



 FEBRUARY 27, 2020

# **Breakout sessions presentations**

ABB Robotics & Discrete Automation Investor Day



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# Important notices

This presentation includes forward-looking information and statements including statements concerning the outlook for our businesses. These statements are based on current expectations, estimates and projections about the factors that may affect our future performance, including global economic conditions, and the economic conditions of the regions and industries that are major markets for ABB Ltd. These expectations, estimates and projections are generally identifiable by statements containing words such as “expects,” “believes,” “estimates,” “targets,” “plans,” “outlook”, “on track”, “framework” or similar expressions.

There are numerous risks and uncertainties, many of which are beyond our control, that could cause our actual results to differ materially from the forward-looking information and statements made in this presentation and which could affect our ability to achieve any or all of our stated targets. The important factors that could cause such differences include, among others:

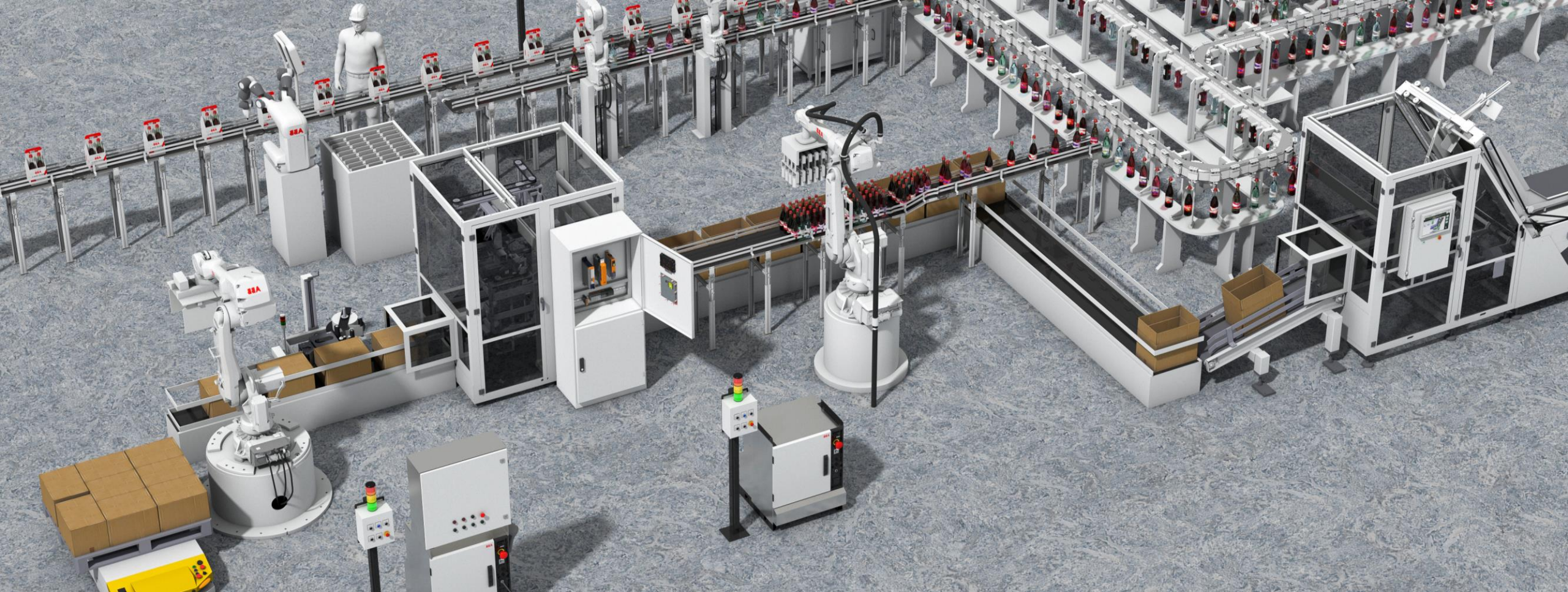
- business risks associated with the volatile global economic environment and political conditions
- costs associated with compliance activities
- market acceptance of new products and services
- changes in governmental regulations and currency exchange rates, and
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This presentation contains non-GAAP measures of performance. Definitions of these measures and reconciliations between these measures and their US GAAP counterparts can be found in the ‘Supplemental reconciliations and definitions’ section of “Financial Information” under “Quarterly results and annual reports” on our website at [www.abb.com/investorrelations](http://www.abb.com/investorrelations)





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# ABB Robotics & Discrete Automation Investor Day


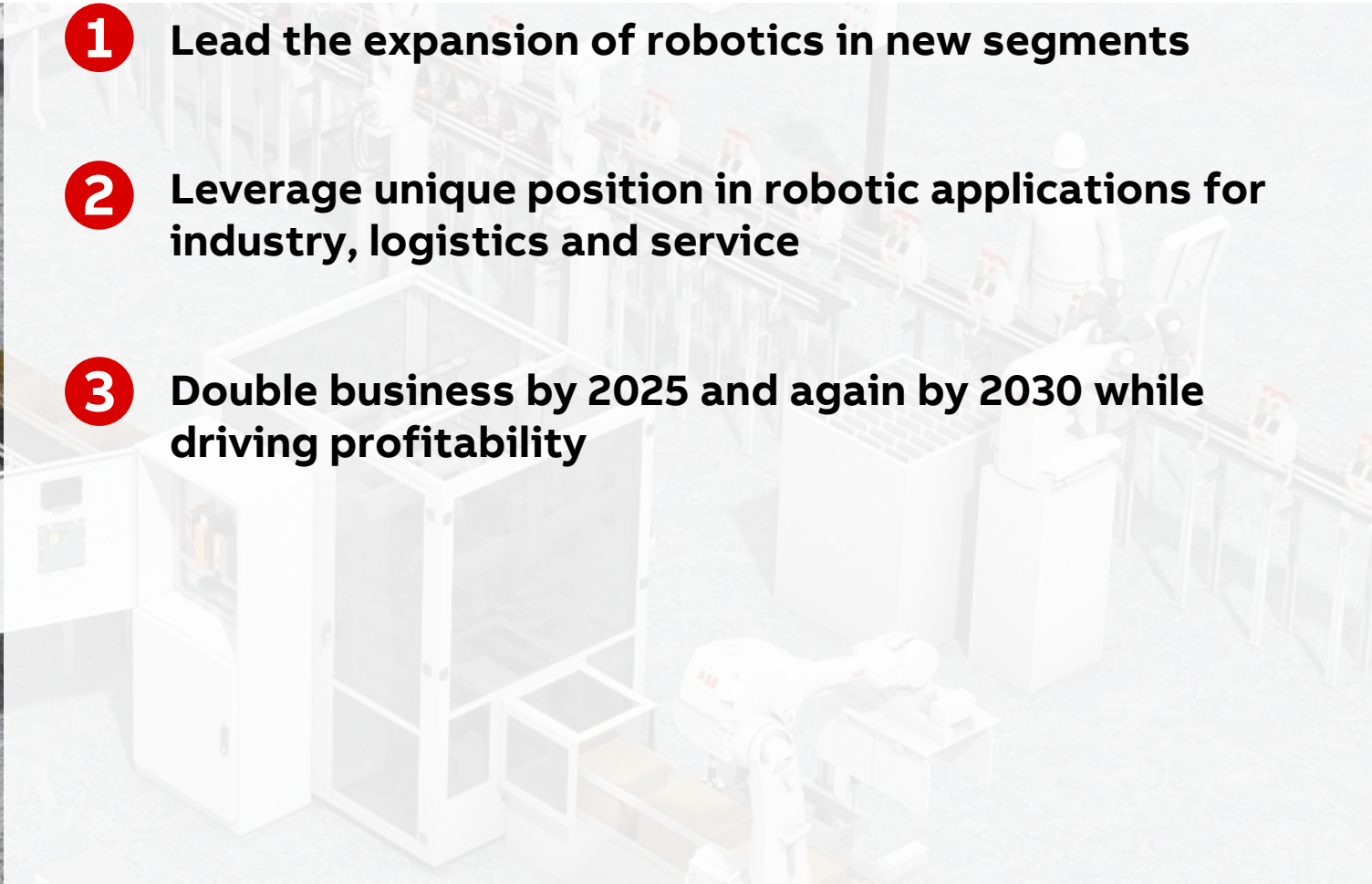
Leveraging existing expertise in new segments

Marc Segura, Managing Director Consumer Segments & Service Robotics



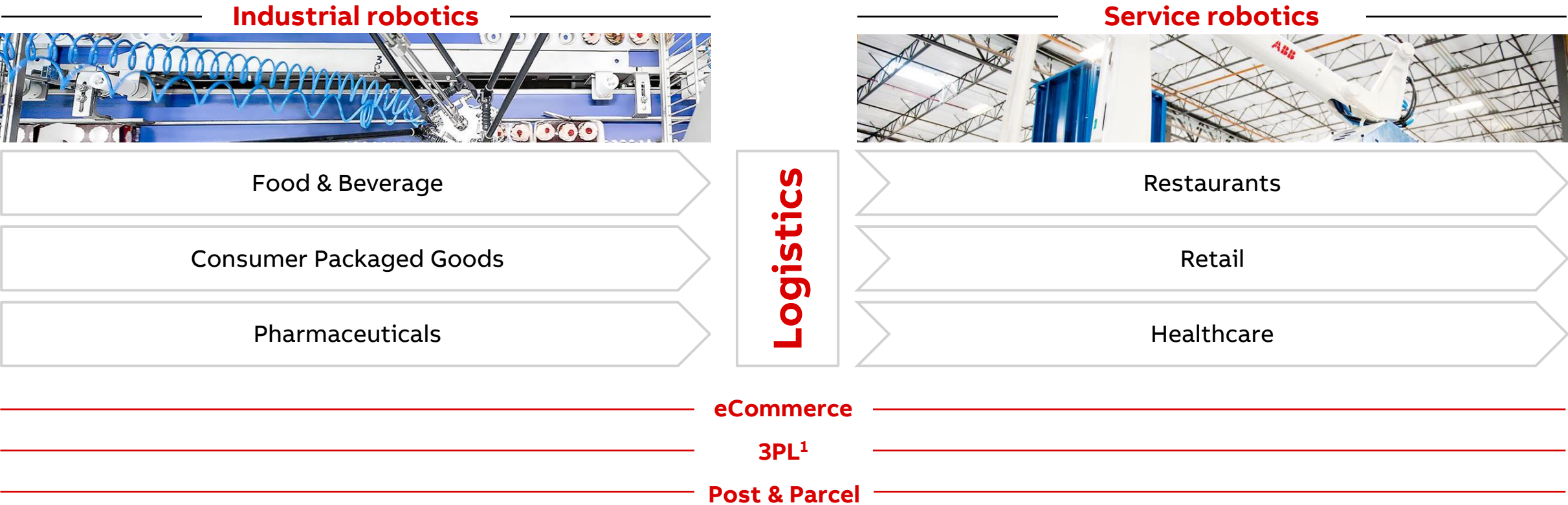
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# Our focus

- 
- 
- 1 Lead the expansion of robotics in new segments**
  - 2 Leverage unique position in robotic applications for industry, logistics and service**
  - 3 Double business by 2025 and again by 2030 while driving profitability**



# Consumer Segments & Service Robotics: a new business for a new society



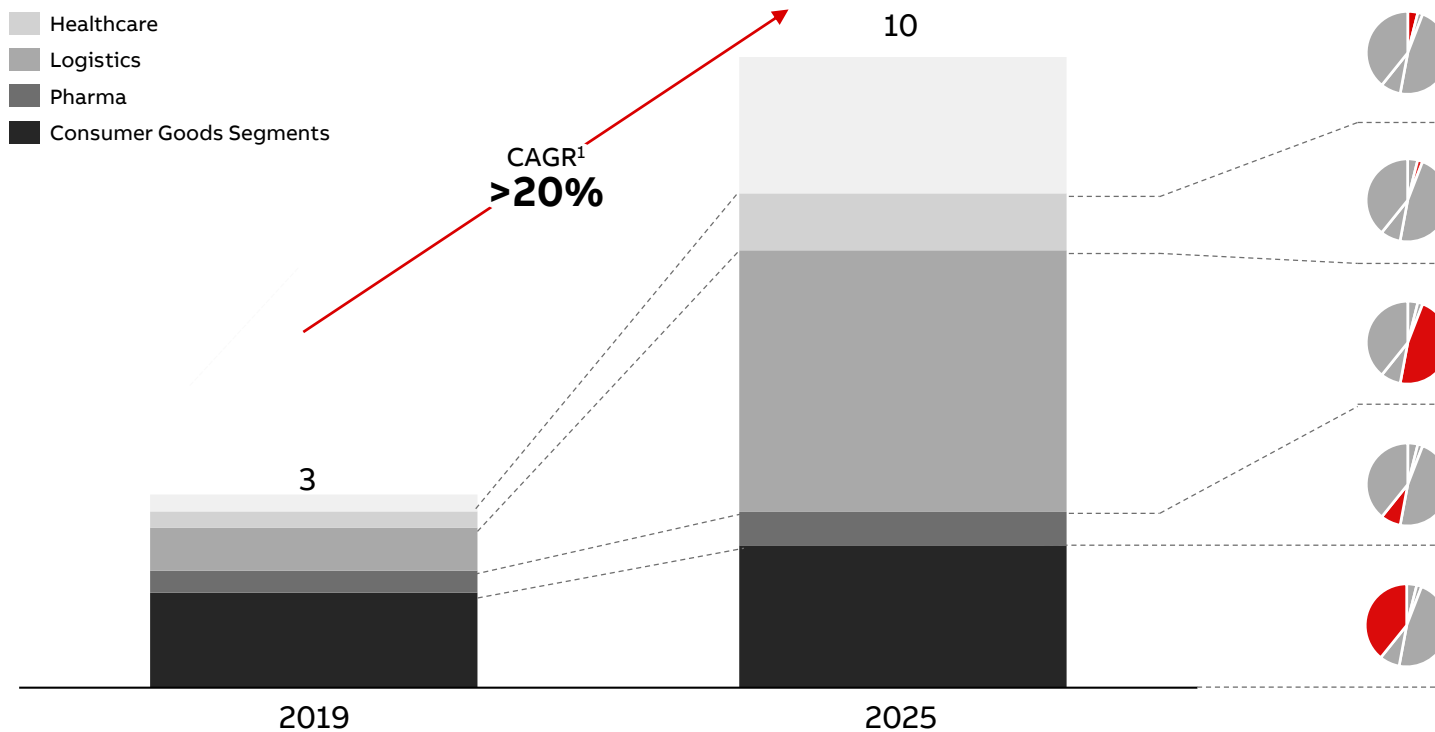
# Market expected to triple

Well positioned to capture growth

## Global addressable market

in \$ bn

- Retail & Restaurants
- Healthcare
- Logistics
- Pharma
- Consumer Goods Segments



## Business exposure

% of revenues



## Market growth drivers

Hyper-customization

Urbanization

Labor shortage

Drive for sustainability

Growth of e-commerce and traditional retail response

Acceleration in new robotic technology

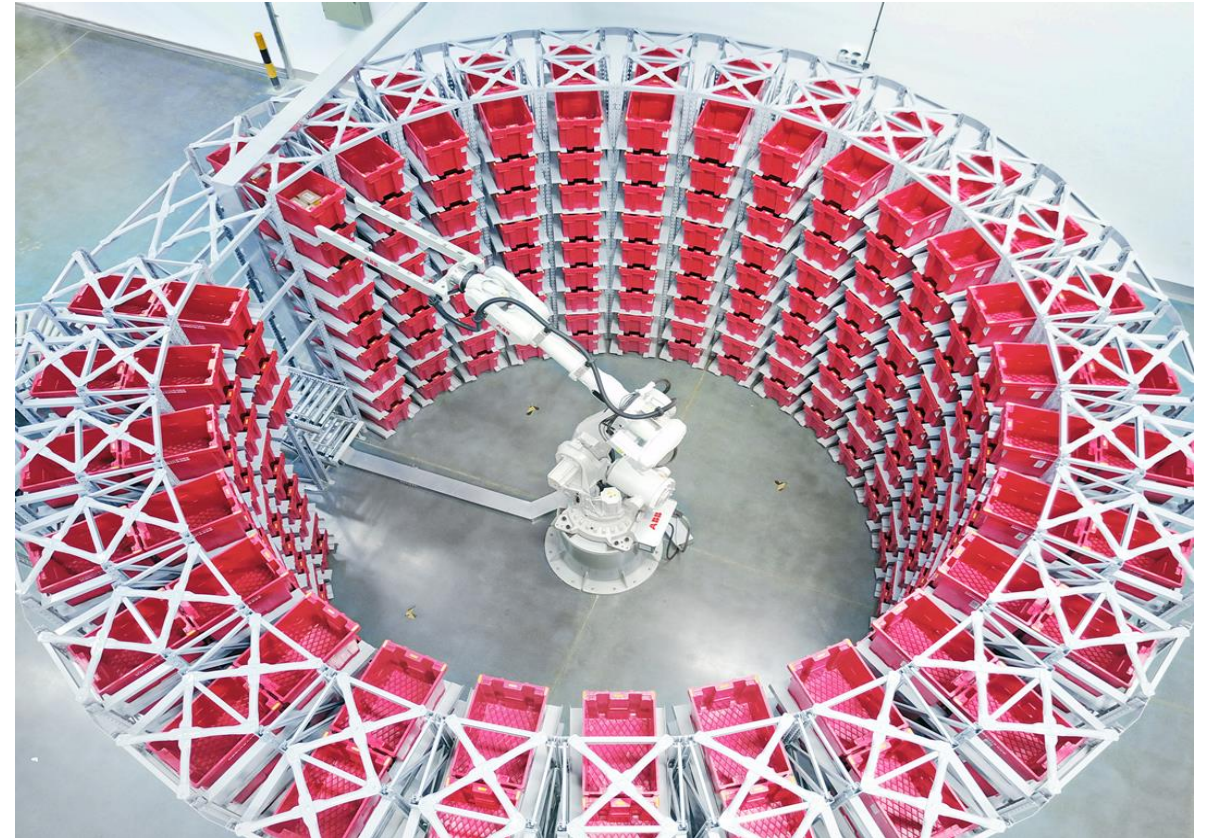






## How we win

- ▶ **Portfolio: modular, scalable solutions**
- ▶ **Global reach: right places to support growth**
- ▶ **Dual go-to-market**
- ▶ **Ground-breaking technology development**





# A modular, scalable portfolio

Building blocks to scale faster, safer and more profitably

## Modular, scalable robotic solutions

Flexible design: footprint, performance etc.

Shorter deployment

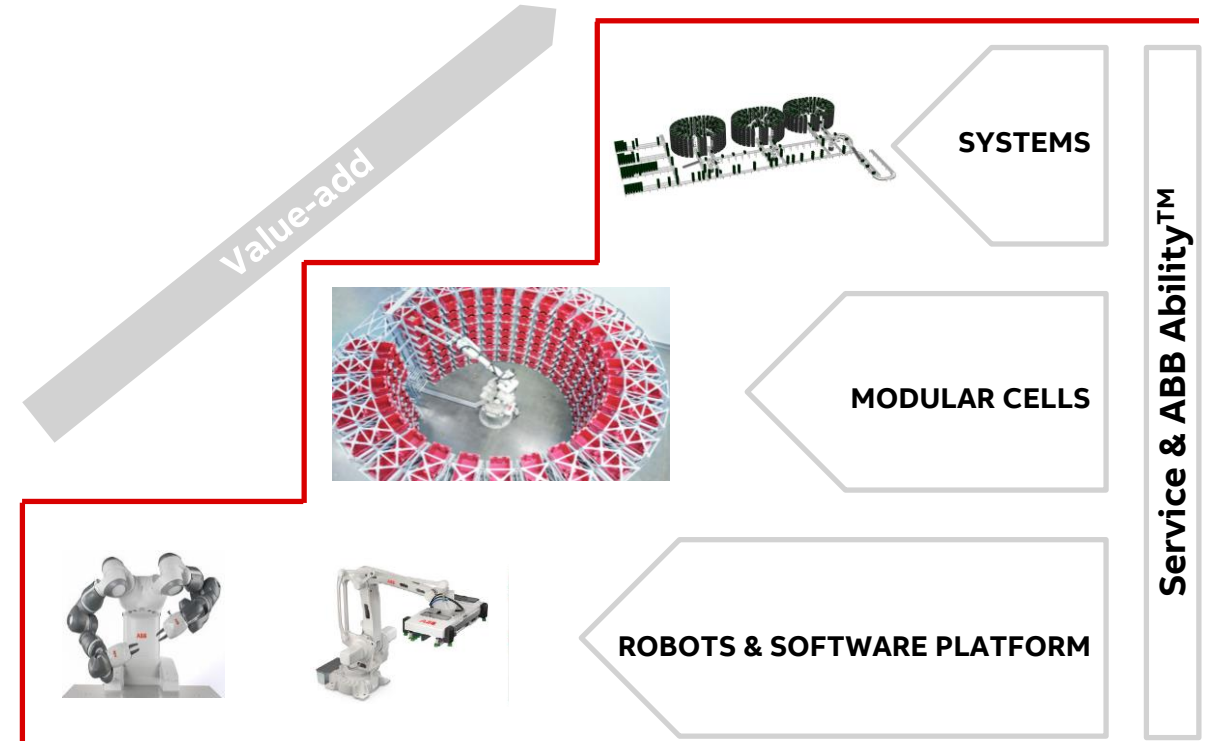
Scalable

Possible re-deployment

Born-digital

**Created through deep application and domain expertise**

## Value steps to fit channels



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## Modular, scalable portfolio examples

Grocery retailer and fresh food company, all in the same challenging market

**eGrocer delivering out of downtown micro-fulfilment site**



**Longer shelf-life thanks to shortened logistics**





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# intrion: a successful acquisition to grow logistics

Cornerstone to establish ABB in logistics automation

## Successful integration

Acquired in June 2018

### Objectives

- Hub for global standardization of modular solutions
- Grow capacity for engineering, systems execution in Europe
- Instrumental for our organic expansion in China
- Installed base for profitable system service

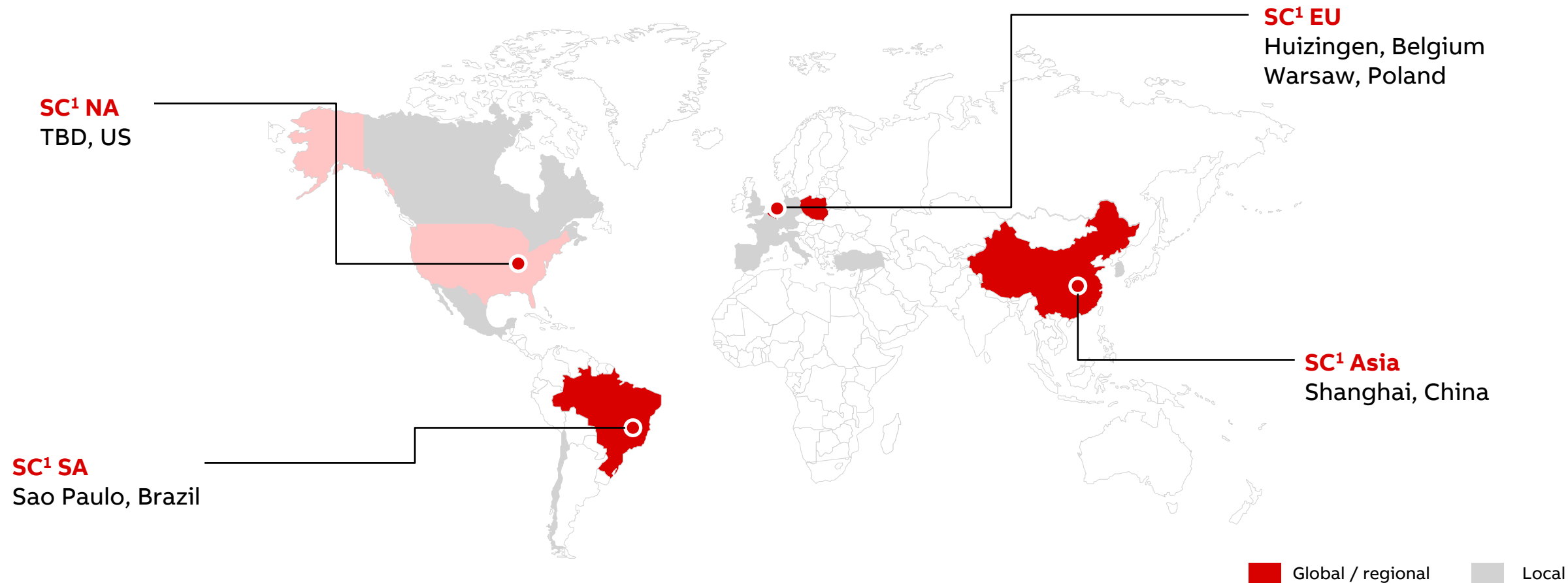
Order growth of ~50% since acquisition, while increasing profitability

## 200 new, experienced colleagues in Brussels



# Global reach: local support with global leverage

450+ colleagues in 4 Solution Centers and 15 local operations







## Focus

- Expertise
- Selected applications
- Define technology roadmaps
- Develop function packages



## Infrastructure

- Customer center with demo cells
- R&D labs and manufacturing
- Testing new customer applications
- Training our people and our customers



## Leadership

- Dedicated team
- Regional & global perspective with cross border sales
- Collaborative culture



# Dual go-to-market

Accelerated growth and sustainably maximized coverage



**End customers**  
Examples of Global Accounts



## Direct sales

Robots in frame agreements  
Modular cells and systems

**DRIVEN FROM SOLUTION CENTERS**



## Indirect sales<sup>1</sup>

Robots

**Robots – Modular cells – Systems – Service and ABB Ability™**



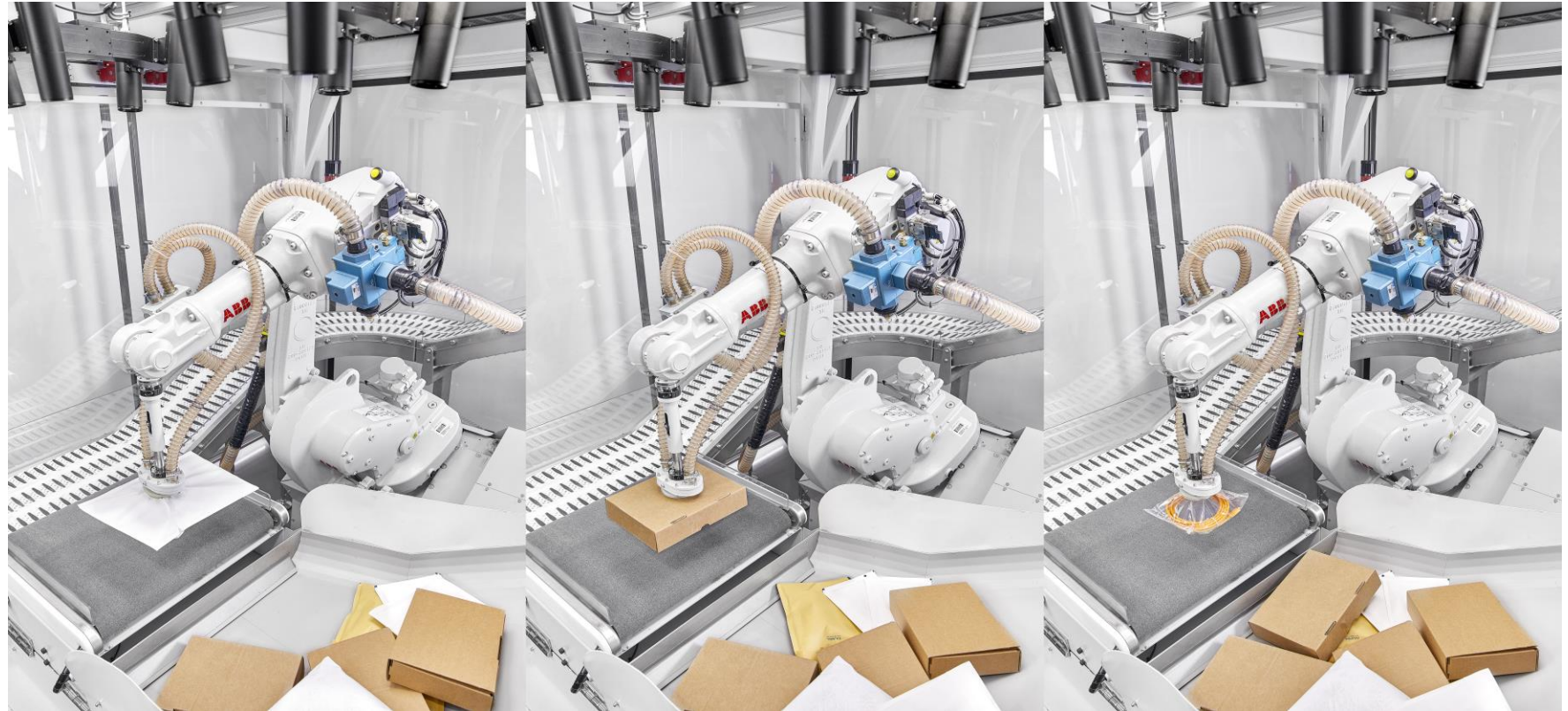
# Ground-breaking technology development

Example – healthcare



## Partnership with Berkeley's best AI start-up

covariant

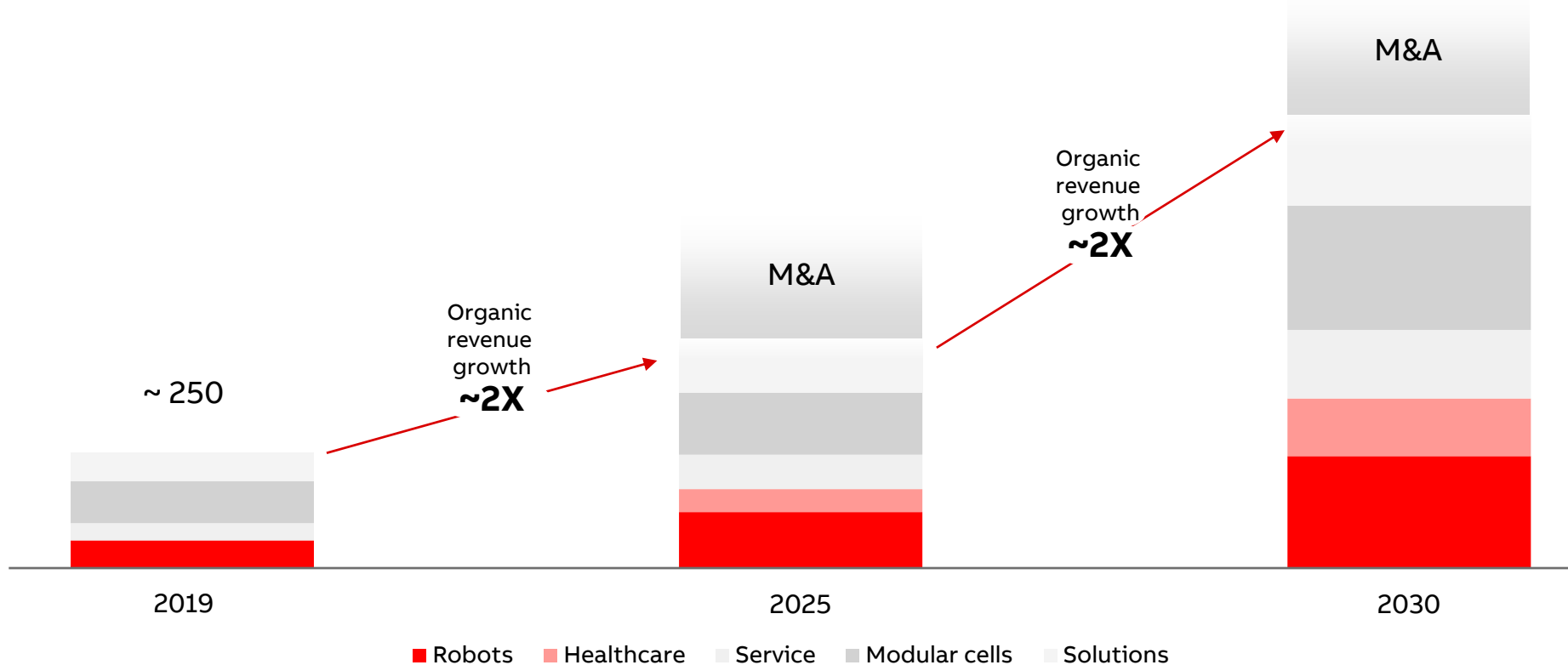




# Path for profitable growth

Targeting ~\$1 bn revenue<sup>1</sup> by 2030

Revenue (\$ mn)<sup>1</sup>



## Highlights

Expand portfolio of products and modular cells

Continue to grow in logistics, incl. regional expansion

Realize opportunities from healthcare investments

Selected acquisitions to augment offering and reach

# Driving profitability

Competitive set-up for engineering and manufacturing

## Cost measures

Mix & value pricing

Quality & execution

Volume

### Modular approach

- Scalability and repeatability
- Local assembly for specific customer context
- Limited local engineering and assembly needs

### Most of engineering in 5 Global Solution Centers

- Design of standardized modules
- Scale in design and global sourcing
- High quality





# Driving profitability

New business models leveraging on software/AI robotics solutions

Cost measures

**Mix & value pricing**

Quality & execution

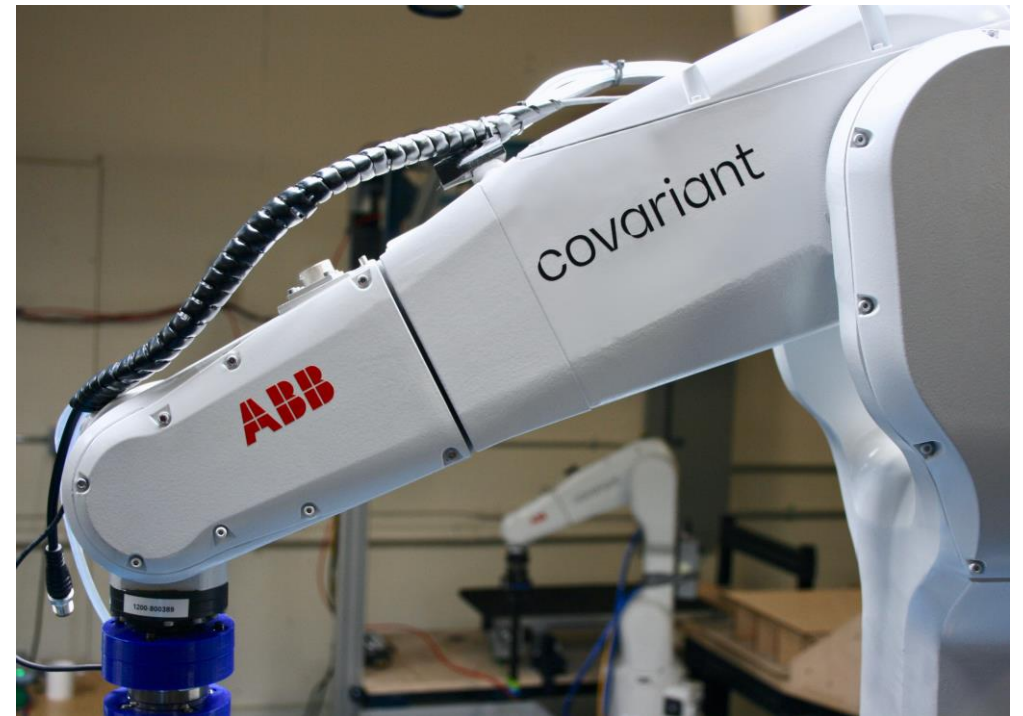
**Volume**

New business models like RaaS (Robot-as-a-Service)

- E.g. for new software/AI based robotics solutions

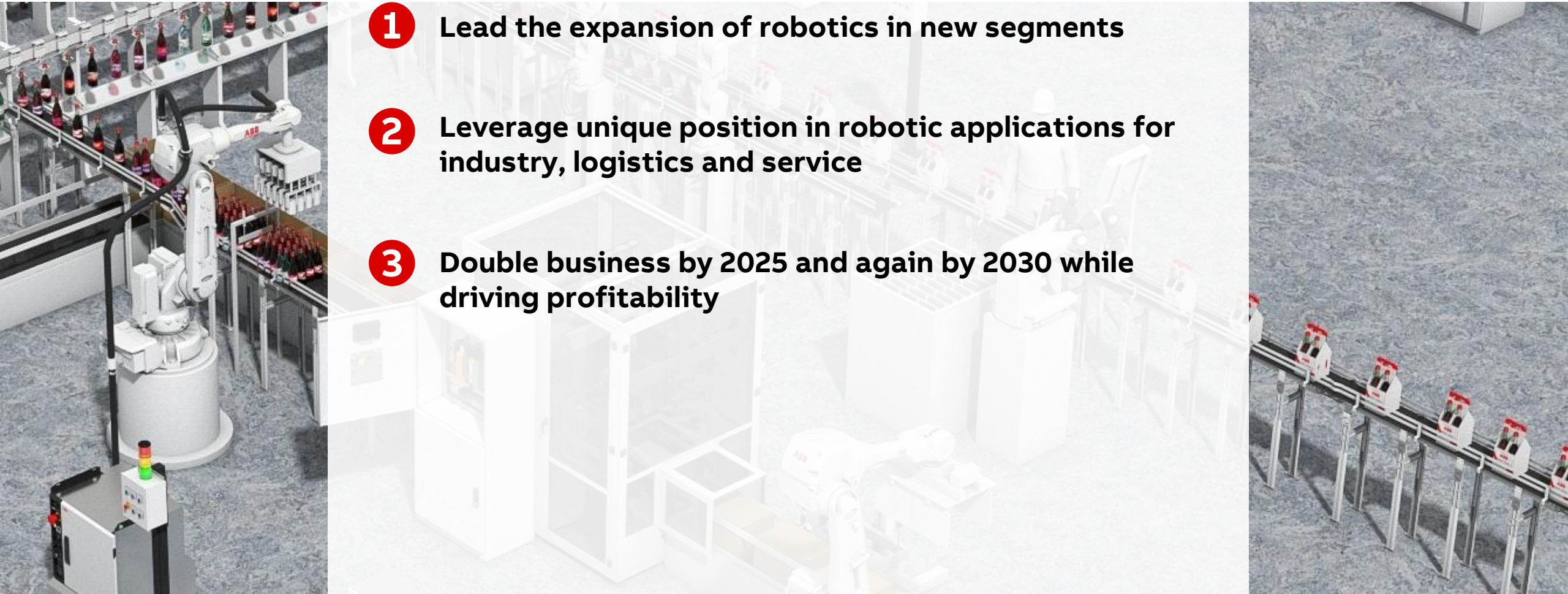
Benefits

- Recurring revenues
- Higher gross margins

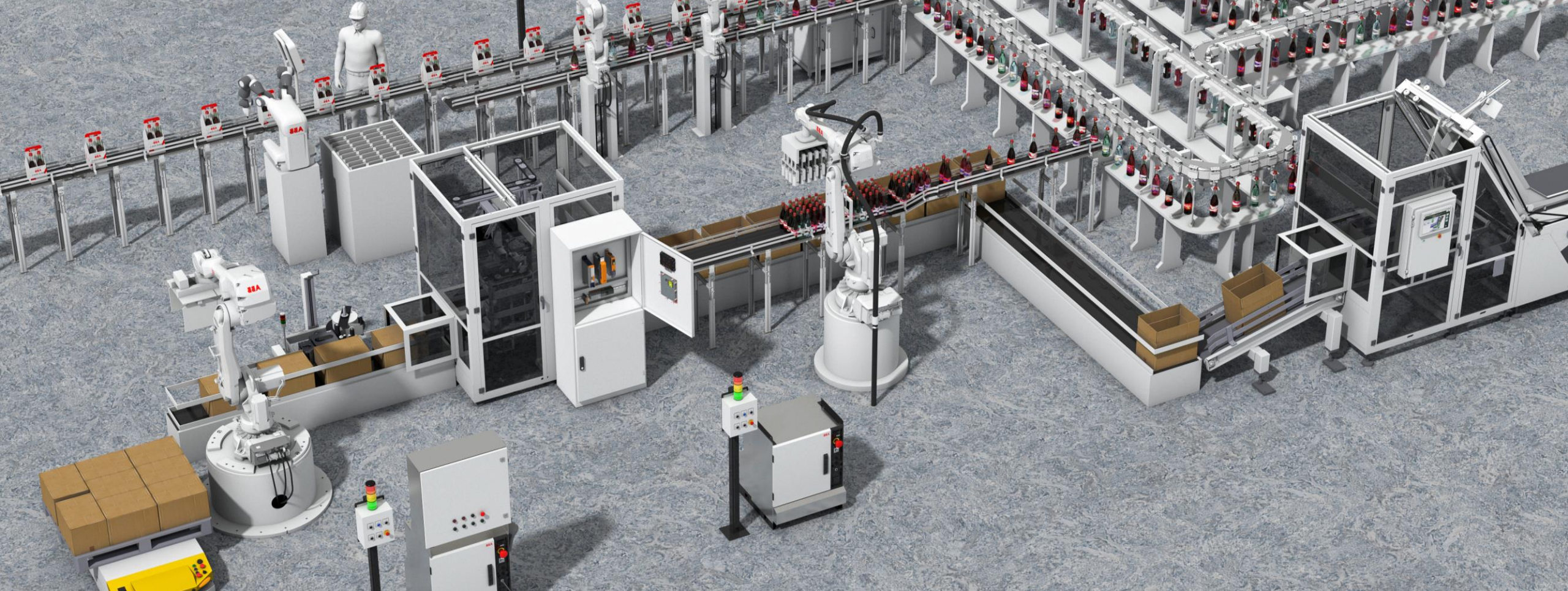


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FEBRUARY 27, 2020

# ABB Robotics & Discrete Automation Investor Day

Accelerating in existing segments

Michael Larsson, Managing Director Automotive OEM



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# Our focus

- 
- 1** **Balanced offering: products, cells, systems and service**
  - 2** **Growth through innovation and domain expertise**
  - 3** **Driving profitability through operational excellence**

# We improve automotive manufacturing from robots to systems

Leading with innovation and expertise

## A compelling automotive offer



**EV – Powertrain**



**Body-in-White**

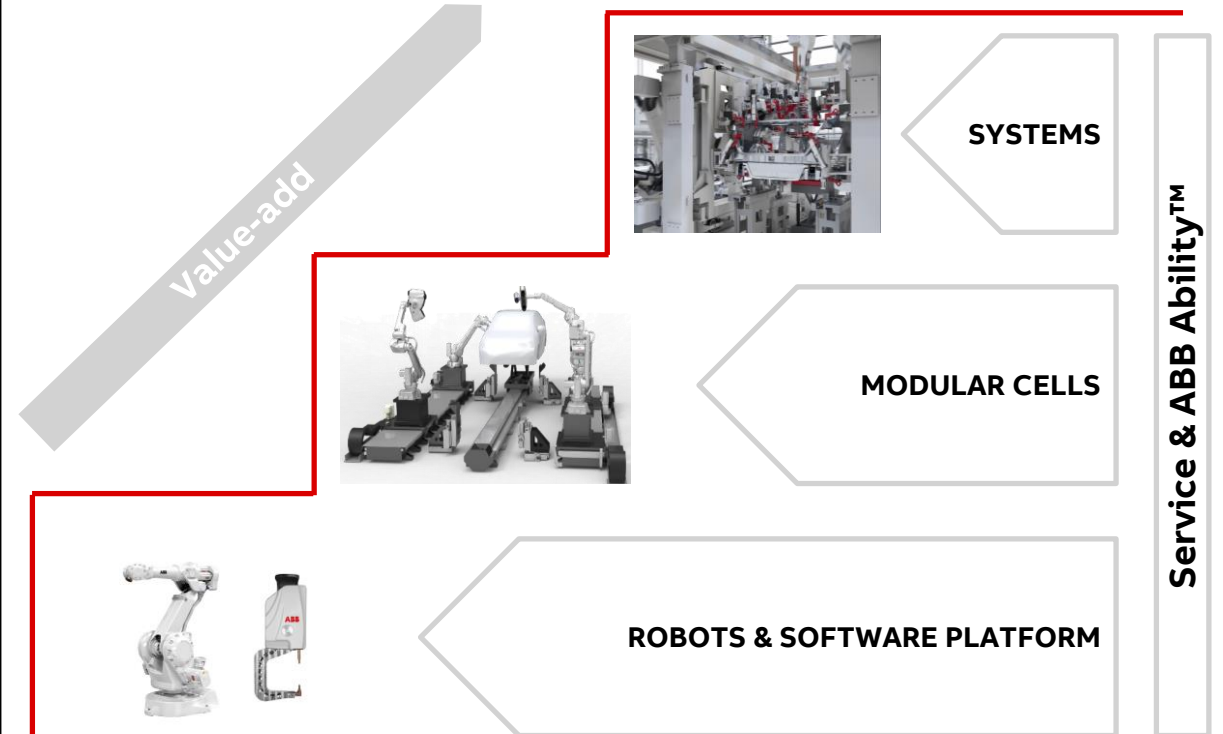


**Final Trim**



**Paint**

## Our value steps with the robot at the core





# A complete automotive portfolio, from software to service

Global approach to partnership for manufacturing

SELECTION

Global accounts



End customers

Regional accounts



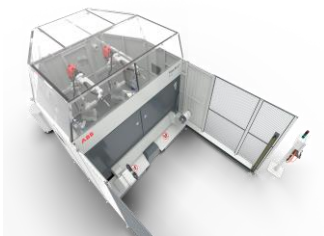
## Key Account Management



Simulation – RobotStudio



Robots



Modular cells



Systems



Digital and connected services



# Footprint: helping our customers scale globally

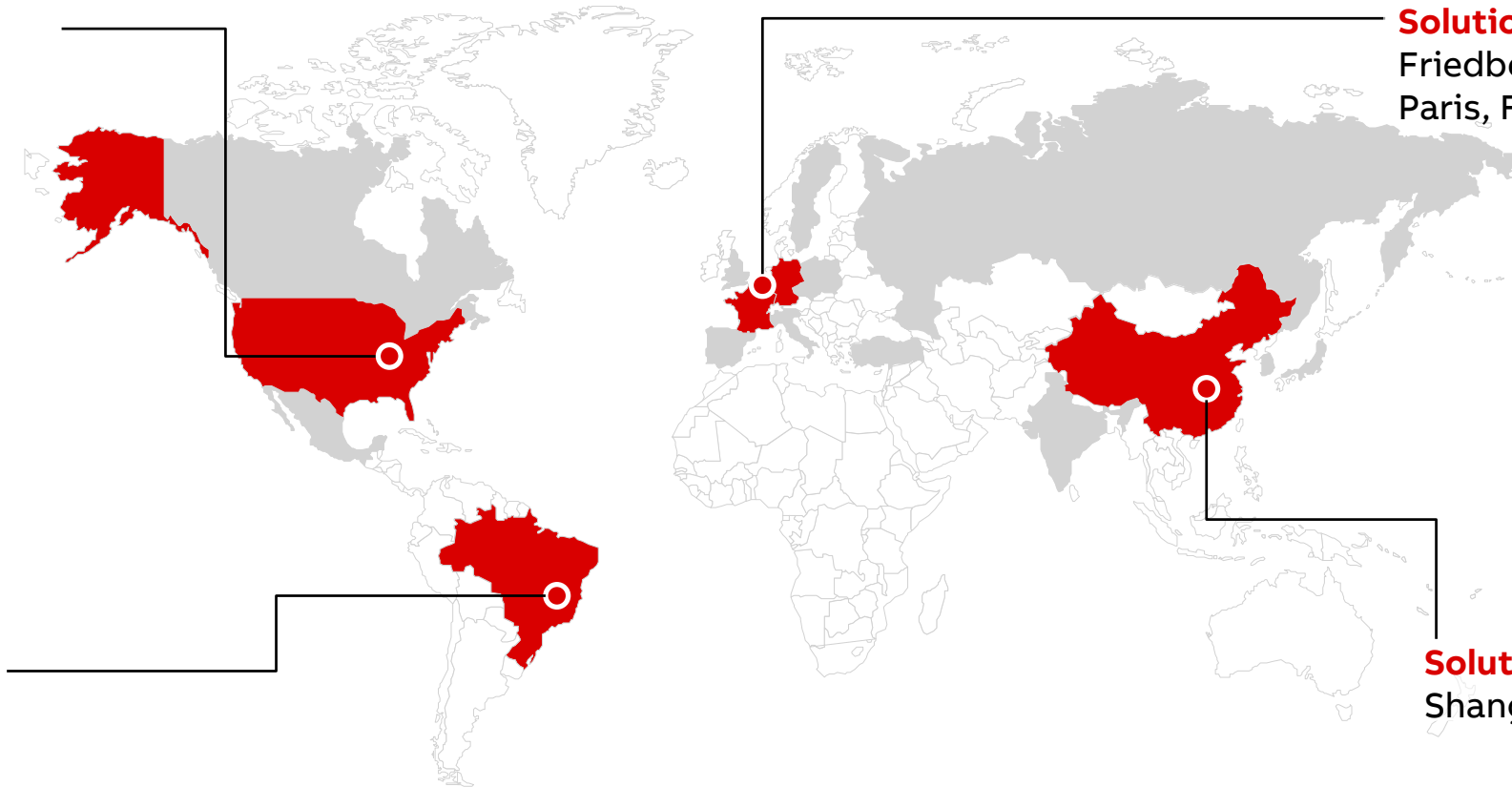
Global engineering standards with local execution

**Solution Center**  
Auburn Hills, USA

**Solution Center**  
Friedberg, Germany  
Paris, France

**Solution Center**  
Sao Paulo, Brazil

**Solution Center**  
Shanghai, China



■ Global / regional ■ Local

# Market CAGR 3%, several high-growth segments

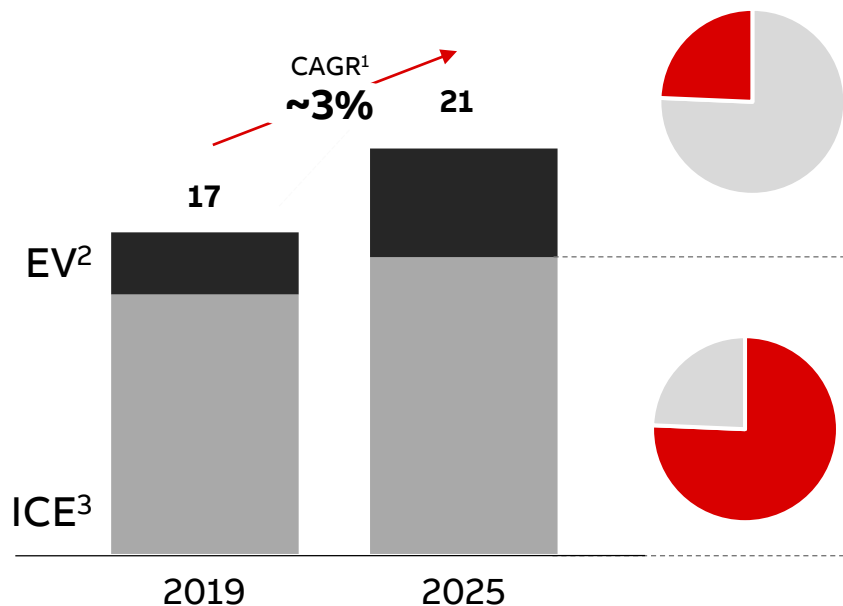
ABB is well positioned

**Global addressable market**  
in \$ bn

**Business exposure**  
% of revenues

**Market growth drivers**

**High-growth segments**



Regulatory impact

Infrastructure availability

Battery technology

PHEV<sup>4</sup> predominant technology

Legacy OEM vs. new entrants

Regional market dynamics



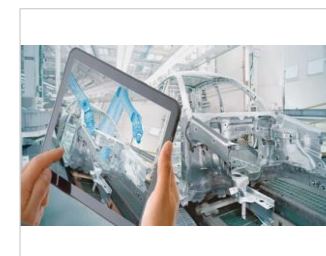
EV manufacturing



Cell-based manufacturing



Final assembly



Digital factory automation



# How we win

- ▶ **Balanced portfolio: products, cells, systems, service**
- ▶ **Innovation for differentiation**
- ▶ **Leveraging our position in high-growth segments**
- ▶ **Focus on operational excellence**



# Why a balanced portfolio is important

Leading with innovation and expertise

## Product and software platform



Broadest product portfolio for all customer needs

Software for off-line design and virtual commissioning

## Modular cells and systems



Understanding customer challenges

Differentiated offering

Product and services pull-through

## Service and digital solutions



Digital solutions on the edge and cloud

Enhanced asset optimization, up-time and productivity

Customer proximity over whole asset life-cycle

# Innovation for differentiation

Digital factory automation for paint process

## Connected atomizer for real-time process control



## Customer value proposition



### Productivity

Increased transfer-efficiency  
and reduced paint-loss



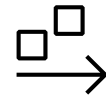
### Flexibility

Closed-loop optimization for  
real-time process adjustments



### Quality

Higher initial surface quality  
without manual touch-up



### Simplicity

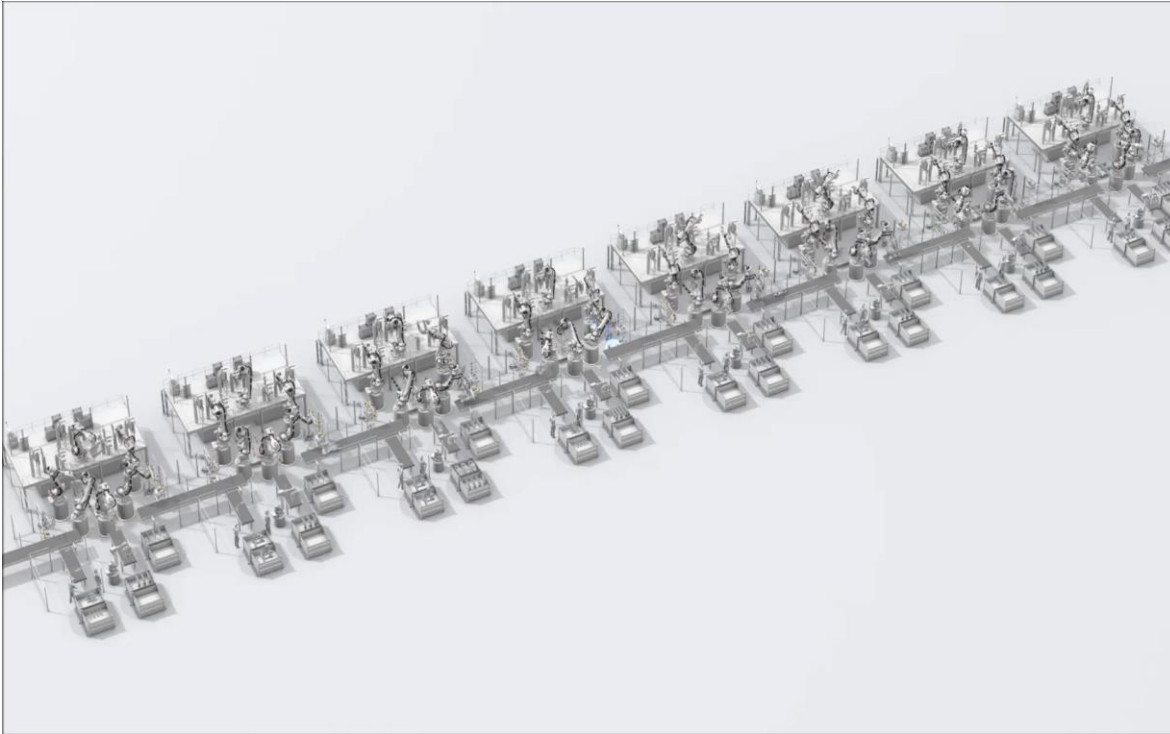
Predictive analytics to prevent  
costly downtimes



# Innovation for differentiation

From monolithic lines to cell-based manufacturing solutions

## Mobile robot based cell production



## Customer value proposition



### Productivity

Integrating manufacturing process with logistics with kitting of parts



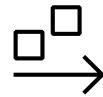
### