# Mobility

Michael Peter, CEO Karl Blaim, CFO



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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.

# **Mobility**

Key figures FY 20



# **Mobility**Portfolio

# Rolling Stock



Short-distance, regional and long-distance rolling stock, product and system solutions for passenger and freight transport e.g. Velaro high speed, Vectron locomotive,

Mireo commuter platforms

# Rail Infrastructure



Products and solutions for rail automation, electrification and intermodal solutions e.g. interlocking systems, European train control systems

# **Customer Services**



and rail infrastructure, throughout the entire lifecycle

Services for rolling stock

e.g. maintenance services, digital services with Railigent

# Intelligent Traffic Systems<sup>1</sup>



Solutions for intelligent traffic management e.g. Advanced Traffic Management System (ATMS), tolling solutions

# **Turnkey**



Complete rail solutions integrating the entire rail portfolio and beyond e.g. turnkey projects for high-speed rail, commuter and regional rail

% of revenue (FY 20)

(45%)

34%

15%

6%



# **Market split**

## Business mix – in billion €

## **General growth trends**

Megatrends decarbonization and urbanization remain

Rail as backbone of urban mobility and leading mode for national travel

Stimulus packages offering upside potential

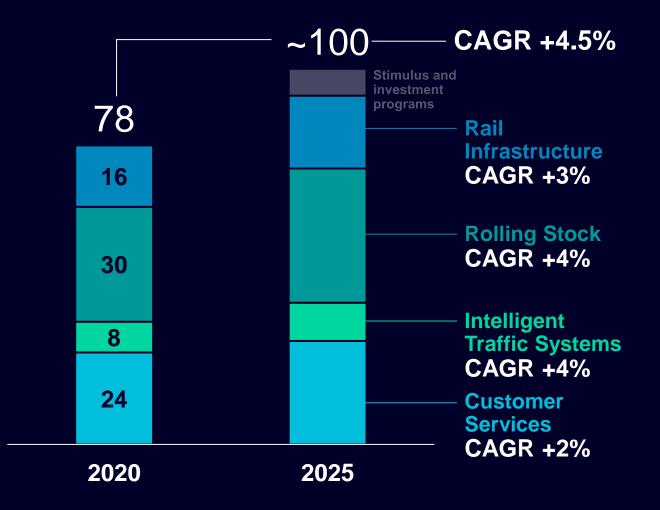
Government bail-out and recovery programs with significant portions for rail

Digitalization deeply transforming the industry

IoT, software, cloud technologies driving rail asset performance management

Market mechanisms supporting our strategy

Focus on life cycle driven concessions; nationwide programs to gain network efficiencies



Note: Siemens Mobility accessible market adjusted to own portfolio, estimate; figures 3-y-avg. market values (ø FY 18-20, ø FY 23-25)

# **Market split**

# Geographical – in billion €

# Selected regional growth trends

#### Europe, CIS<sup>1</sup>, MEA

- EU: EU Green Deal and Next Gen speed up infrastructure projects
- CIS1: Core rail corridor investments
- MEA: New metro and high-speed systems in focus

#### **Americas**

- USA: Invest Act & Build Back Better plans to push infrastructure projects
- CAN: Turnkey opportunities and Covid-19 recovery program anticipated

#### Asia, Australia

- IN: Privatization to drive infrastructure enhancement and upgrades
- CN: Continuous market growth backed by 14th 5 year plan



Note: Siemens Mobility accessible market adjusted to own portfolio, estimate; figures 3-y-avg. market values (ø FY 18-20, ø FY 23-25) 1 Commonwealth of Independent States

# Market drivers supporting our strategy of leadership through technology and digitalization – Rolling Stock









# Most innovative rolling stock supplier

#### WHY?

Best-in-class rolling stock platforms, e.g. Mireo, Vectron, Velaro

#### **ADVANTAGES**

New platforms allow up to 25% less energy consumption, 30% less maintenance, reduced one-time efforts

#### MARKET DRIVERS

Liberalization of market asks for concession bids that focus on lifecycle costs over 30 years, our platforms are best suited to address this, e.g. Rhein-Ruhr-Express (RRX)



# Market drivers supporting our strategy of leadership through technology and digitalization – Rail Infrastructure









# **#1** in the signaling market

#### WHY?

Strong home markets such as DACH; transforming infrastructure with IoT and cloud technologies

