Digitalization changes everything.

The next trillion dollars will be earned with data – for our customers and for our industries.

Michael Dell, founder of Dell Inc.

Digital is the main reason just over half of the companies on the Fortune 500 have disappeared since the year 2000.

Pierre Nanterme, CEO Accenture
The Evolution toward Industry 4.0
From Industry 1.0 to Industry 4.0

First Industrial Revolution
First mechanical loom, 1784

Second Industrial Revolution
First production line, Cincinnati Slaughterhouses, 1870

Third Industrial Revolution
First programmable logic controller (PLC), Modicon 084, 1969

Fourth Industrial Revolution

Degree of complexity

Time
1800 1900 2000 Today
Integrating and digitalizing the entire value chain is key to staying competitive in the future.

Cloud-based, open IoT operating system: MindSphere

– Collaboration platform: Teamcenter
– Third party applications

1. Product design
2. Production planning
3. Production engineering
4. Production execution
5. Services

Suppliers and logistics
Creating a Digital Twin of the entire value chain

Product design

Production planning

Production engineering

Production execution

Services

Cloud-based, open IoT operating system: MindSphere

Collaboration platform: Teamcenter

Suppliers and logistics

Third party applications
Manufacturing Operations Management
A crucial part of our Digital Enterprise

Teamcenter and the Digital Twin
Use simulation to achieve foresight in the virtual World

MindSphere
Use Big Data Analytics to gain insight and drive continuous improvement

MOM
 Seamlessly coordinate and control resources in the real world
Intelligent algorithms enable orchestration of information across manufacturing processes and disciplines towards the implementation of a manufacturing-specific strategies.
MOM Portfolio evolution to maximize value and support implementation of industry-specific strategies

Increasing value of MOM technology through integration

Manufacturing
Effective cross-functional collaboration

Quality
Consolidated Products and Process Quality

Engineering
Integrated and automated Production System Engineering

On-premises

Cloud

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Production Execution - Use Case 1

Advanced Planning and Scheduling of manufacturing operations in one tool

SIMATIC IT Preactor
Production Execution - Use Case 2

Import of BOM / BOP from Teamcenter, define Workflow and Dispatch Order SIMATIC IT
Production Execution - Use Case 3

Run Manual Assembly Operation and escalate deviations to Teamcenter

Camstar
Production Execution - Use Case 4

Integrated Visual Inspection in the P.C.B. manufacturing

Camstar
Run inspection operations and manage issue for high quality products

SIMATIC IT / IBS QMS
Production Execution - Use Case 6

Analytical and visualization tools to support decision-makers

Manufacturing Intelligence
The Smart Manufacturing Approach
A vision that needs a business strategy to evolve

“Smart Manufacturing is the integration of intelligence in the actual machines, parts, materials, products, buildings and supply chain, and the application of that intelligence within a connected, open end-to-end process and infrastructure. With Smart Manufacturing, data is the master, no longer the system”

Forbes
“What do C-Suite executive need to know/understand about Smart Manufacturing”

Spend time planning change management
Focus investments to evolve your roadmap
Security of data and infrastructure will be key
Leverage talented people beside smart technology
Smart Manufacturing
Overview of the main business impacts

- Rapid and reliable New Product Introduction
- Improved quality of materials and products
- Consistent, reliable processes globally
- Compliance with Regulation, and a reduced time to clearance
- Rapid response to change, and agility to handle product variants by market
- Accelerated Time to Market with innovation

Take time to build models that estimate the return on your smart manufacturing investment
Now is the time to become a Digital Enterprise.
Thank you!

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