ Security Monitoring and alerting / notification

- ▶ IS audit performed by a certified IS service provider

Atos | Worldwide IT Partner

Additive Manufacturing (3D Printing)
"RepAIR" - Focused in a Predictive Maintenance System
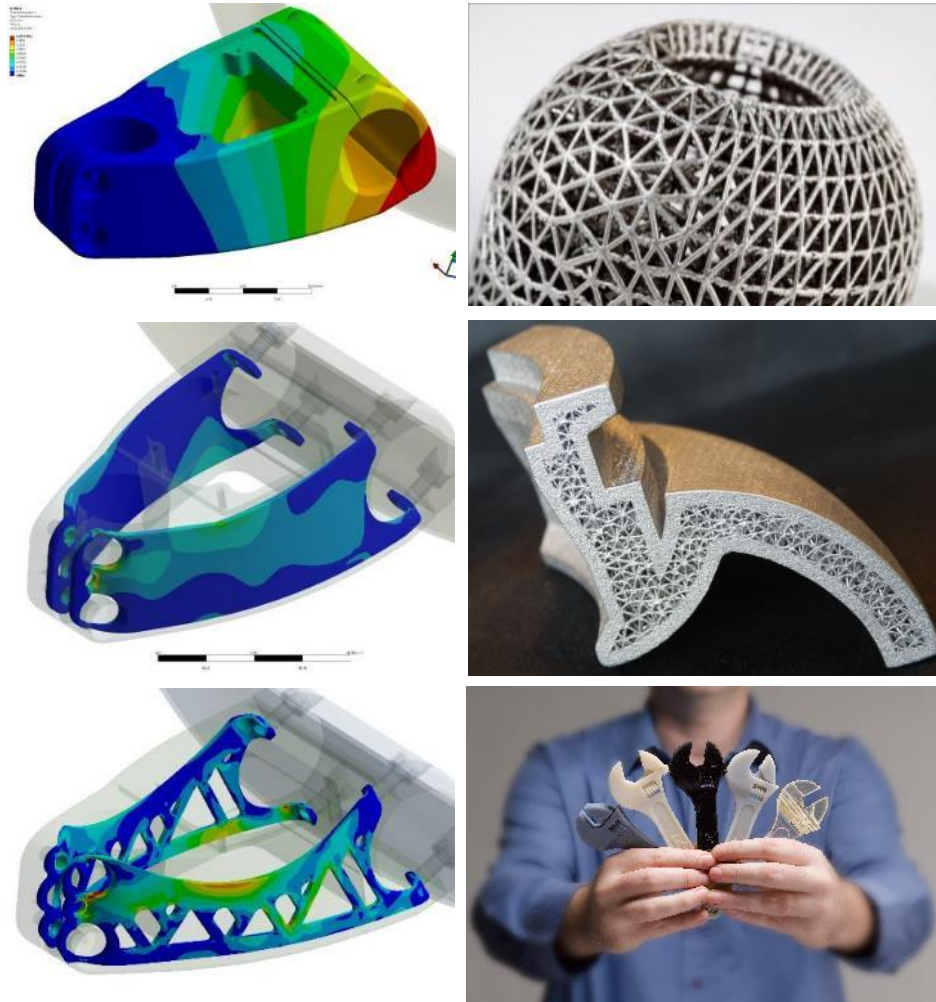
RepAIR

Onsite Maintenance and Repair of Aircraft by integrated Additive Manufacturing

The main objective of RepAIR is to shift the "make" or "buy" decision towards the "make" decision by cost reduction in the remake and rework of spare parts and therefore **improve cost efficiency for maintenance repair** in aeronautics and air transport.

RepAIR Members (Extract):

Core Communication Platform: Atos' IoT platform
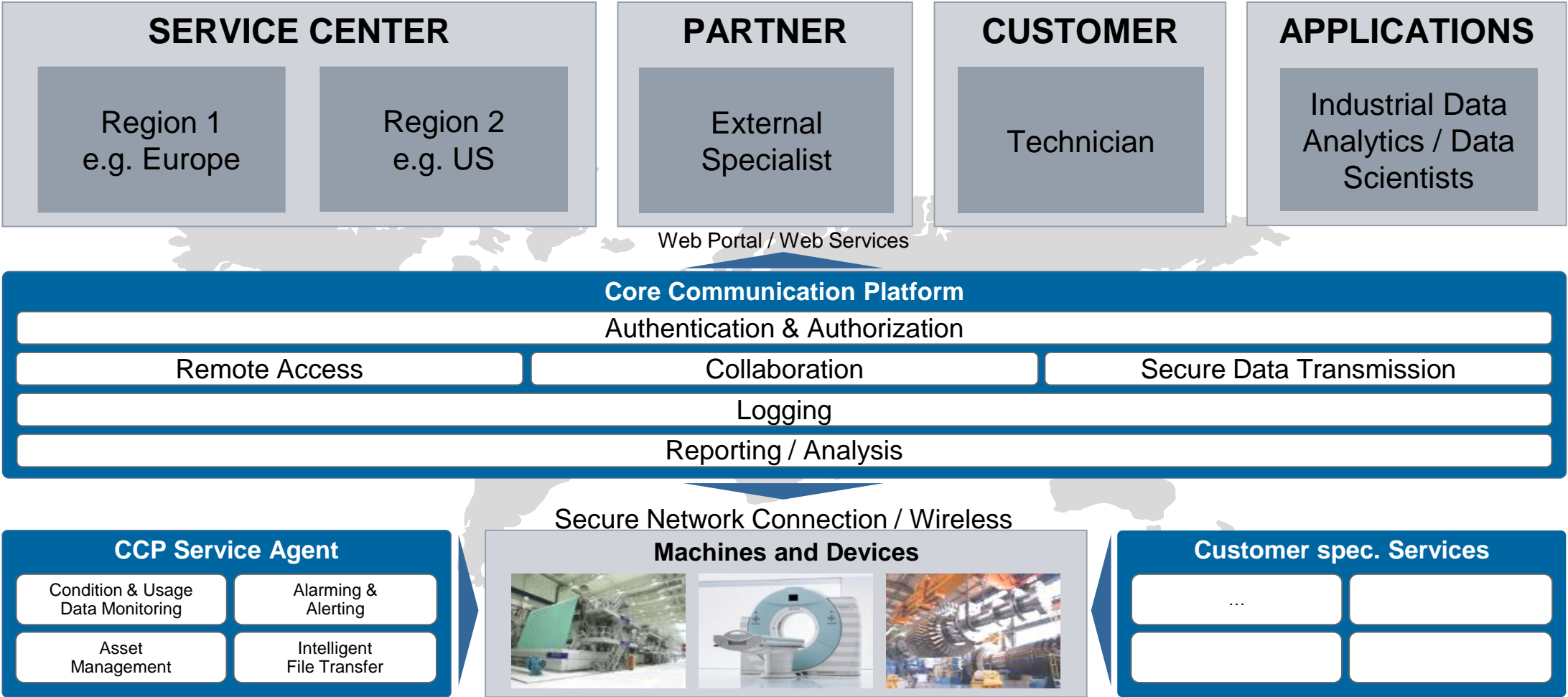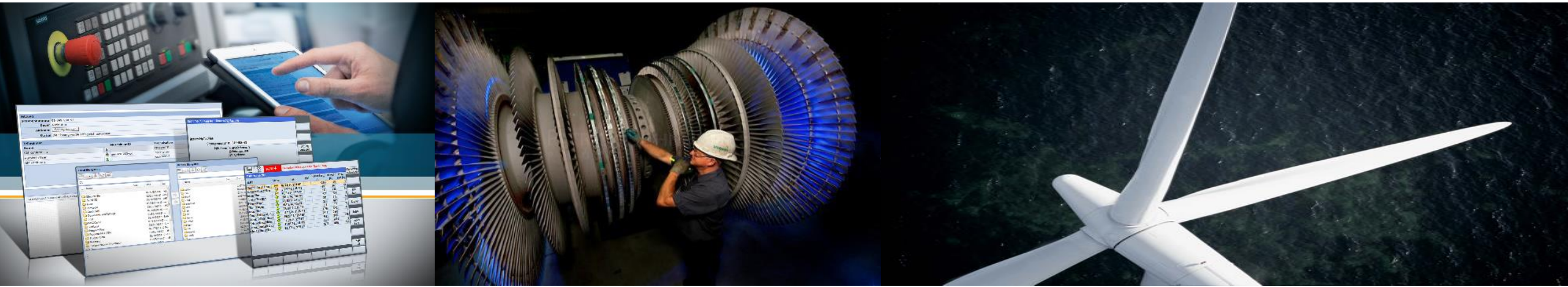
Millions of devices communicate based on CCP