#### **ADVANTAGES**

Unlimited scalability; increased throughput on existing networks, e.g. ~30% throughput with Automatic Train Operation; ~30% reduced maintenance costs

#### MARKET DRIVERS

Our IoT/cloud architecture best suited to address the market move towards country wide programs, e.g. Norway, Austria



# Market drivers supporting our strategy of leadership through technology and digitalization – Customer Services









# World class services along the asset lifecycle

#### WHY?

Best-in-class maintenance; Railigent application suite for digital solutions and services; rail systems with Railigent inside

#### **ADVANTAGES**

100% system availability; up to 20% lifecycle cost reduction, maximize value from all rail systems

#### MARKET DRIVERS

Market transitioning to whole lifecycle cost models (CAPEX and OPEX); our services focus on maximizing value over lifecycle e.g. DTUBE, Austria L2



# Market drivers supporting our strategy of leadership through technology and digitalization – Turnkey projects









# Trusted partner for large infrastructure projects

#### WHY?

Leveraging synergies of vertically integrated portfolio

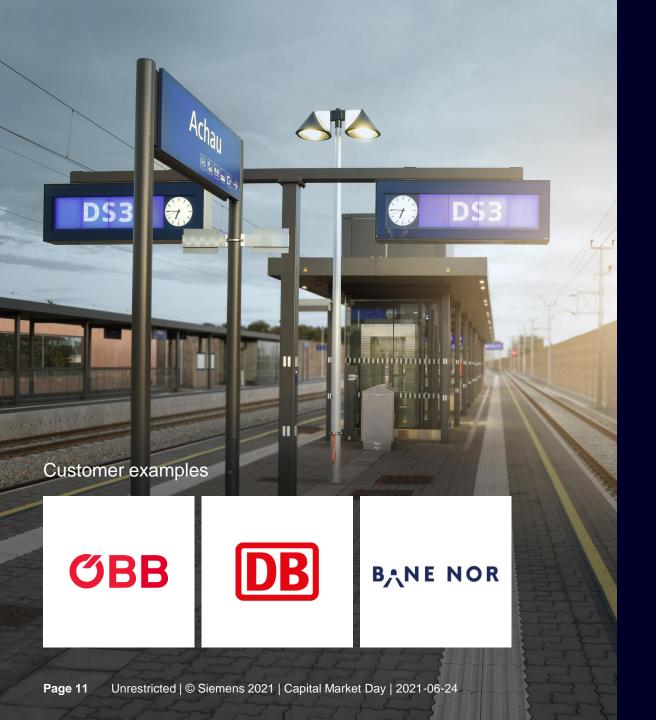
Strong track record in major projects, e.g. Bangkok, Riyadh

#### **ADVANTAGES**

Stringent execution in large projects; efficient project delivery

#### MARKET DRIVERS

Developing markets with major turnkey deals, e.g. Egypt



Transforming infrastructure with IoT and cloud technologies for reduced lifecycle costs, increased network capacity and throughput

## **Customer challenge**

- Hardware components from several decades resulting in high lifecycle costs
- Need for scalable architecture to address increased capacity and performance requirements
- Centralized data often not available due to fragmented infrastructure control centers

#### Solution

- Digitally connected rail infrastructure including virtualized and IoT-enabled components – controlled by logic (signalling) in the cloud
- Makes Rail Infrastructure connected, hardware independent and cloud enabled

#### **Customer benefit**

- Unlimited scalability
- Provision of proprietary spare parts from several decades resolved
- Centralized data and control allows for seamless network capacity increase and AI enabled data analytics

# Customer examples COMPANY CORE **TECHNOLOGY** Data ThamesLink/ **Analytics** & AI

# Digital asset management for 100% rail system availability enabled by Railigent

## **Customer challenge**

- Handle increasing passenger and freight volume by ensuring reliability and availability of rail assets to reduce downtimes for maintenance, minimize delays and unexpected failures
- Maximize value from existing assets and reduce need for **spare assets** (e.g. trains, spare parts)
- Optimize operations during high peak times

#### Solution

- Railigent application suite intelligently uses rail data to maximize value from assets over the whole lifecycle
- Up to 4bn data points per year analyzed to enable anomaly detection and predictive services
- Optimized maintenance processes in digitalized depots

