



# **Siemens – A focused technology company accelerating high value growth**

Roland Busch, President and CEO Siemens AG

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Due to rounding, numbers presented throughout this and other documents may not add up precisely to the totals provided and percentages may not precisely reflect the absolute figures.

# Why to invest in Siemens

- 1** | **We are a focused technology company,** addressing highly attractive growth markets with our global footprint
- 2** | **We can empower our customers** to master their digital transformation and sustainability challenges with our technologies
- 3** | **We combine the real and the digital worlds** like no other company can
- 4** | **We are pursuing a clear focus on value creation** including profit, cash, stringent capital allocation and execution
- 5** | **We have the right strategy, the right team, at the right time**

# Digital transformation is imperative for every industry

## Industry



60%

**of manufacturing tasks**  
can be automated, improving productivity, quality and safety.

## Infrastructure



80%

**of lifecycle costs**  
arise from operations. Digital technologies can unlock savings potential of up to 20%.

## Mobility



20%

**potential increase**  
in transport capacity through digital signaling technology without building additional infrastructure.

## Healthcare



50%

**of stroke-related costs**  
could be reduced by AI and digital-twin technologies.

Source: McKinsey, BCG, Siemens Healthineers



**Combining the real  
and digital worlds**  
as foundation of our  
high-value growth  
strategy

**Real**

**Digital**

**Quality**



**Sustainability**

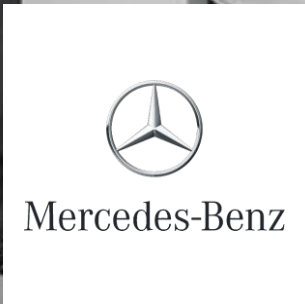
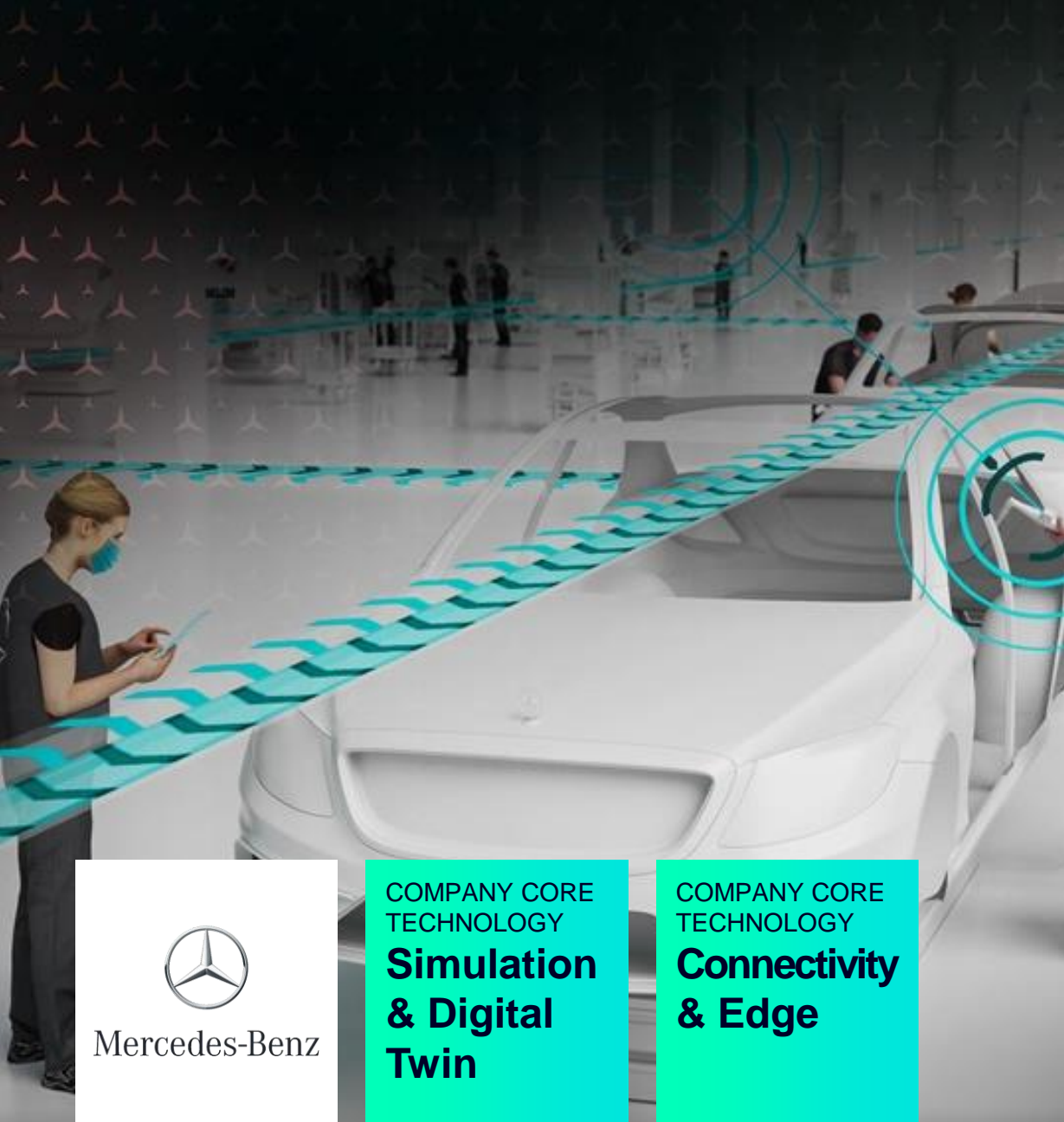


