

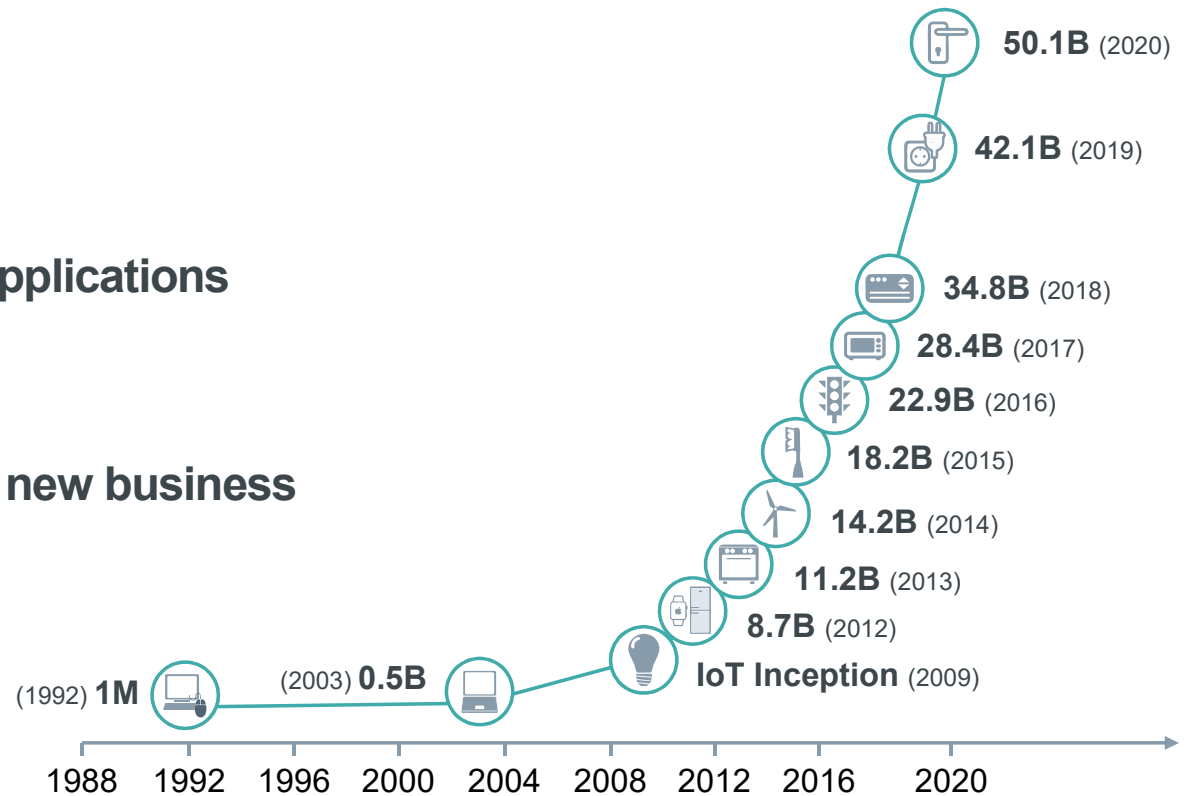
MindSphere

The cloud-based, open IoT operating system
on MS Azure

