

Innovation at speed and scale

Roland Busch, CTO and Member of the
Managing Board of Siemens AG

We delivered more than we promised



Siemens Innovation Day 2016

Increase R&D investment to over €5 bn

Create new digital offerings,
roll-out of MindSphere

Achieve double-digit annual growth
in digital businesses

Siemens Innovation Day 2017

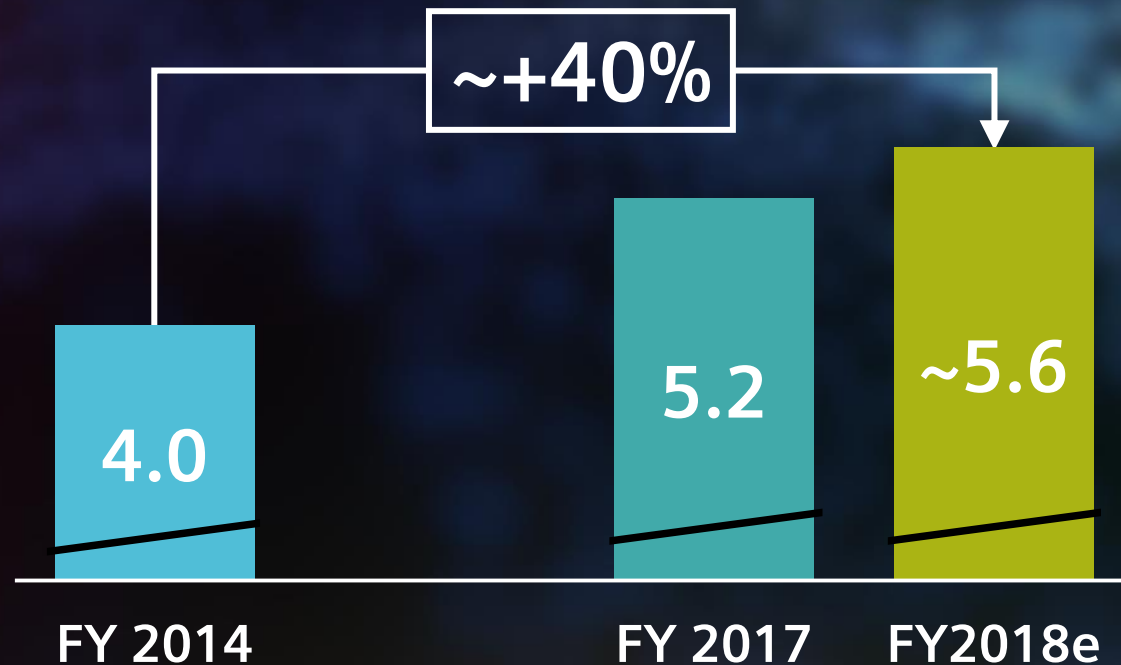
€5.2 bn R&D investment in Electrification,
Automation, and Digitalization

More than 250 digital offerings (digital
services and industrial applications),
1 million connected assets (+25%)

20% revenue growth from software
and digital services



Spending for research and development in billions of euros



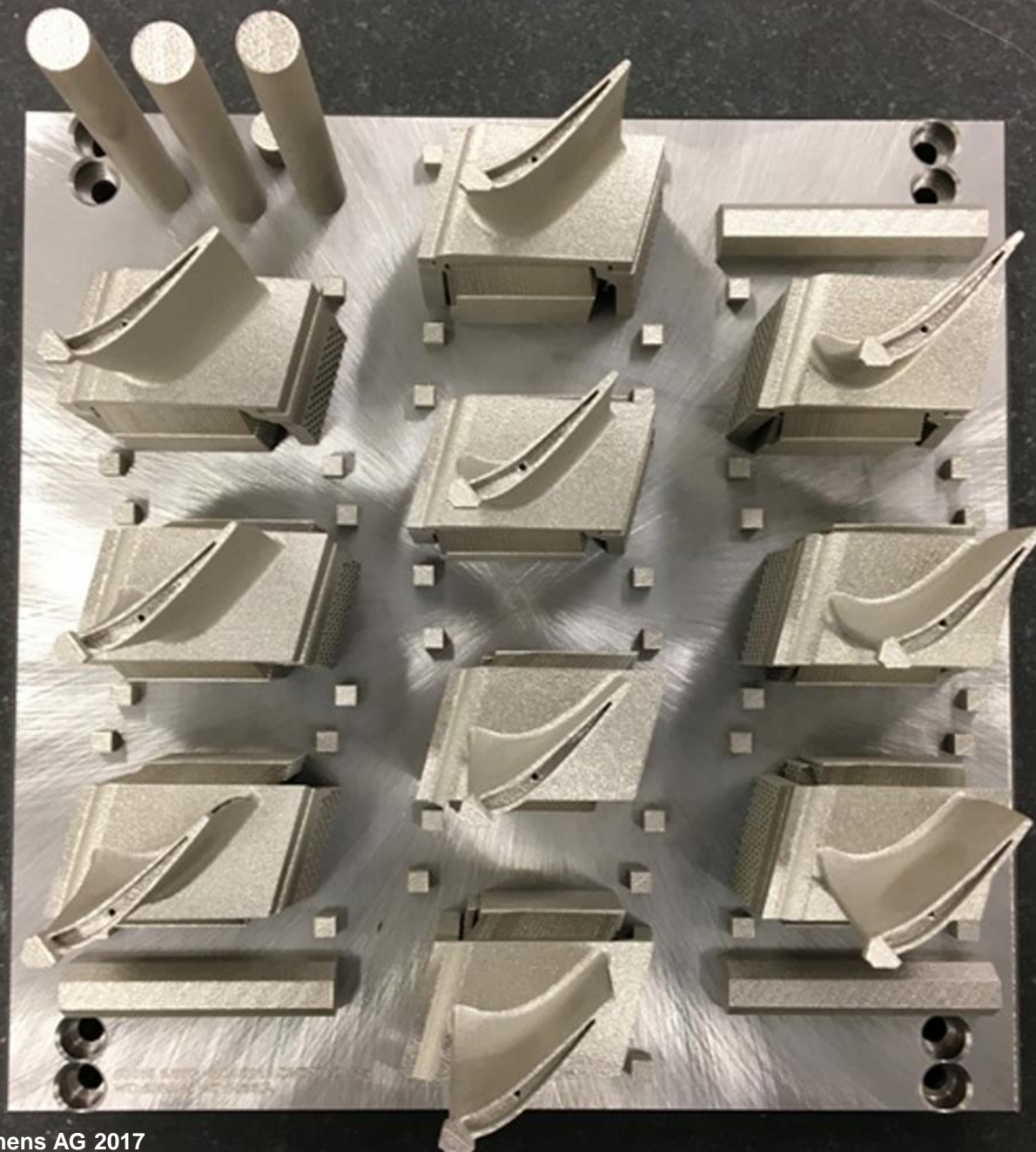
€1.2 bn R&D in digital
business in FY 2017

20% R&D intensity for digital
business

Currently 24,500
software engineers

Siemens Healthineers
visualization experts
nominated for the 2017
German Future Prize





3D printing of gas turbine blades



Atellica: ultrafast and flexible diagnostics platform

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**Mireo: innovative
platform for premium-
class mass transit**

1,100 kV: record-breaking HVDC

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NX for additive manufacturing

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Innovation with a clear focus – Siemens Company Core Technologies



Additive
Manufacturing

Autonomous
Robotics

Blockchain
Applications

Connected
(e)Mobility

Connectivity and
Edge Devices

Cybersecurity

Data Analytics,
Artificial Intelligence

Distributed
Energy Systems

Energy
Storage

Future of
Automation

Materials

Power Electronics

Simulation
and Digital Twin

Software Systems
and Processes

Improving innovation speed and capital allocation with Siemens Company Core Technologies