**Flexibility**



**Productivity**





COMPANY CORE  
TECHNOLOGY  
**Simulation  
& Digital  
Twin**

COMPANY CORE  
TECHNOLOGY  
**Connectivity  
& Edge**

MERCEDES-BENZ

## Transforming the automotive industry

### Customer challenge

- Mercedes-Benz and Siemens to expand the digitalization of sustainable production methods

### Solution

- Partnership with Siemens Digital Industries, Smart Infrastructure and Siemens Advanta to develop a digital factory campus:
  - Digital end-to-end technologies for flexible production
  - Resource-saving, CO<sub>2</sub>-neutral factories
  - New working environments

### Customer benefit

- Create innovative solutions for new Mercedes-Benz Digital Factory Campus in Berlin as a blueprint for ~30 factories worldwide
- Roll-out of new developments at all Mercedes-Benz plants



BANE NOR NORWAY

## Transforming transportation

### Customer challenge

- Analogue system with more than 11,000 signals and more than 300 interlockings
- Increase in capacity throughout the network

### Solution

- Upgrade to the European Train Control System (ETCS)
- Replacement of the entire railway infrastructure in Norway with one digital system
- One digital interlocking and a country-wide data center (“one country, one interlocking”)

### Customer benefit

- Enhanced safety, punctuality and capacity
- Reduction in trackside delays by 50%
- Reduction of maintenance by 30%

BANE NOR

COMPANY CORE  
TECHNOLOGY

**Cyber  
Security**

COMPANY CORE  
TECHNOLOGY

**Software  
systems &  
processes**



BIONTECH

## Transforming the pharma industry

### Customer challenge

- Rapid production of Covid-19 vaccine in large quantities

### Solution

- Conversion of an existing plant with digital and automation technologies
- Paperless documentation of development and production, immediately fulfilling all documentation requirements

### Customer benefit

- Accelerated vaccine development and production within one year
- Conversion time for existing production facility cut from one year to five months