IoT is a catalyst for competitive advantage

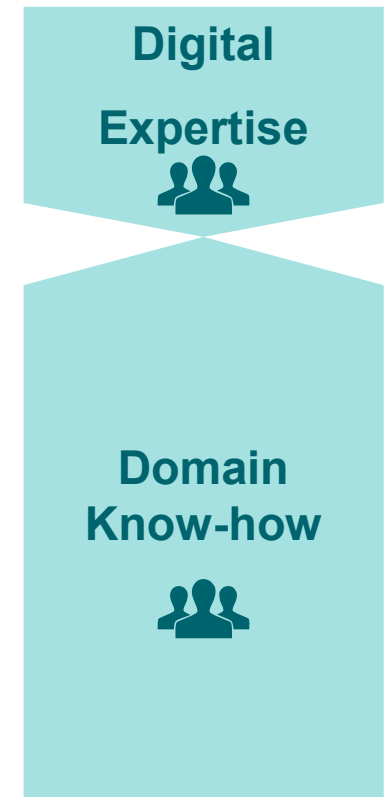
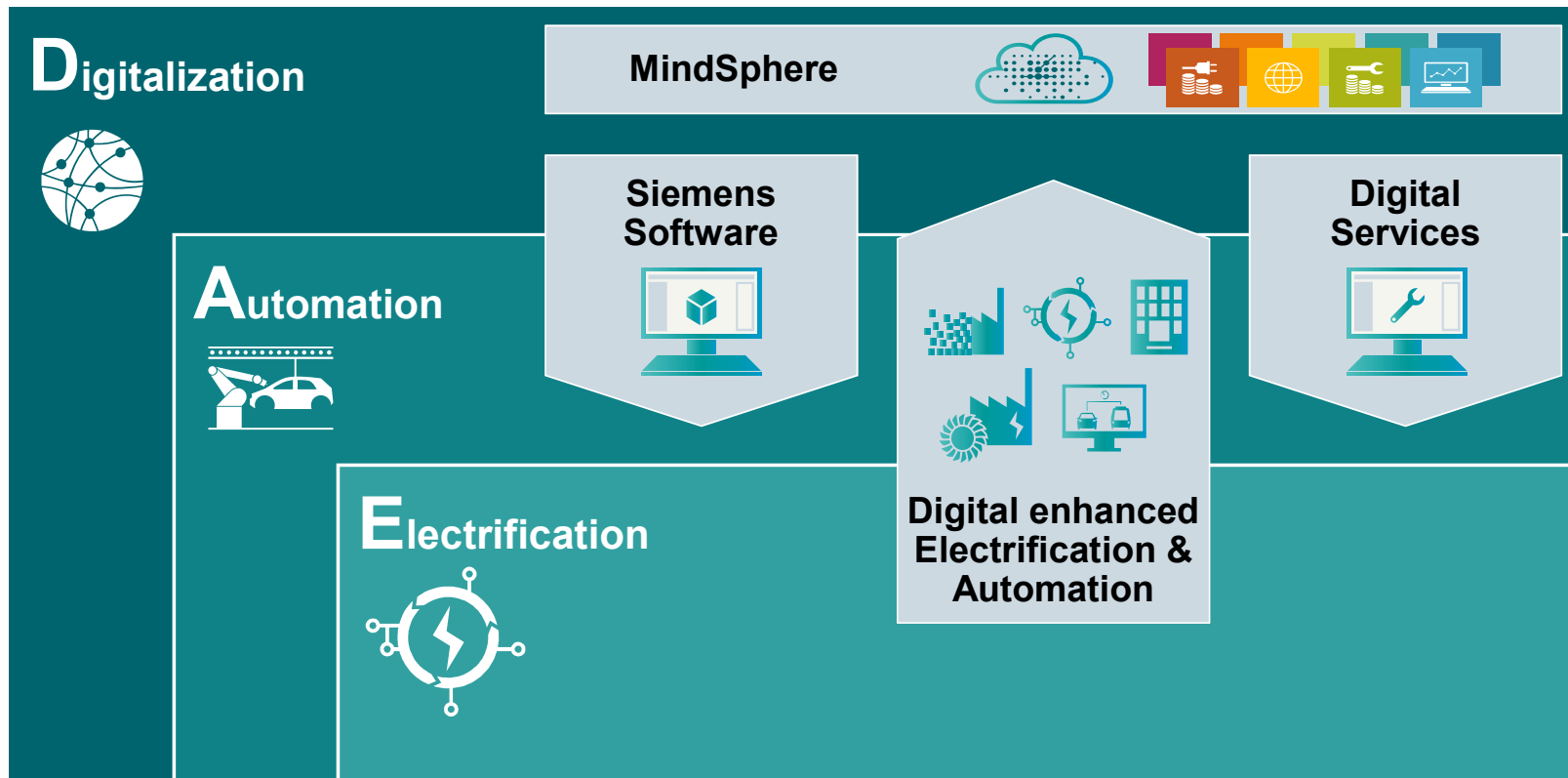


