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SIEMENS
Ingenuity for life

MindSphere and Atos Codex
The cloud-based, open IoT operating system
Your way to digital services

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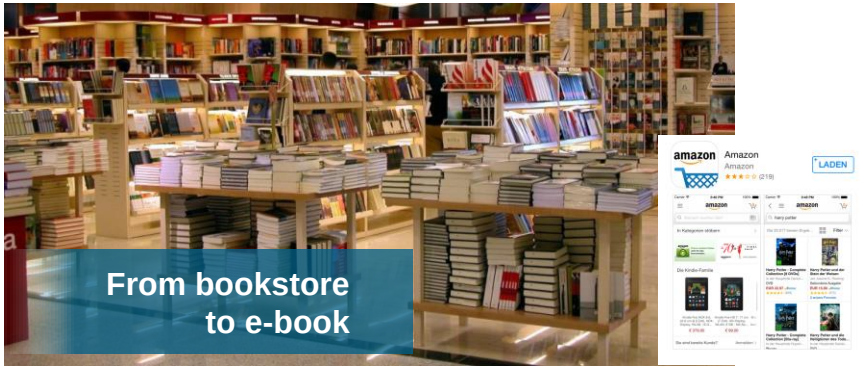
siemens.com/mindsphere

New business models in the internet age are disrupting complete markets



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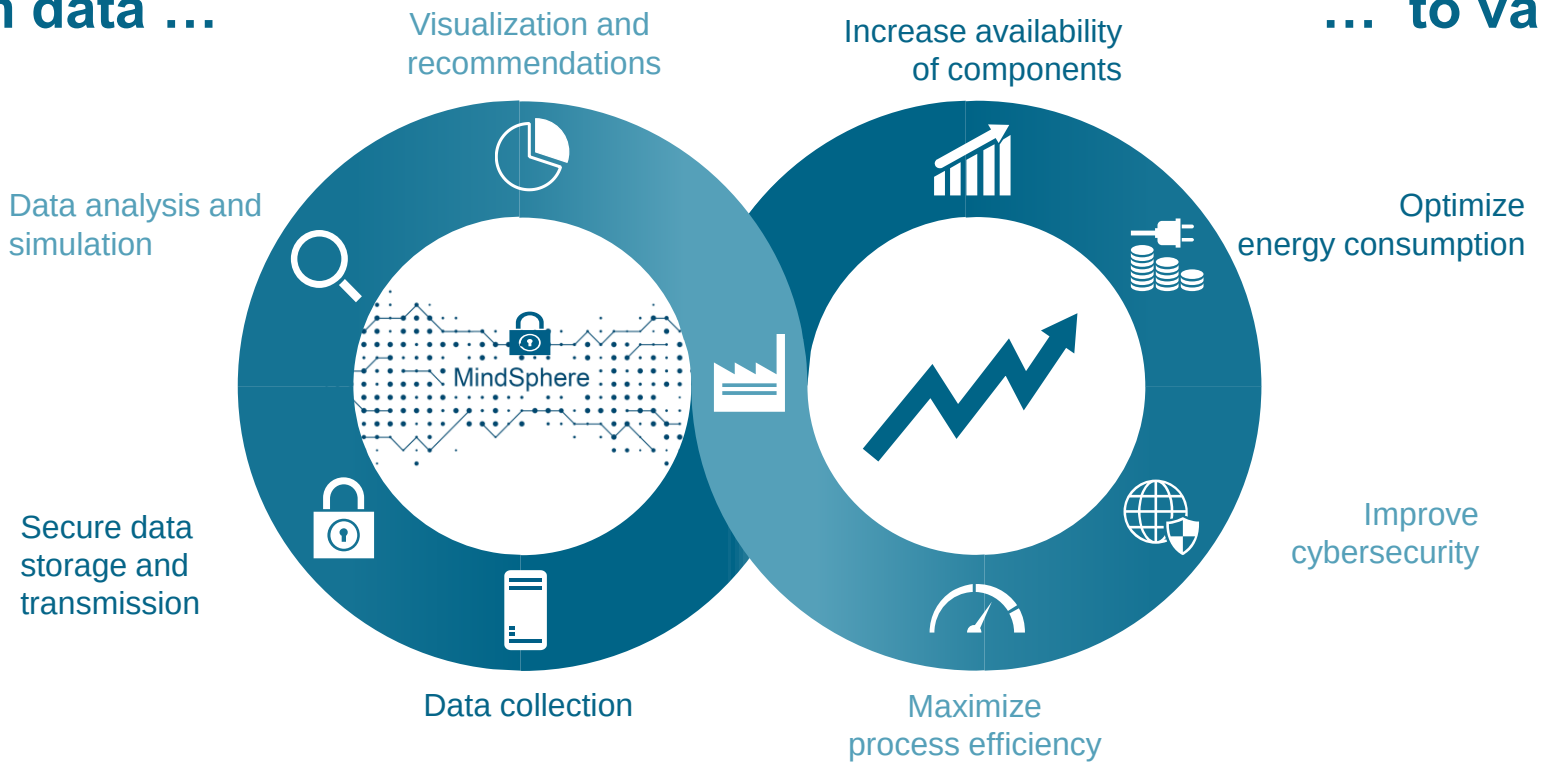
Extract value from data

From data …

… to value



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MindSphere is your entry point to drive performance with digitalization

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Increase Performance …

…powered by digital transformation

Build Digital Business …

…through development of applications & digital services

Differentiate in the Market …

…through new service and business models

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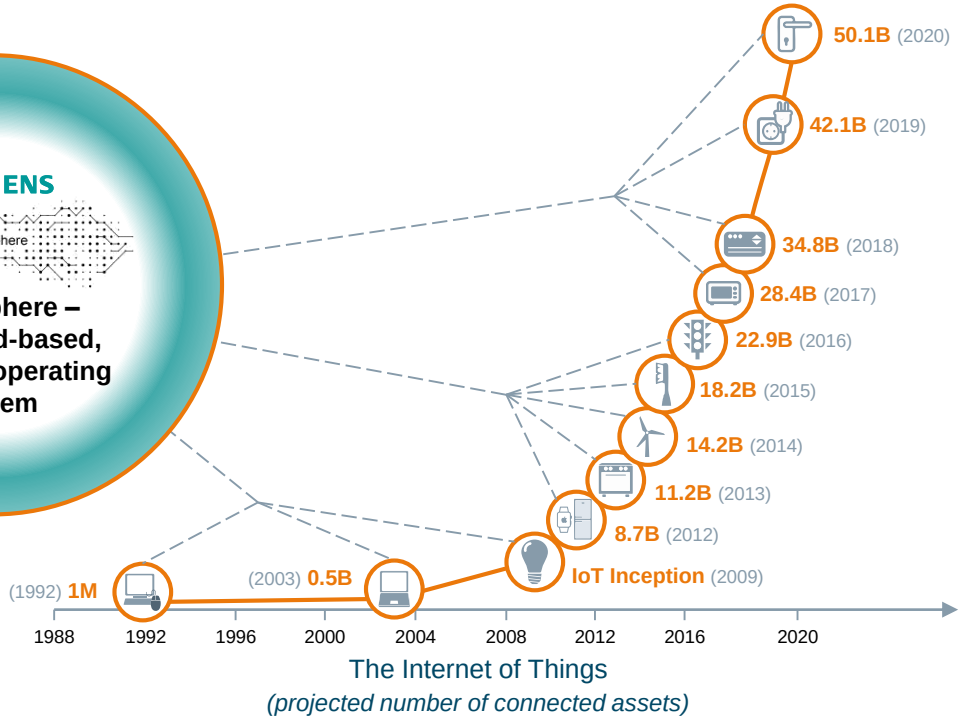
MindSphere

MindSphere – The cloud-based, open IoT operating system



The Internet of Things
(projected number of connected assets)

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MindSphere – The cloud-based, open IoT operating system from Siemens

MindApps

- Use **apps from Siemens, partners or develop own** apps
- Gain **asset transparency** & **analytical insights**
- Subscription based

MindSphere

- Open interface for development of **customer specific apps**
- **Various cloud infrastructures: SAP, AtoS, Microsoft Azure** offered as public, private or on-premise (planned)

MindConnect

- **Open standards** for connectivity, e.g., OPC UA
- **Plug and play connection** of Siemens and 3rd party products
- **Secure** and **encrypted** data communication

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Data-driven services based on MindSphere enable new business

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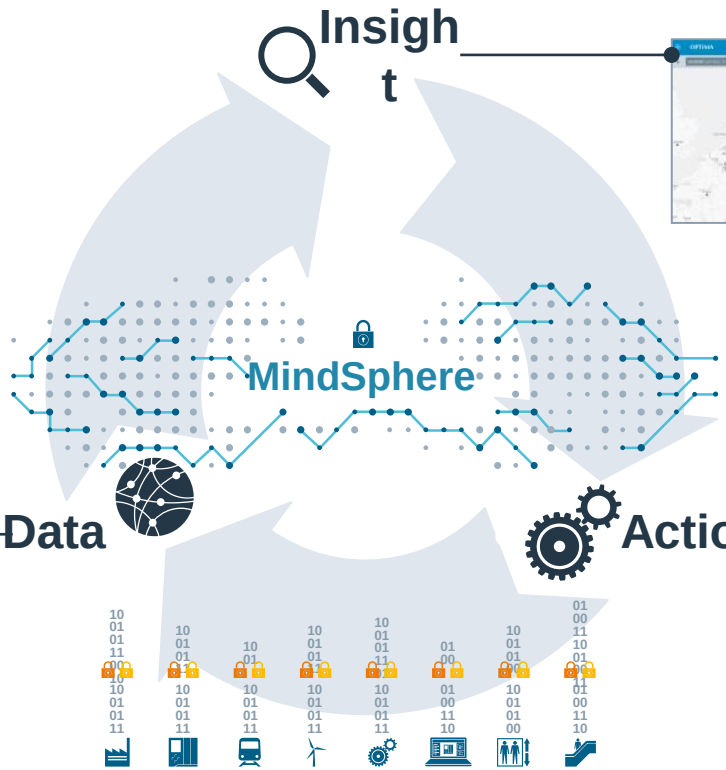
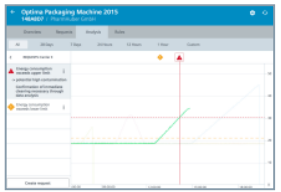
MindSphere – The cloud-based, open IoT operating system

Virtual World

Real World





Gain immediate **insights** on whole fleet as well as individual assets using own, Siemens or partner apps

Configure data collection as well as **connectivity** quickly and easily

Transform insights into actionable results to **increase uptime and efficiency**

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MindSphere APIs – scalable application and connectivity development

MindApps API Characteristics:

- **Application Programming Interface (API)** of MindSphere for development of customer owned analytical apps (MindApps)
- Optimized for **industrial IoT App development** with additional reusable supporting modules (e.g. parsing , analytics and visualization modules)
- Upcoming MindSphere **App Store** will provide ready to use Applications

MindConnect Characteristics:

- Dedicated IoT Gateways with **MindConnect Nano** and **MindConnect IoT 2000**
- MindConnect **embedded** in standard Siemens industrial products also with engineering via TIA Portal (v14), with e.g. SIMATIC, Sinumerik
- Upcoming **MindConnect Software** and **APIs** for own integration into assets / devices

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Strong open ecosystem emerging around MindSphere, opening new opportunities for our customers and partners

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Exemplary Set of Partners

Consulting / strategy

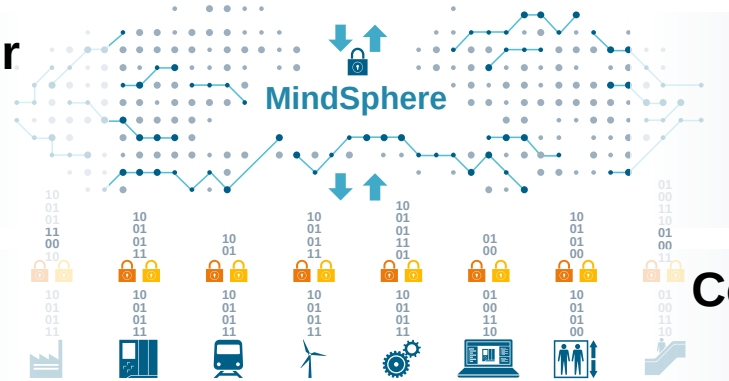
McKinsey&Company
pwc
TATA
TATA CONSULTANCY SERVICES
accenture
High performance. Delivered.

Technology Provider

Microsoft Azure
accenture
High performance. Delivered.
IBM Watson
SAP

Application Developer

SAP
evosoft
senseye
pwc
accenture
High performance. Delivered.



IaaS Provider

Microsoft Azure
SAP
Atos

System Integrator

accenture
High performance. Delivered.
Atos
OMNETRIC Group
A Siemens & Accenture Company

Connectivity Developer

bluvision
part of HID Global
TATA
TATA CONSULTANCY SERVICES

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MindSphere / Codex enables a quick, easy and secure start into data-driven services

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STEP 1
Connect

Get MindSphere user-account, receive and integrate your MindConnect element into your machine/equipment

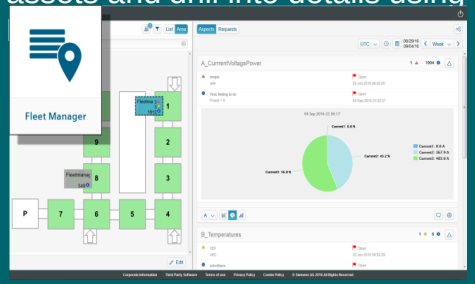
STEP 2
Configure

Configure data acquisition, connectivity and Visual Analyzer via MindSphere

YouTube Asset Configuration on MindSphere - experience how easy it. Click here

STEP 3
Run the Service

Monitor e.g. health status of all assets and drill into details using



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Atos Codex - supporting our customer's journey to data centric business

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1. Methodology & Data Science - Ideator

Agile analytics consulting and Proof-of-Value sprints to transform data into profitable insights

2. Customer design labs (FabLabs)

Accelerators, templated solutions and fast incubation services to develop at start-up speed

3. Open industrial analytic platform

As a service, on premise and BPO platforms to boost analytics agility & TCO fully embedded with our IOT solutions-

canopy the atos cloud
Bull atos technologies
worldline e-payment services

5. Industrialize best practices and use cases

Ready to deploy use cases to build best-in-class business solutions

4. High-Performance Data Analytics

Open Exascale-class supercomputing and appliances to provide exceptional outcomes

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5 Steps from Discovery to Actionable Information

Key Challenges and Core Competences

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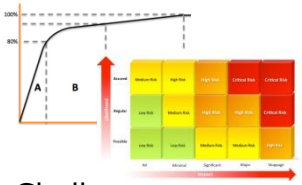
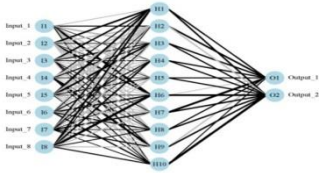
1 Problem & Opportunity Discovery	2 Data Creation & Mechanical Detection	3 Data Collection /Data Storing	4 Turn data into Business Value	5 Turn Business Value into actionable Information
				
Challenges				
– Where are the key levers with direct impact on bottom-line? – How to prioritizes? – Where to start?	– What parameters are available and needed? – How can I detect parameters and create new data sources?	– How can data sources be accessed? – How to perform data ingestion? – What is the right IT Technology? – How to store data?	– What are the right statistical techniques? – What are the right algorithms and models? – How to visually present the result?	– How can the information be inserted into processes? – How can new micro applications be delivered?
Competences				
– Subject Matter Expert – Process Expert – Business Consultant	– Subject Matter Expert – Mechanical / Electrical Engineer	– Data Engineer – Analytics Architect	– Data Scientist / Mathematician – Analytics Engineer – GUI Expert	– Process Expert – Subject Matter Expert – Apps Developer

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MindSphere / Codex applied already with business case success stories

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Major soft drink producer

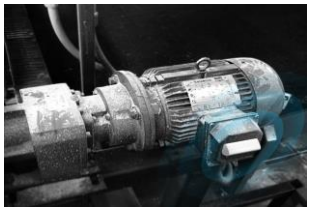
Machine monitoring

- **Affordable IoT solution** for **predictive maintenance** of 150 motors
- **Increased asset uptime** through accurate failure prediction
- Global **accessibility of data**

Multinational steel company

Motor fleet management

- **Low-cost solution** for **monitoring of motor fleet**
- **Reduced downtime** in all motor applications
- **Visualization** of motor fleet



Major international airport

Failure prediction for baggage system

- Identification of all potential **failures in baggage trail**
- **On-time maintenance of defective baggage carts**
- Visualization of **system failures**

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