SERVICE CENTER		PARTNER	CUSTOMER	APPLICATIONS
Region 1 e.g. Europe	Region 2 e.g. US	External Specialist	Technician	Industrial Data Analytics / Data Scientists

Web Portal / Web Services

Core Communication Platform

Authentication & Authorization

Remote Access	Collaboration	Secure Data Transmission

Logging

Reporting / Analysis

Secure Network Connection / Wireless

CCP Service Agent

Condition & Usage Data Monitoring	Alarming & Alerting
Asset Management	Intelligent File Transfer

Machines and Devices

Customer spec. Services

...	

SIEMENS

Our business impact: we deliver OPERATIONAL EXCELLENCE

Supporting clients to ensure that best in class engineered products provides best in class outcomes in the daily operations

What we have realized for our Siemens:

Providing a service platform enabling the manufacturer to operate its products more efficiently by

- A **continuous measurement** of performance and equipment data
- Data Analysis, Pattern and **Threshold recognition**
- Recognition of **erroneous/critical components**
- **Preventive Maintenance** Planning and **Condition based Monitoring**

Our business impact:
we deliver business reinvention

Providing enhanced functionality and increased comfort to the consumer

Creating valuable customer and product insight through data collection

Providing a multi-sided-marketplace for the smart home ecosystem

What we have realized for B/S/H/:

Create a **risk- and revenue-sharing** business partnership for the "Home Connect" program

Support B/S/H/ from vision to requirements to realization, including **end-to-end** system test

Design, develop and operate the **central communication platform**, capable to support millions of devices

The mission: Monetizing the data

Our business impact:
we ensure Business Reinvention

Transforming Manufacturer into the Digital Mobile World

What we have realized for Michelin:

- New Michelin Service
- 30 countries availability
- 10-15% after market business boost
- For Michelin's clients:
  - 10% Fuel savings
  - Improved Fleet Uptime up to 5%

Our business impact:
we ensure customer experience

Renault granted its Innovation Award to Atos in 2013 for the R-Link project

What we have realized for Renault:

Renault R-Link solution, awarded as most innovative solution, with seamless integration of multimedia connectivity and infotainment services
Global Roll-out in more than 35 countries
E-Commerce for onboard , & off-board functionalities
The in-dash R-Link Multimedia Tablet
(7 inch Android based) allows a seamless smartphone OS integration)

RENAULT

Atos | Worldwide IT Partner

Topics

► **Atos update**

► **Demand for Smart Services**

► **Atos Research Activities**

► **Industrie 4.0 Architecture**

► **Building blocks and use cases**

► **Methodology**
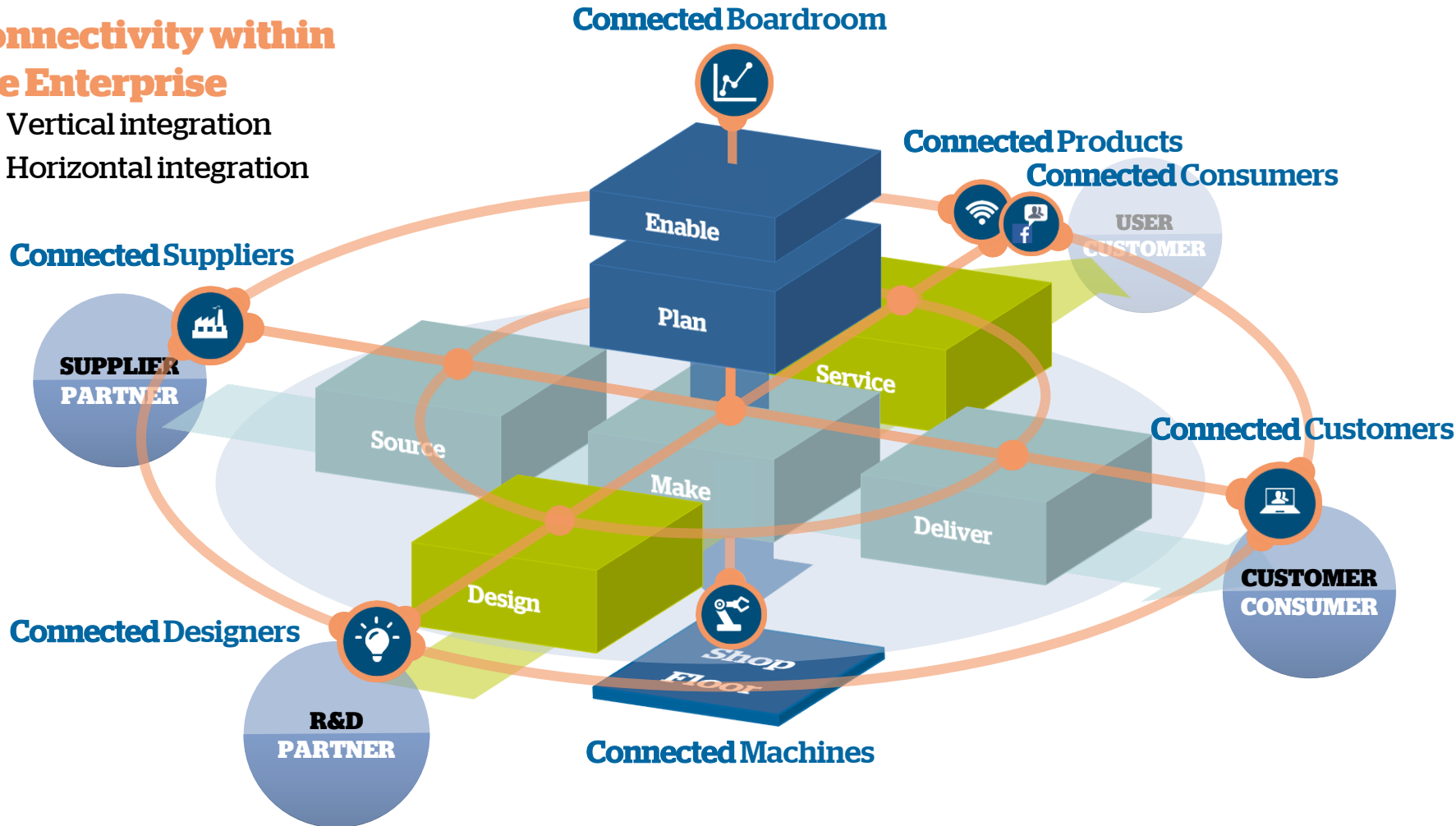
Atos | Worldwide IT Partner

The Connected Enterprise in the Digital Age
New business and collaboration models within the manufacturing industry
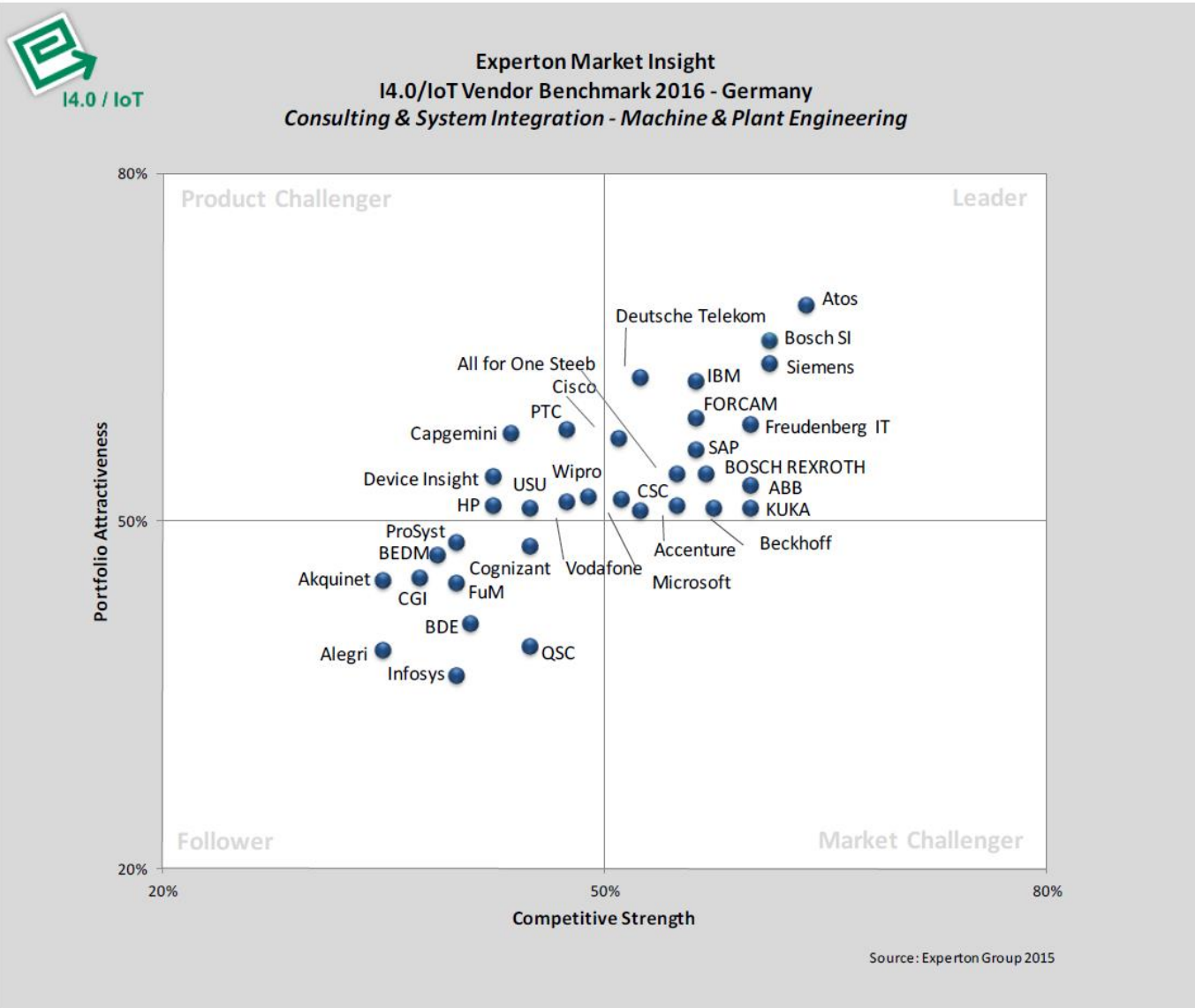
Connectivity within the Enterprise

- Vertical integration
- Horizontal integration

Connectivity to the outside world

- Consumers providing direct feedback to products designers
- Products providing online customer/product profile data
- Individual customized products & services
- Smart Products generating usage data
- Suppliers becoming Co-designers
- Customers designing (part of) their own products

Connected Boardroom
Connected Products
Connected Consumers
Connected Suppliers
Connected Customers
Connected Designers
Connected Machines

Enable
Plan
Service
Source
Make
Deliver
Design
Shop Floor

SUPPLIER PARTNER
USER CUSTOMER
CUSTOMER CONSUMER
R&D PARTNER

Industrie 4.0 Opportunity Discovery workshop
Workshop approach

Experton Industrie 4.0 Vendor Benchmark 2016

Experton Market Insight
I4.0/IoT Vendor Benchmark 2016 - Germany
Consulting & System Integration - Machine & Plant Engineering

Source: Experton Group 2015

Thank you!

▶ Ulrich Ahle

▶ e-mail: ulrich.ahle@atos.net

▶ Telefon: +49-174-1533348

Atos | Worldwide IT Partner