BIONTECH

COMPANY CORE  
TECHNOLOGY

**Data  
Analytics  
& AI**

COMPANY CORE  
TECHNOLOGY

**Simulation  
& Digital  
Twin**





COMPANY CORE  
TECHNOLOGY  
**Simulation  
& Digital  
Twin**

TRAKRAP

## Doing more with less

### Customer challenge

- Provide eco-friendly packaging technology faster and cost efficiently

### Solution

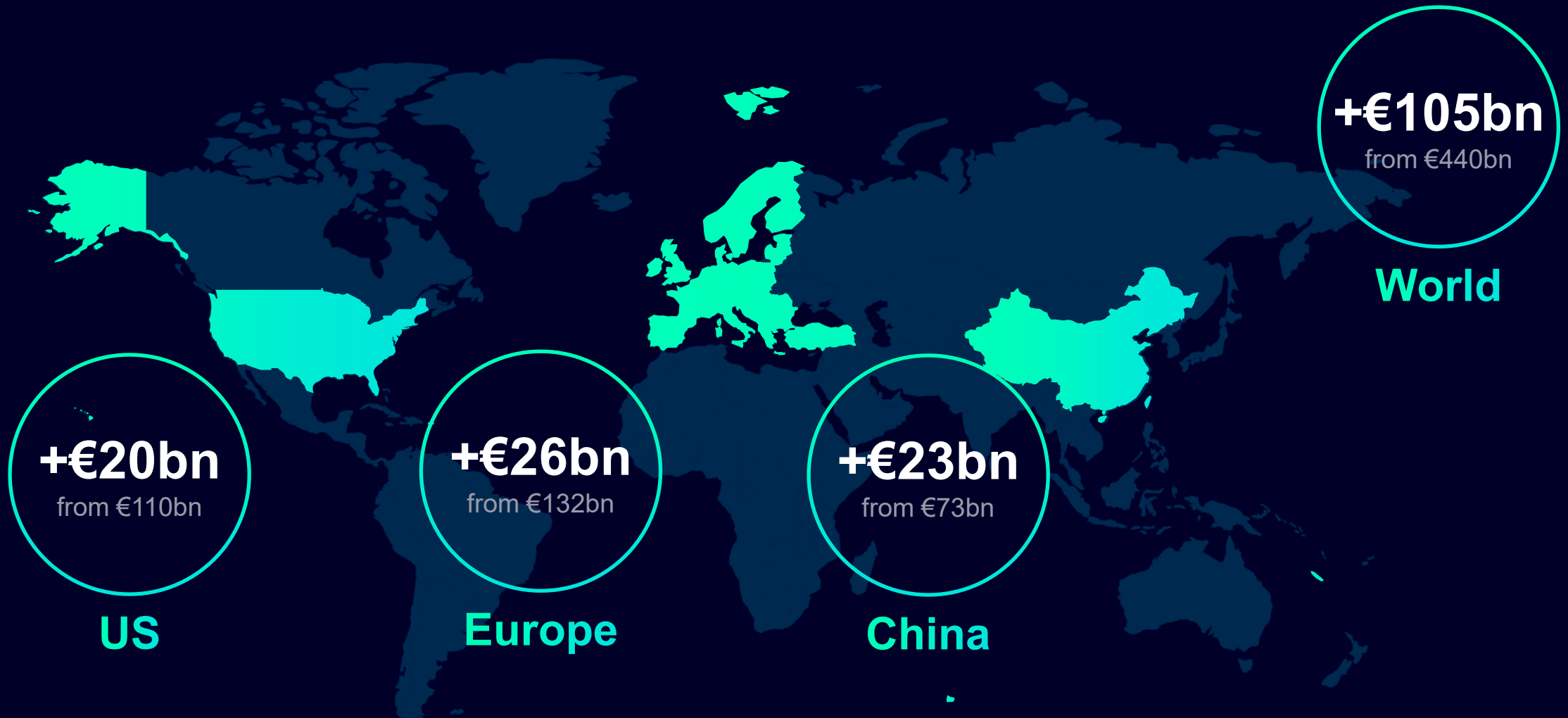
- Digital twin technology to develop a new form of plastic wrapping
- Innovative "pay-per-wrap" business model for end customers enabled via Siemens Financial Services

### Customer benefit

- Reduces plastic use by 70% and energy consumption by 90%
- Driving environmentally sustainable technology

# Addressing highly attractive growth markets with our global footprint

Market growth 2020–2025



**Note:** Market growth of addressable markets: Smart Infrastructure, Digital Industries, Mobility and Siemens Healthineers

# Siemens in US



## Major trends

- Infrastructure upgrade
- Strengthen industrial supply chains
- Digitalization
- CO<sub>2</sub> neutral by 2050

## Our footprint

- >60 manufacturing, R&D sites and digitalization hubs
- 40,000 employees

## Our position

- #1 in Vertical Software
- #1 in Mobility
- #2 in Buildings
- #1 in Imaging<sup>1</sup>

**Note:** As of FY 20

<sup>1</sup> Based on equipment orders. Imaging contains: Computed Tomography, Magnetic Resonance, Molecular Imaging, X-ray products, Digital Health, Syngo software, excl. Ultrasound



# Siemens in China

## Major trends

- Five-year plan: High tech / digitalization urban infrastructure
- CO<sub>2</sub> neutral by 2060