Full innovation cycle:
university collaboration – applied research
– advanced applications and prototyping

Covering technological as well as **business model innovations**

Output-driven and market-oriented

Tapping **outside innovations** with partners/ecosystem and **next47**

~€500 million focused investments

Our innovation and digitalization agenda



Speed and scale

Digitalization is a key driver of innovation and growth



	Revenue FY 2017	+20% nominal ¹⁾ /+11% excl. Mentor		Market growth CAGR FY 18 – 22	
Digitalization	Siemens software	~€4.0 bn	Digital services	~€1.2 bn	~+8%
	MindSphere				
Automation	Enhanced automation	~€19 bn	Classic services	~€17 bn	~+3%
Electrification	Enhanced electrification	~€43 bn			+1-3%

Revenue digital businesses: €5.2 bn

1) Total growth: +20% (+20% in software, +20% in digital services)
 Growth excluding Mentor Graphics acquisition: +11% (+9% in software, +20% in digital services)

Our offering differentiates us clearly from our competitors



- Deep domain know-how in a broad range of markets and industries
- Strong installed base/connected fleet
- Powerful ecosystem
- Unmatched digital portfolio:
MindSphere, Software, Services, Security
- Numerous Siemens internal use cases as proof points



Siemens has continuously and strategically invested in its software portfolio and partnerships