#### **Customer benefit**

- Reduction of unnecessary transfer to maintenance by >30%
- Decrease in unplanned downtimes by 30-50%
- Optimized lifecycle costs by up to 20%
- Increase transport capacity by 5-10%



#### Customer examples

Dubai (Road and Transport Authority), Luxemburg (Verkéiersverbond), Netherlands (Rivier, a joint venture of public transport operators)









## **Software platform with integrated** environment for planning, booking and payment for multimodal travel

### **Customer challenge**

- Allow their end-customer to plan, book and pay in one mobile application
- Integrate different modes of transport in **one intermodal platform**
- Optimize complete planning and routing flows based on passenger demands

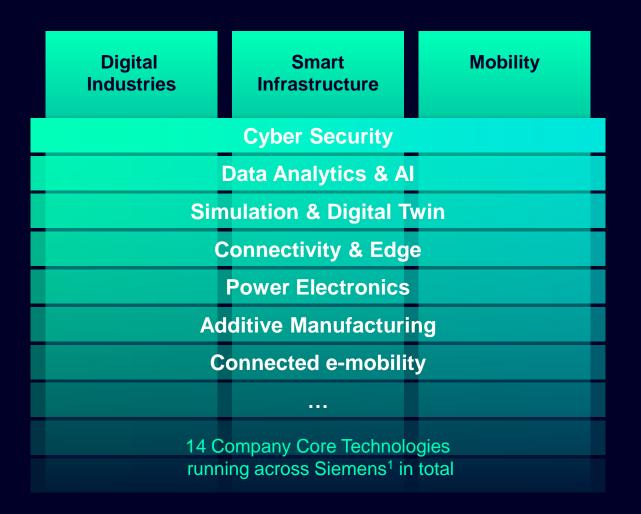
#### Solution

- Countrywide intelligent MaaS platforms including intermodal routing engine, real-time data analytics and disruption management
- Seamless ticketing and payment solutions
- Platform to offer full spectrum of mobility options including **Demand Responsive Transport (DRT)**

#### **Customer benefit**

- Offer tailored services and DRT to the needs of travelers
- Optimize fleet management; increased system capacity and punctuality
- Enable connection to a whole ecosystem of mobility providers

# Siemens with strong technology core and cross-business collaboration for accelerated customer value



# **Company Core Technologies**

- Secure one-way data connector (DCU) to optimize control, safety and security systems in rail infrastructure
- Development of battery systems for train applications
- Sensor fusion and environment modeling to enhance train driver assistance with obstacle detection as basis for autonomous railway ("Train Brain")
- Multi core technology for infrastructure in the cloud

# Cross-business technology collaboration

- MO leverages DI software for engineering and manufacturing e.g., QMS, MES, COMOS
- Collaboration with SI on rail electrification, to enable maximum uptime for rail operation e.g. Regensdorf

<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

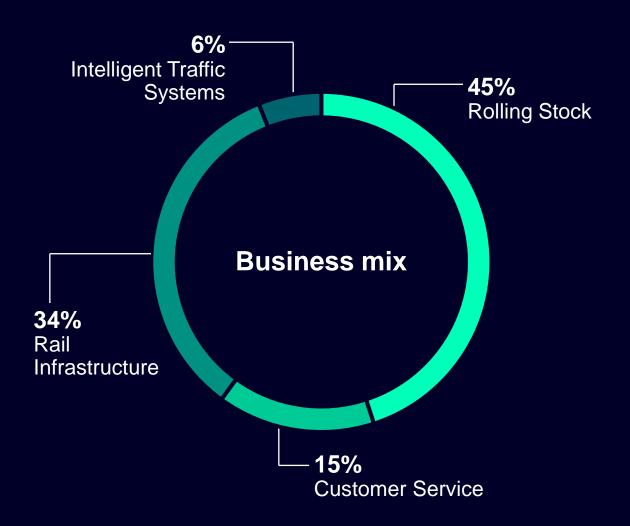
# CFO's agenda

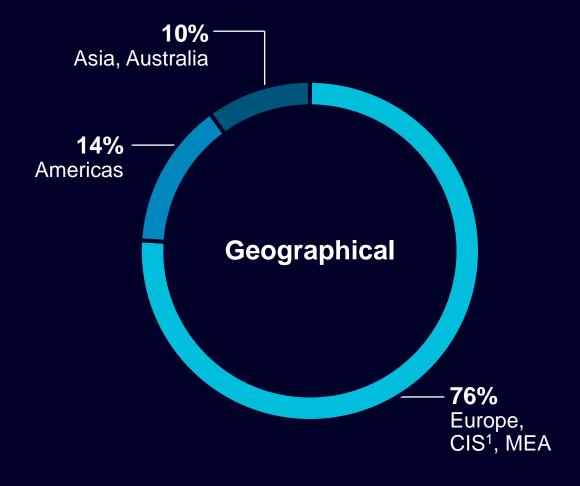
Driving resilient value generation through best-in-class risk management and commercial prudence – a proven track-record throughout 29 quarters

- Sustainable margin expansion
- Sufficient headroom allowing for innovation & digitalization
- Best in class risk & opportunity management
- Attractive ROCE profile through stringent asset- and cash management
- Unrivaled best commercial project management in industry

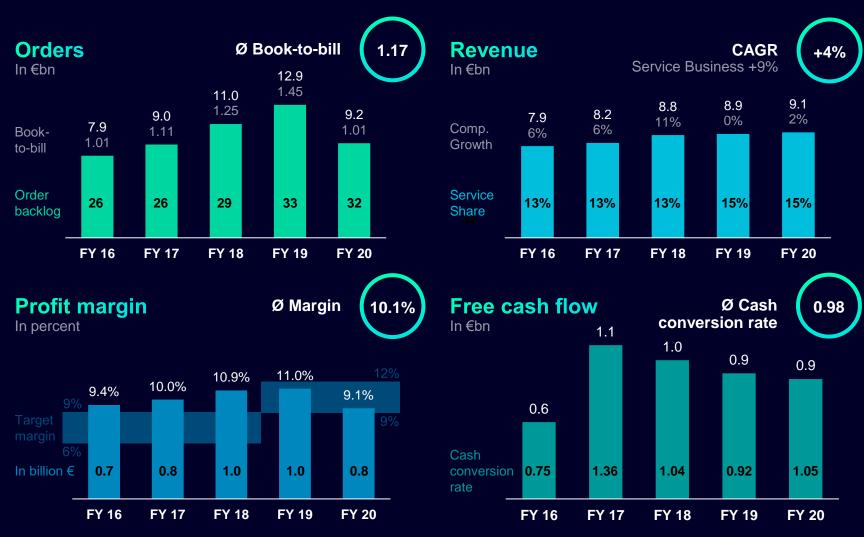
# Revenue split

FY 20 – in percent - €9.1bn





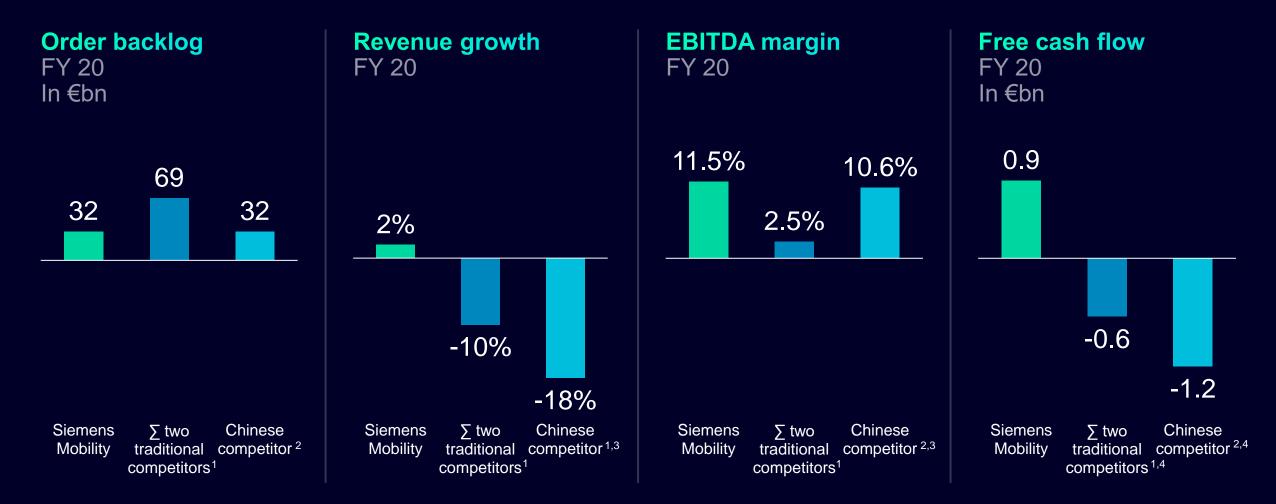
# Consistent and strong performance in top and bottom-line



- Strong and sustainable growth: backlog of €32bn with >30% service share
- Best-in-class risk & opportunity management supporting stringent execution
- Resilient revenue growth supported by 15% service share
- Continued innovation leadership secured by significant investments in R&D
- Proven track-record throughout 29 quarters with industry leading profitability
- Stringent contract and asset management drives solid cash conversion
- Attractive ROCE
  accretive to Siemens due to
  low asset intensity

Note: Ø values represent cumulative means FY 16 – FY 20

# Delivering resilient and industry leading returns despite Covid-19 crisis



<sup>1</sup> Siemens Fiscal Year logic applied 2 Competitor Fiscal Year logic applied

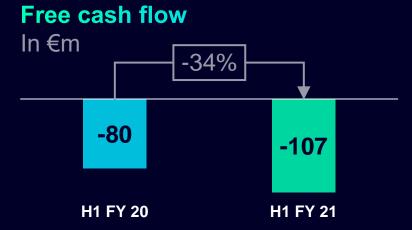
<sup>3</sup> Chinese Competitor revenue growth based on comparable portfolio (rail segments), Backlog / EBITDA / Free Cash Flow based on company in total

<sup>4</sup> Based on quarterly Disclosure & Unaudited Condensed Interim Consolidated Financial Statements

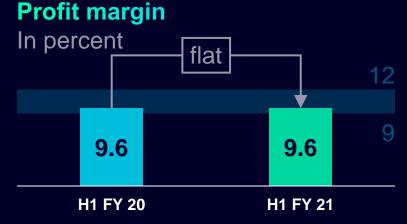
# Solid H1 performance despite ongoing pandemic crisis

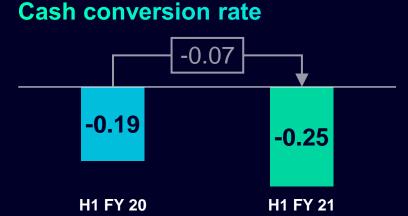












1 Comparable

# Portfolio shift to higher margin & recurring revenue business will drive mid-term target achievement





## Competitive Growth Program to secure mid-term target achievement

#### Growth & Scale e.g.

- Leverage market potential out of stimulus programs
- Increase service volume (>8% backlog growth³)
- Double-digit growth of component business
- Leadership in H<sub>2</sub> and battery technology

#### **Business Mix & Innovation** e.g.

- Lead infrastructure in the cloud transition
- Digital inside Rolling Stock (100% Railigent inside<sup>4</sup>)
- Drive platform approach in Rolling Stock
- Selected accretive portfolio moves

#### Operational Excellence e.g.

- Add 2k engineers in Lead Cost Countries until FY 25
- Roughly double size of Serbia operations until FY 25
- Internal process digitalization
- ... in addition to 3% base productivity

<sup>1</sup> Based on segmentation into 15 portfolio units 2 Comparable, adjusted for currency and portfolio

# Our portfolio is the answer to reach global ESG targets

#### Our core business is ESG ...



- Rail is the most environmentally friendly mode of passenger and freight transport
- Trains provide high capacity and lowest space used per person transported
- Train travel can make an important contribution to reach EU CO<sub>2</sub> emission targets of -90% by 2050<sup>1</sup>

# ... and we will further invest in sustainable technologies



Mireo modular platform allows various propulsion systems

#### Mireo Plus B

- **Benchmark** in battery propulsion (range up to 120km)
- First project: **SFBW Ortenau**, 2020

#### Mireo Plus H

- 2<sup>nd</sup> generation H<sub>2</sub> prototype will be in operation in 2022
- Integrated infrastructure offering with Siemens Energy:
   Rail solutions combined with green hydrogen

<sup>1</sup> Annual Transport and Environment Report 2020 (TERM), European Environment Agency, 2021

# **Mobility Financial commitments**

Targets over 3–5 year cycle



## Thanks to the team!

Mobility
#PassionForMobility



# Mobility Moving beyond.