## Our footprint

- >60 manufacturing, R&D sites and digitalization hubs
- 30,000 employees

## Our position

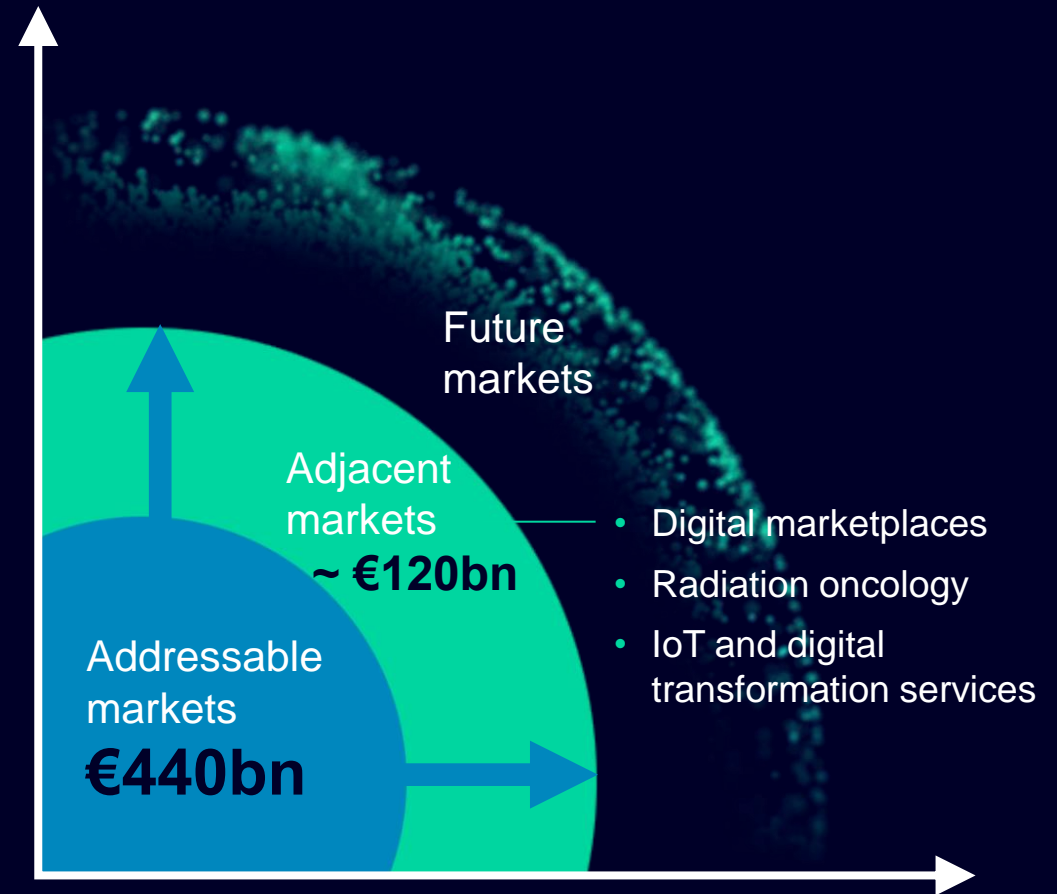
- #1 in Automation
- #1 in Vertical Software
- #1 in Imaging<sup>1</sup>



**Note:** As of FY 20

<sup>1</sup> Based on equipment orders. Imaging contains: Computed Tomography, Magnetic Resonance, Molecular Imaging, X-ray products, Digital Health, Syngo software, excl. Ultrasound

**Our addressable markets are growing with 4–5% and offer attractive adjacent markets**



**Note:** Schematic graphic; markets include Smart Infrastructure, Digital Industries, Mobility, Siemens Advanta and Siemens Healthineers

**Our core business and our digital business reinforce each other in a virtuous cycle, accelerating high value growth**

## **Core business**

We grow our core business by leveraging our digital capabilities

## **Digital business**

We grow our digital business by leveraging our core business and domain knowhow





RHEIN-RUHR-EXPRESS (RRX)

## Digital offering as a key differentiator

### Customer challenge

- Maximum availability at minimum costs: Public transportation in Germany's crowded and congested Rhine-Ruhr region is often a logistical challenge

### Solution

- Siemens helps to alleviate this issue with 82<sup>1</sup> double-decker trains and full maintenance in a fully digitalized depot over 32 years
- Featuring predictive diagnostics and a smart, digital network that links the trains to the digitalized rail service center – enabled by Railigent
- Leverage unique digital offering to unlock ~ €1.7bn order entry

### Customer benefit

- Reduced total lifecycle cost
- 99.9% current availability of the train sets



COMPANY CORE  
TECHNOLOGY

**Data  
Analytics  
& AI**





COMPANY CORE  
TECHNOLOGY

**Data  
Analytics  
& AI**

SWIRE COCA-COLA

## Growing our core business through our digital expertise

### Customer challenge

- Improve line performance and availability

### Solution

- Tracking and analysis of downtimes
- Customized manufacturing information system and mobile app for asset overview, faster fault diagnosis and predictive maintenance

### Customer benefit

- Unlock annual production capacity of 550 million cans
- Benchmark and standard for Swire Coca-Cola worldwide: to be extended to 100 production lines in next two years
- Starting point for building 18 digital plants in the future and saving 10 million kWh of electricity p.a.

**SIEMENS**



## DIGITAL TRANSFORMATION OF BUILDING OPERATIONS

# Growing our digital business through our core expertise

### Customer challenge

- Make buildings more efficient and sustainable. Reduce life cycle costs significantly

### Solution

- Leverage digital monitoring of buildings to transform break / fix services and building management services into recurring digital services with margin upside potential
- Improvement of building experience and reliability for tenants and building operators
- >3,900 deployments of Navigator at customers; further direct potential >100,000 connected buildings

### Customer benefit

- Reduction of lifecycle costs
- Energy savings





UNIVERSITY OF TAMPERE, FINLAND

## A digital approach to building maintenance

### Customer challenge

- Offering the most attractive campuses possible to the University Properties of Finland Ltd. with its more than 11,000 students

### Solution

- Developing a new data-driven maintenance model
- Asset performance services, which allows the team to collect and evaluate real time maintenance, asset and performance data

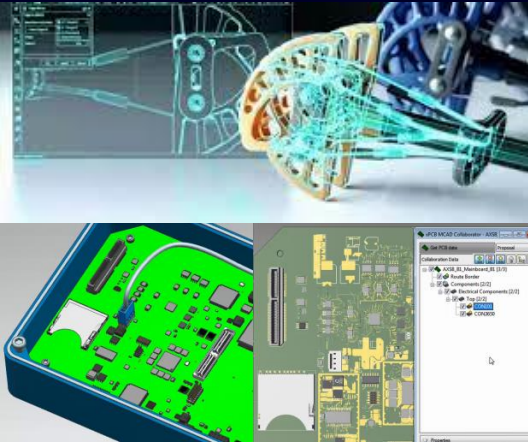
### Customer benefit

- 50% fewer user complaints
- 57% of identified issues improve energy efficiency
- 70% of visual inspections replaced by data analytics



COMPANY CORE  
TECHNOLOGY  
**Distributed  
Energy  
Systems**

# We have a leading position in vertical software



## Digital Industries

For example: PLM, EDA  
Transition of business model mainly for PLM towards cloud-enabled Software as a Service (SaaS), beginning FY 2022

## Invested >€10bn in acquisitions of software companies



## Smart Infrastructure

For example: Grid software, Navigator  
Building and grid management



## Mobility

For example: HAFAS trip planner  
Innovative software for transportation



**We are leveraging our domain know how and digital strengths to develop new business models**



**Performance as a service**  
Energy saving guarantees in buildings



**Energy as a service**  
Renewable energy solutions



**Machine hours as a service**  
Enabling customers



**Platform as a service**  
Teampay platform to deploy digital solutions



# Transition to SaaS will drive resilient, predictable growth for Siemens while keeping our Digital Industries and Siemens AG financial target commitments



Easier  
access

Additional  
monetization

Capture  
insights

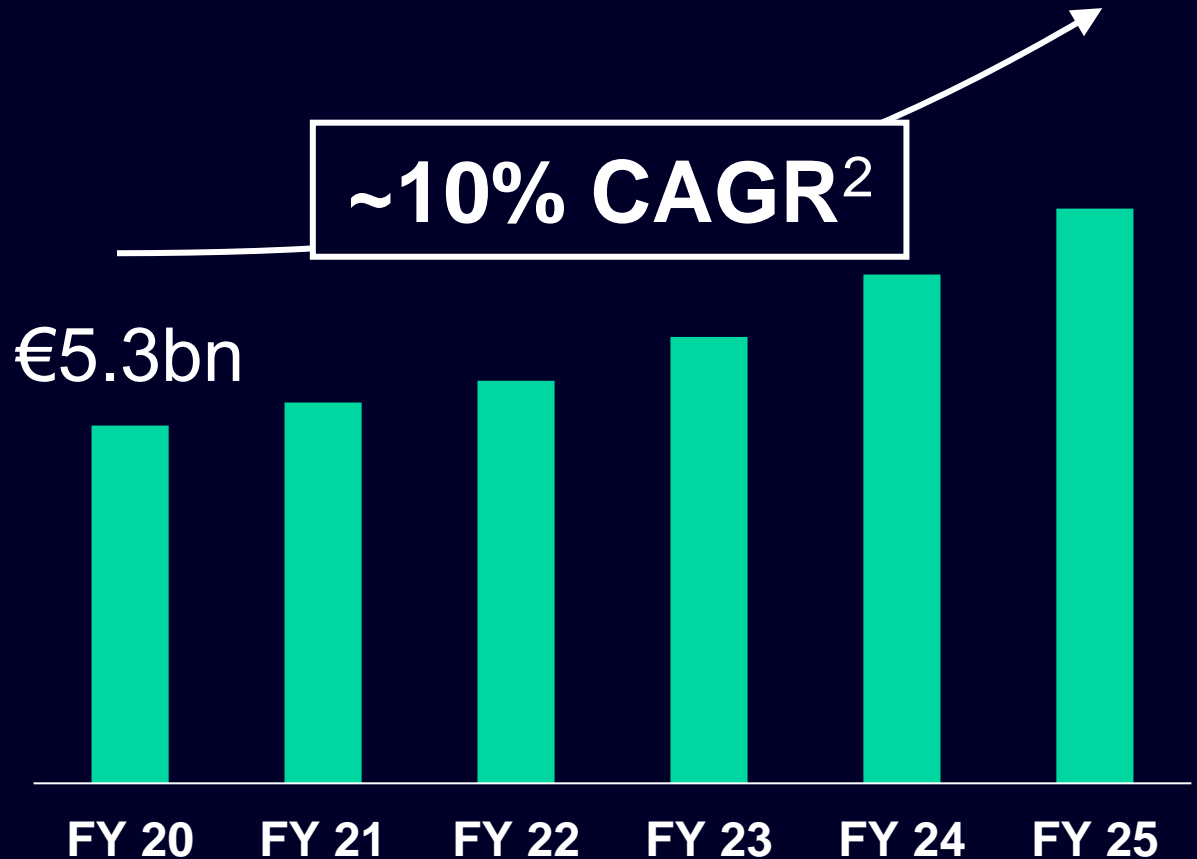
On demand  
capabilities

Higher lifetime  
value of  
subscription

# Siemens Digital Business expected to grow significantly

Growth to ramp up slowly due to SaaS transition revenue conversion and expected to accelerate after FY 23

## Revenue Digital Business<sup>1</sup>



<sup>1</sup> "Digital Business" means Siemens vertical specific software and IoT services from Smart Infrastructure, Digital Industries, Mobility, Siemens Advanta; does not yet include Supplyframe <sup>2</sup> Organically



# We are uniquely positioned to combine the real and digital worlds

#1

## in Factory Automation

45 million installed automation systems

#1

## in Vertical Software

200,000 developers on Mendix platform

#1

## in Rail Automation

14,000 railway vehicles and 3,000 interlockings

>40k

## Employees in digital jobs

therein >12,000 industrial SW engineers and >1,000 Cyber Security experts

#1

## in Grid Automation

>2.5 million protection relays and >200k substation automation systems

>1k

## AI experts

100 Petabyte collected and processed data

**Domain knowhow + Technology portfolio + Strong ecosystem**

# Company Core Technologies leveraged across all businesses

Digital Industries	Smart Infrastructure	Mobility
Cyber Security		
Data Analytics & AI		
Simulation & Digital Twin		
Connectivity & Edge		
Power Electronics		
Additive Manufacturing		
Connected (e)Mobility		
...		
14 Company Core Technologies running across Siemens <sup>1</sup> in total		



**Product PKI**  
Centrally hosted industrial PKI services to ease imprinting of manufacturer certificates during production und management of operational certificates (250,000 devices)



**Machine Intelligence Core (MI Core)**  
MI Core engine provides generic code (e.g. industrial AI algorithms, pre-trained models, knowledge graphs) with use case specific extensions (60 use cases)



**Executable Digital Twin**  
A self-contained, application specific executable model to enhance value of an asset during its life-time by using “virtual sensors”

<sup>1</sup> Siemens Healthineers: R&D Framework Agreement in place plus option to license; Siemens Energy: R&D Framework Agreement plus Cost Pool Agreement in place

# Company Core Technologies innovation examples



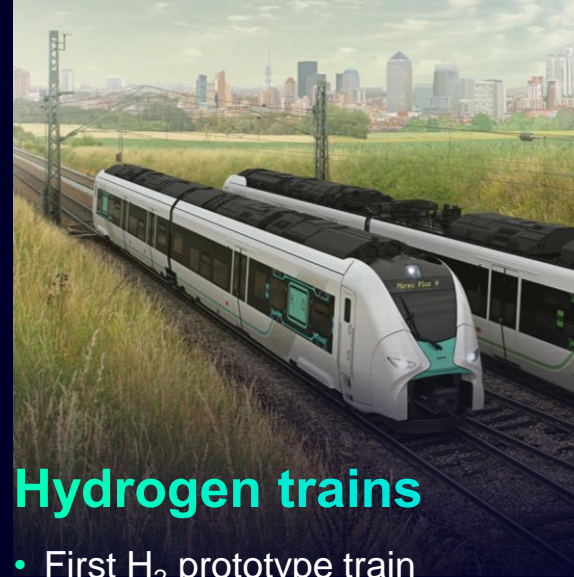
## Industrial 5G

- Siemens is driving 5G in industry
- First 5G product: Router launched
- Private 5G standalone networks in trial
- Prerequisite for IoT



## Industrial Edge

- Market-leading solutions for industrial edge
- Extending the industrial edge computing paradigm to the field level



## Hydrogen trains

- First H<sub>2</sub> prototype train Mireo Plus H
- Up to 1,000 km range and unique certification of H<sub>2</sub> tanks for 30 years operation



## Connected (e)Mobility

- Providing portfolio for AC/DC and efficient high-power charging
- Developing charging service ecosystem, e.g. station, depot, fleet management



# Siemens is best positioned for the future

## Stringent capital allocation in future growth fields<sup>1</sup>

### RESEARCH AND DEVELOPMENT

**€4.6bn** R&D expenditures

**40,700** R&D employees

### STRONG IN DIGITALIZATION

**~50%** of total R&D spending allocated to SW & IoT

### INGENUITY DRIVES INNOVATION

**5,120** Inventions

**2,740** Patent applications

<sup>1</sup> In FY 20 (without Siemens Energy)

## Next 47 powered by Siemens

- Valuable contributor to our innovation ecosystem
- Enabler of “intrapreneurialism” within Siemens (90 accelerator teams since October 2018)
- Invested in 30+ start-ups that use deep and frontier technologies



## Strong ecosystem

### APPLICATION DEVELOPERS & INTEGRATORS

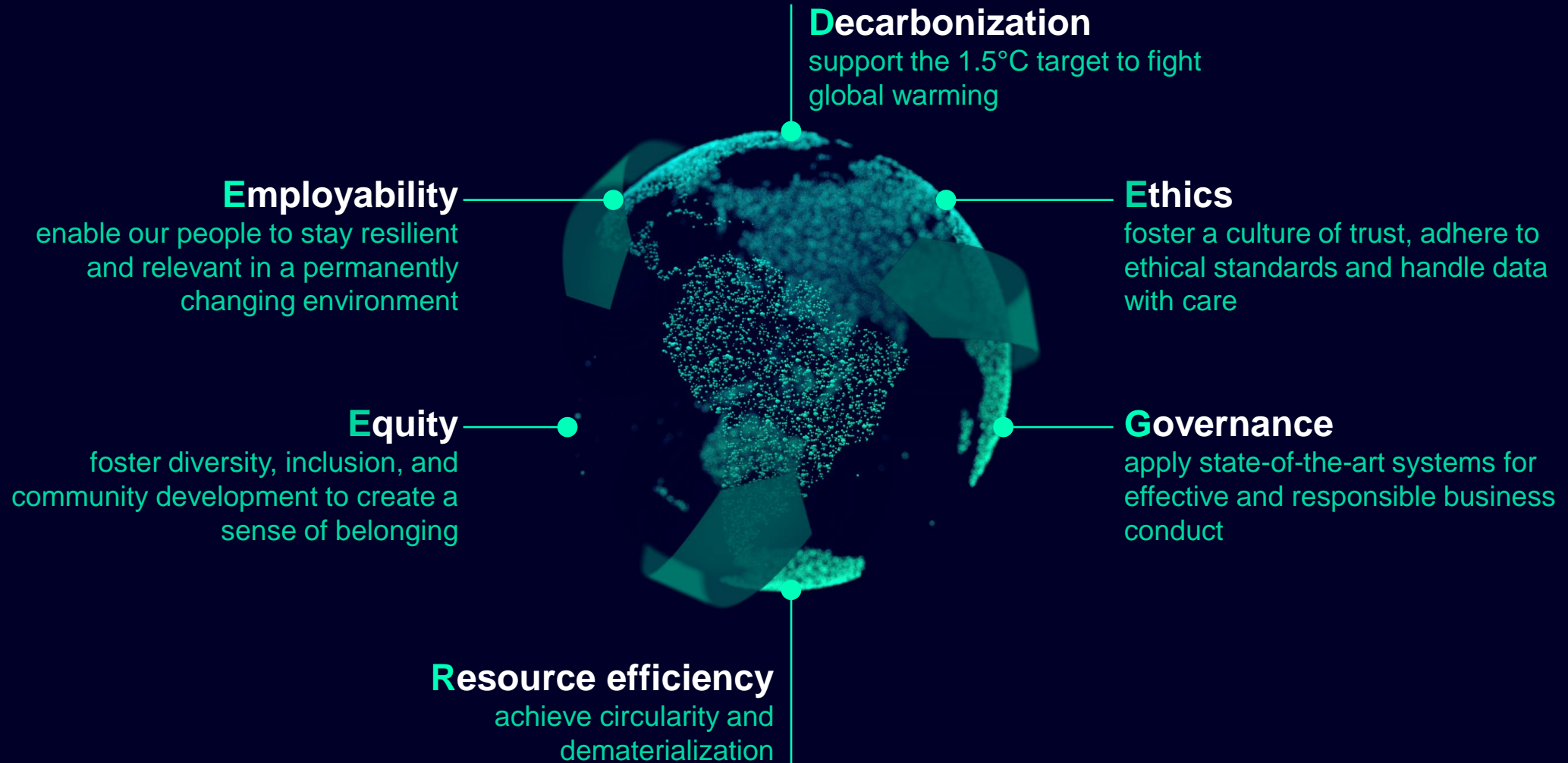
**200,000** developers on Mendix platform



### TECHNOLOGY & INFRASTRUCTURE PARTNERS



## Our DEGREE framework sets clear priorities for Sustainability at Siemens



# Accelerating value creation

## Growth & Profitability

- 5–7% comparable revenue growth
- Upgraded Smart Infrastructure and Mobility margin targets
- High single-digit EPS pre PPA growth

## Cash & Accountability

- Cash Conversion Rate (all in)
- Progressive dividend
- Long-term share buyback program

## Execution & Transparency

- More recurring revenue
- Full potential of Portfolio Companies
- Clear commitments below the line

Note: Scope Siemens AG



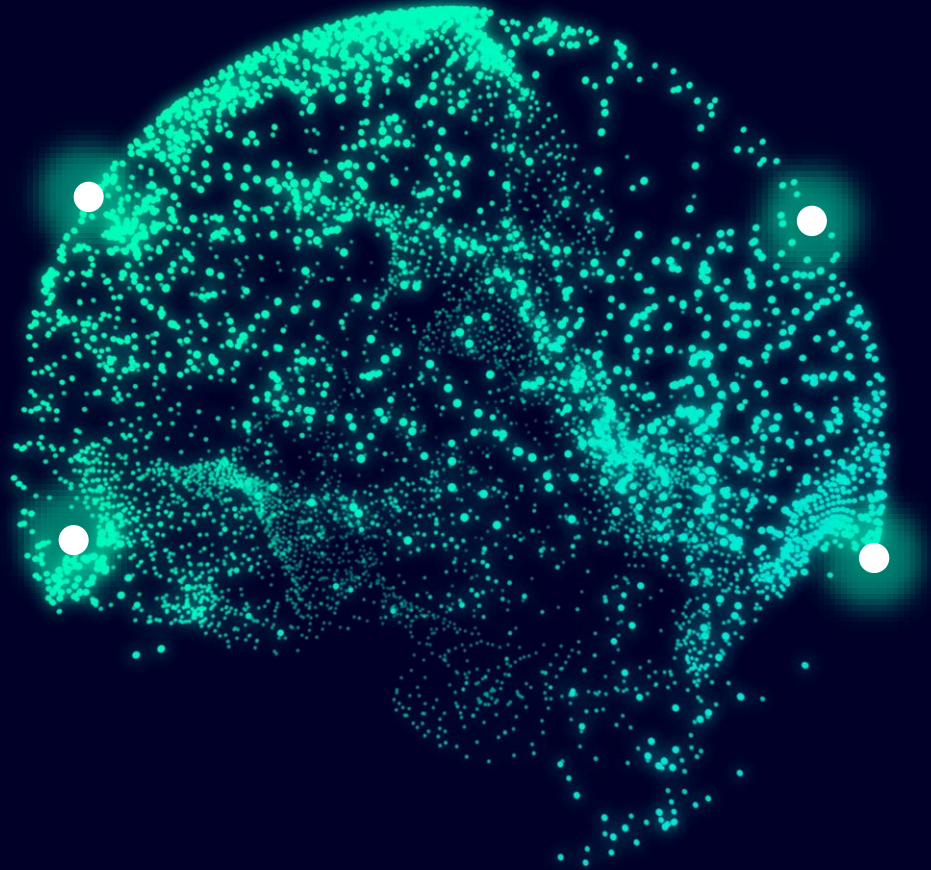
## Our four strategic priorities

### Customer impact

We anticipate what our customers need before they even know they need it

### Technology with purpose

Innovative technology has been at the core of Siemens for more than 170 years and it will remain at the core of the future we're building



### Empowered people

Driving progress through empowering our customers, partners and employees

### Growth mindset

Rather than make yesterday last, we are committed to building tomorrow – by learning and being open to change



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