1) Minority equity investment

Siemens ecosystem



Customers

Application developers



Integrators



Technology & Infrastructure partners

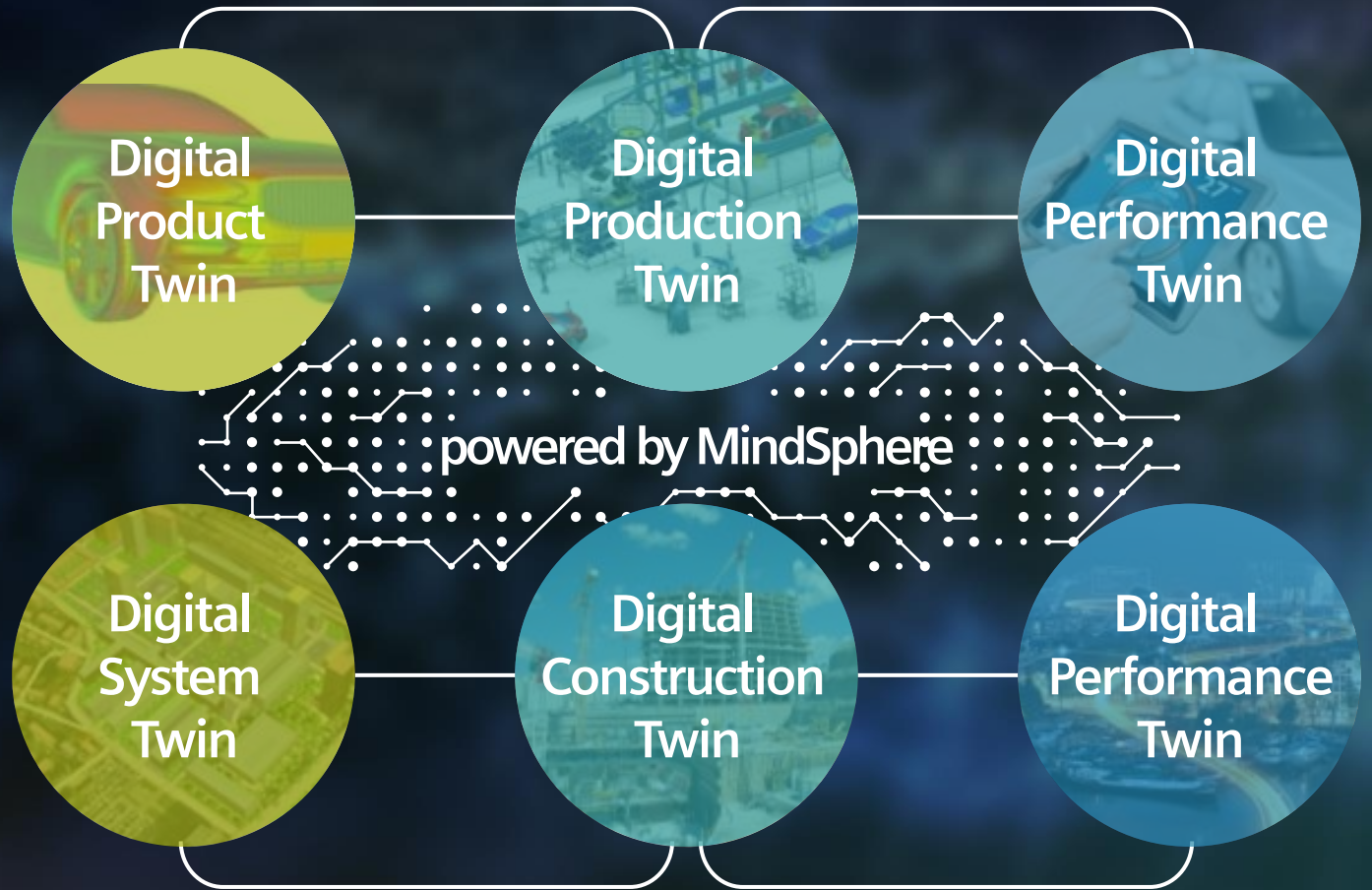


Closed loop innovation – the digital twin improves development, production and operation



MindSphere connects the virtual with the real world – from factories to infrastructure

Manufacturing/
factories



MindSphere 3.0
on
Amazon Web Services

MindSphere, open cloud-based IoT operating system

- Connectivity
- Strong partner ecosystem
- Closed-loop innovation
- Advanced analytics and machine learning
- Powerful industrial applications and digital services

Scaling up with AWS

Developments of our digital offerings over the last 12 months



+25%

connected assets:
1 million devices
and systems

doubled

number of
customers:
plus 2,900

4x

increase of digital
offerings:
more than 250

The digitalization of industries
requires a different approach

How to turn
data into value?
How to create
digital offerings?

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MindSphere Application Centers for Siemens digital offerings



Domain know-how/vertical expertise

MindSphere and software portfolio

Data analytics capabilities

IoT integration competence

Co-location



Customer

Co-creation

Digital offerings

Industrial apps

Digitally enhanced services

Integrated digital solutions

MindSphere Application Centers for Siemens digital offerings



20

MindSphere
Application Centers

50

Locations in 17 countries
across the globe

~900

software developers, data
specialists and engineers

Speed and scale



MindSphere Application Centers – Locations around the globe



MindSphere Application Centers – Creating value for the customer



Algonquin College, Canada
University building

\$3.7 million
annual cost savings

Amtrak, U.S.
Rolling stock

99%
availability and reliability
of rail vehicles guaranteed

Deutsche Bahn
Interlocking Bremen

> 80%
failures from blocked or
faulty point switches
predicted and mitigated

MindSphere Application Centers – Creating value for the customer



U.S. utility, Jacksonville
Grid infrastructure

\$1 million
savings per year with
advanced metering

Eletrobrás, Brazil
Power supply

50%
reduction in
non-technical power
losses of \$150 m

Siemens Electronics
Manufacturing, Erlangen

from 25 to <7
days delivery time plus
quality enhancement

Siemens is driving digitalization on all levels



Clear and focused
R&D capital allocation
to drive differentiation

Leverage domain know-
how, digital portfolio
and customer
relationship

Growing digital
businesses by
more than 10 percent

Speed and scale