- 1 Entry point to digitalization
- 2 Foundation for development of applications
- 3 Multiplier for digital services and new business



Digitalization adds tremendous value to Siemens business thanks to the integration of Siemens domain know-how

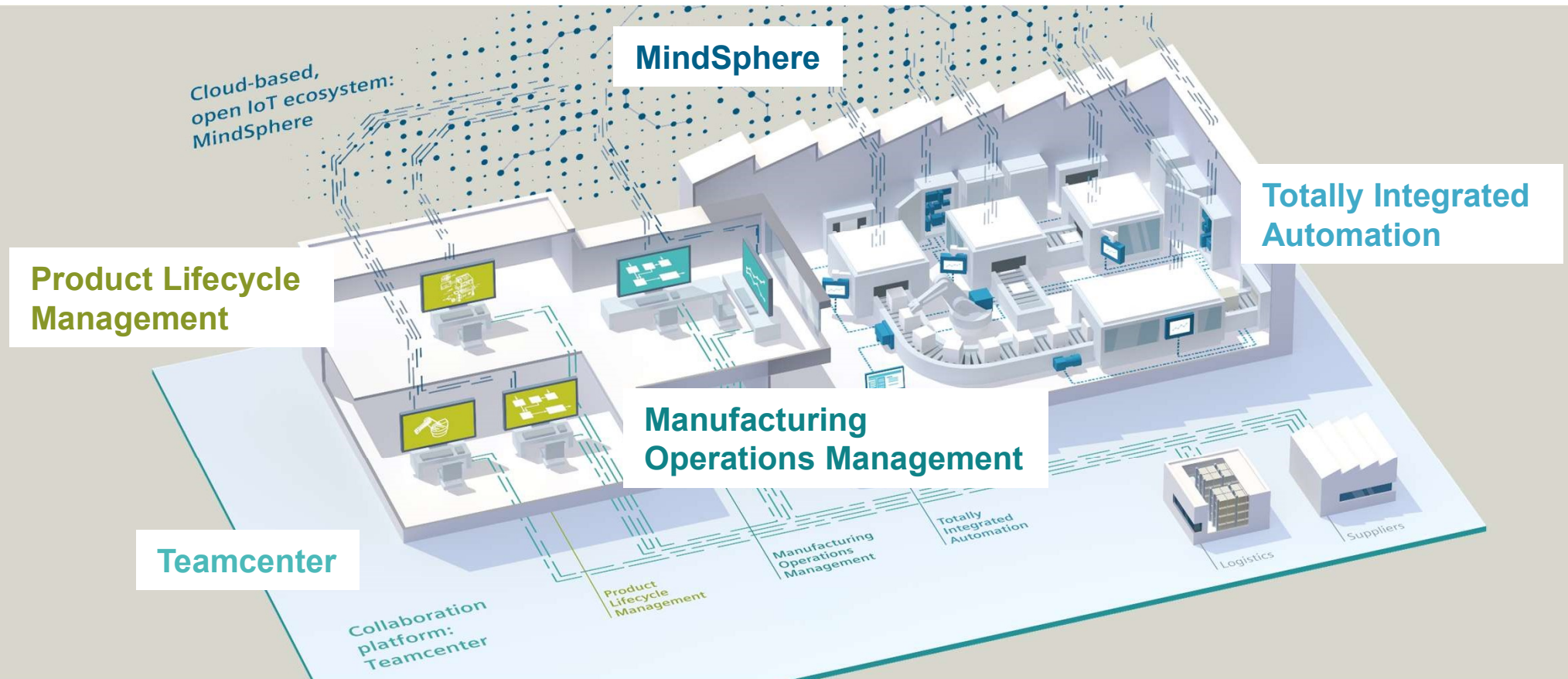
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Digital Enterprise Suite

Siemens' answer to customer requirements

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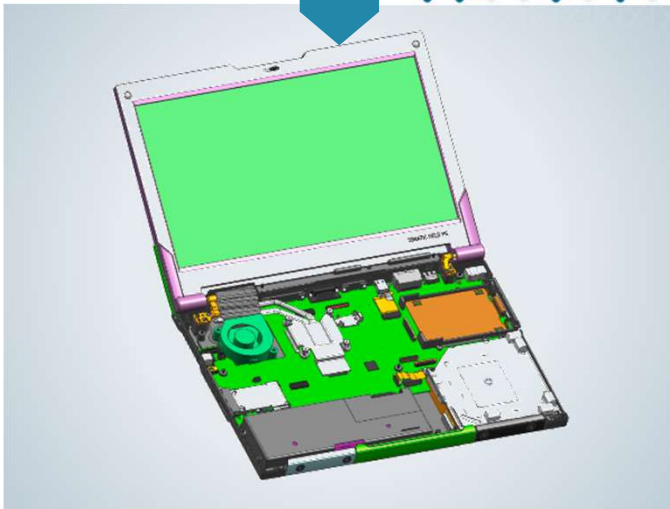


MindSphere enables the creation of a powerful Digital Twin through the entire value chain

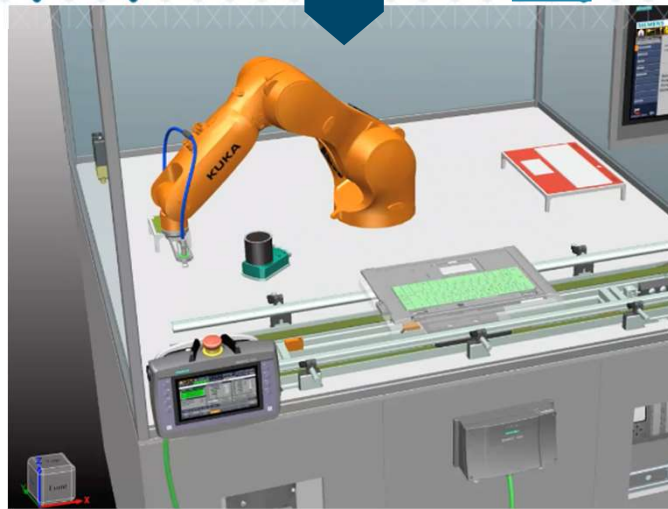
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feed back insights to continuously optimize product and production



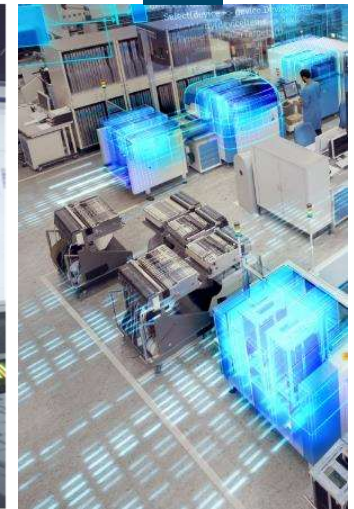
Digital Twin of the product



Digital Twin of the production



Digital Twin of the performance



Collaboration platform: Teamcenter

MindSphere – The cloud-based, open IoT operating system



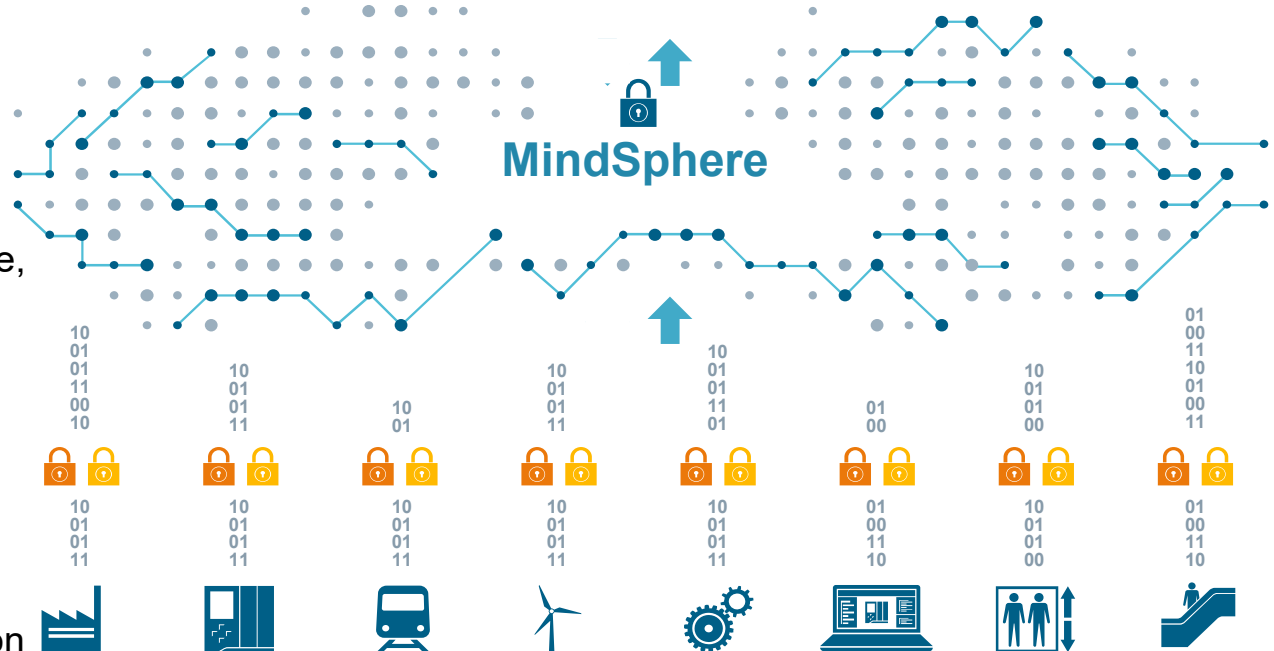
MindApps

Powerful industry applications and digital services for asset transparency and analytical insights. Partners and customers can create MindSphere applications



MindSphere

Open Platform as a Service (PaaS) for scalable, global IoT connectivity and application development with native cloud accessibility



MindConnect

Connecting Products, Plants, Systems, Machines, Enterprise applications and Legacy databases with secure plug and play connection of Siemens and third-party products and equipment

MindSphere – Key capabilities of the IoT operating system



Digital Twin of the Performance – Rittal GmbH & Co. KG MindSphere – Predictive Maintenance

Challenges

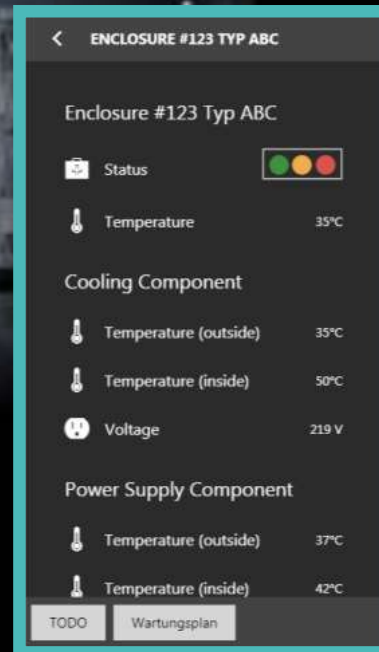
- Large Population of Cooling Device Control Cabinets
- Timely and Efficient Operations Data Collection and Analysis
- Inconsistent Maintenance Schedules
- Uniform Visibility of Enclosure Performance Status

Transformation Results

- Virtual Production Hall / Shop Floor Layouts
- Aggregated Status and Performance Rollup and Drill-Down of all Devices
- On-Demand Visual Device and Enclosure Status – Temperature, Voltage, Power Supplies....

Value

- Improved Predictive Maintenance Management Driving Higher Quality, Efficiency, and Services Offerings
- Real-Time Status Monitoring and KPIs with MindSphere



Digital Twin of the Performance – Industry Case

MindSphere – OEE Plant Transparency

Challenges

- Multiple Plant Facilities with Silo Data
- Number of Disparate Legacy Systems
- Different Proprietary Protocols
- Realizing World-Class Processes and Practices

Transformation Results

- Industry Standard Integrations and Data Collections into MindSphere Platform
- Common Portal across all Manufacturing Facilities for Ease-of-Use and Repeatability
- Global Cloud-Based Data Access
- Visual Data Analytics Dashboard
- Drill-Down into Outlier Results – Failure, Idle, Process Defects, Reduced Speed ... Yield...

Value

- Monitor OEE of Each Facility, Plant and Line
- Operations Transparency
- New Production and Process Insights Driving Unified Best Practices for Higher Performance
- Higher Quality and Resource Optimization

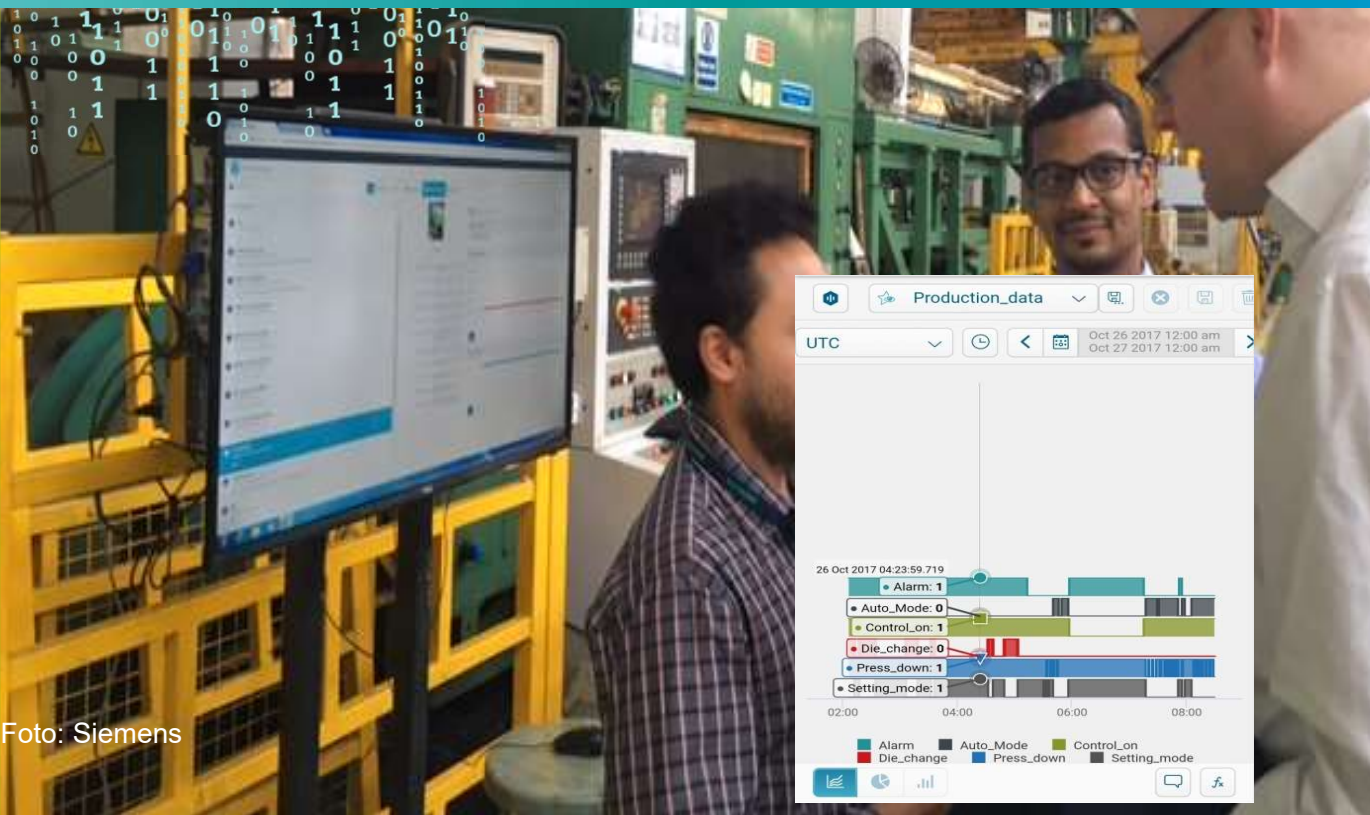


Foto: Siemens

Digital Twin of the Performance – FC Bayern

MindSphere – Facilities Management

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Challenges

- Stadium Infrastructure Relies on a Great Number of Moving Parts
- Reliable Power Supply and Lightning Protection

Transformation Results

- Automated Facilities Management for Uptime and Availability
- Intelligent Decision Support for Building Automation, Fire Protection and Security
- Aggregated Data Collection on MindSphere IOT Open Platform
- Real Time Monitoring and Visual Status with Performance Rollup and Drill-Down

Value

- Improve Maintenance Efficiency, Safety and Reduce Costs
- Power Supply Sustainability and Resiliency
- Increased Fan & Player Experience

Foto : FC Bayern

Ind:BT

MindSphere with growing open partner ecosystem



MindSphere and MS Azure – A strong Combination

Available 2018



MindSphere on MS Azure

Strong partnership to proliferate Industrial IoT

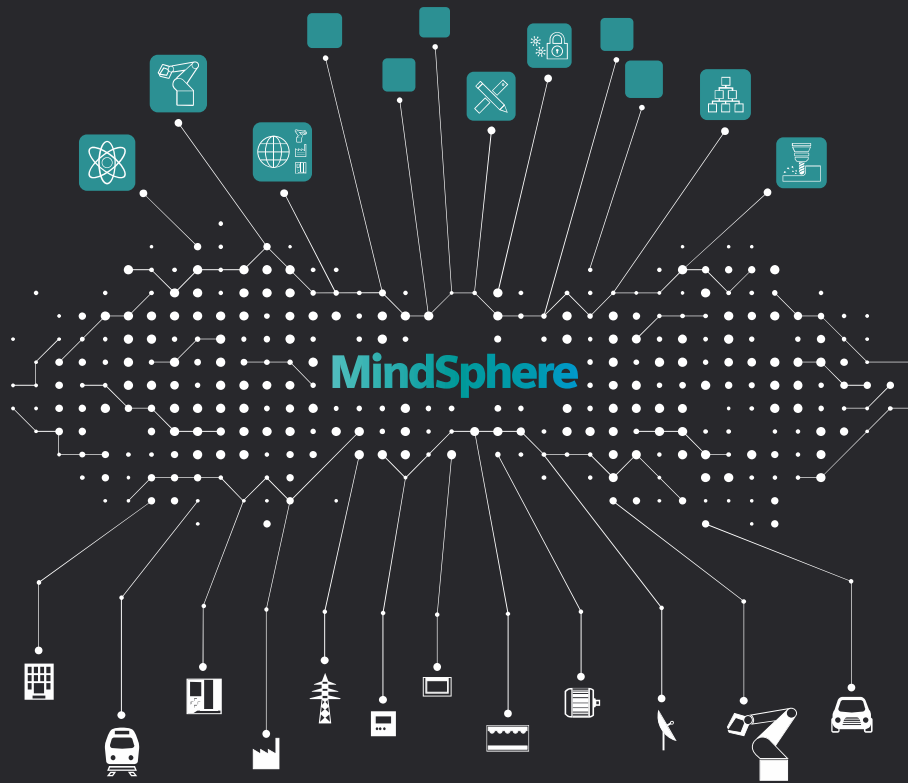
Microsoft Azure: The leader in B2B Cloud

Siemens: The leader in Industrial Digitalization

Unbeatable joint value add for our customers

Thank you for your attention!

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