Driving the Digital Enterprise

Dr. Jan Mrosik | CEO Digital Factory
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
Driving value and growth

<table>
<thead>
<tr>
<th>Strategic direction</th>
<th>Revenue FY 2016</th>
<th>Market Growth CAGR FY17-20</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Digitalization</strong></td>
<td></td>
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<tr>
<td>Strengthen leadership by combining software, platforms, and services</td>
<td>Siemens software ~€3.3bn</td>
<td>Digital services ~€1.0bn</td>
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<tr>
<td></td>
<td>MindSphere IoT operating system</td>
<td></td>
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<tr>
<td><strong>Automation</strong></td>
<td></td>
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<tr>
<td>Expand number one position and utilize for digitalization</td>
<td>Enhanced automation ~€18bn</td>
<td>Classic services ~€17bn</td>
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<tr>
<td><strong>Electrification</strong></td>
<td></td>
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<tr>
<td>Differentiate through enhanced offerings with automation and digitalization</td>
<td>Enhanced electrification ~€42bn</td>
<td></td>
</tr>
</tbody>
</table>
Driving value and growth

Siemens software ~€3.3bn
Digital services ~€1.0bn

Mentor Graphics

+€1.1bn

MindSphere IoT operating system

+12%
Combining the real world with the virtual world

PLM Software

Virtual

Real

Automation
Combining the real world with the virtual world
Proven through the systematic expansion of our portfolio

Siemens software

Siemens automation #1

SIMATIC¹ Totally Integrated Automation¹


¹ In-house developments/digital upgrades    ² Cooperation

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Combining the real world with the virtual world and the Internet of Things
Our customers have essential requirements

- Speed
- Flexibility
- Quality
- Efficiency
- Security
Analyzing assets as they perform with MindSphere and feed back insights to continuously optimize the value chain
Create a powerful Digital Twin of entire value chain

Cloud-based, open IoT operating system: MindSphere

Third party applications

Collaboration platform: Teamcenter

Suppliers and logistics

1. Product design
2. Production planning
3. Production engineering
4. Production execution
5. Services
Design the product
NX CAD
Simulate the physical behavior

Simcenter
Simulate the product
Simcenter

1 2 3 4 5
Design and simulate electrical systems

Mentor Graphics
Develop, simulate, validate, and manage embedded software

Polarion ALM
Creating the most holistic digital twin available on the market

Software design and simulation

Electrical design and simulation

Mechanical and environmental design and simulation

Digital Twin product

Digital Twin production

Digital Twin performance

MindSphere

Automation and shop floor

feed back into product cycle, production, service, and production

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Dr. Jan Mrosik | CEO Digital Factory Division
Create the layout and select equipment

Line Designer
Simulate and optimize production process

Tecnomatix
Process Simulate
Simulate and optimize material flow

Plant Simulation
Automatically generate PLC code for TIA Portal

Automation Designer
Validate the PLC code in the virtual world

Tecnomatix Process Simulate, PLCSIM Advanced, TIA Portal
Fast and efficient engineering and commissioning

TIA Portal
Creating the most holistic digital twin available on the market

Digital Twin product

Digital Twin production

Digital Twin performance

MindSphere

feed back insights to continuously optimize product and production

Automation and shop floor
Manage work operations and quality

SIMATIC IT, Camstar, R&D Suite, QMS
Efficient and secure production

Totally Integrated Automation
Holistic automation portfolio with TIA Portal as its integrated engineering framework

**SIMATIC**
Scalable industrial automation systems

**SINUMERIK**
Intelligent solutions for machine tools

**SIMOTION**
High-end motion control system

**SINAMICS**
Frequency converter for every drive application

**SIMOTICS**
Highly efficient electric motors

**SIRIUS**
Modular industrial controls
Let your products and your production speak to you.
MindSphere
A comprehensive ecosystem with strong partners
Creating the most holistic digital twin available on the market

feed back insights to continuously optimize product and production

MindSphere

Digital Twin product

Digital Twin production

Digital Twin performance

Automation and shop floor
Creating the most holistic digital twin available on the market

Integrated data model

Teamcenter

MindSphere

Digital Twin product

Digital Twin production

Digital Twin performance
Cloud-based, open IoT operating system: MindSphere

Digital Enterprise Suite
Unique portfolio for the digital transformation
Holistic approach consisting of PLM software and automation

**NX CAD Software**
Designing the 3D model, basis of the Digital Twin

**Mechatronics Concept Designer**
Motion simulation, parametrization, and programming

**Collaboration Platform: Teamcenter**
Consistency and integration of the data model

**TIA Portal and automation components**
Combining software & hardware in one engineering framework
Digitalization strategy based on mechatronic development

- virtual commissioning
- optimized workflow
- +30% engineering efficiency by 2020
We’ve done digitalization right when the customer comes to us wanting a piece of equipment, and we can configure the unit with the customer within two days at our offices.

Dr. Hagen Gehringer,
Managing Director, Bausch + Ströbel
**The most holistic Digital Twin of the product**

<table>
<thead>
<tr>
<th>Design and simulation of</th>
<th>Siemens</th>
<th>Competitor A</th>
<th>Competitor B</th>
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<tbody>
<tr>
<td>Mechanics</td>
<td>✔️</td>
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<td>Electronics</td>
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**Digital Twin product**
## The most holistic approach

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<tr>
<td>Siemens</td>
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<tr>
<td>Competitor B</td>
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<tr>
<td>Competitor C</td>
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<tr>
<td>Competitor D / E</td>
<td>★</td>
<td>★</td>
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★ ★ ★ Completeness of portfolio offering
Thank you.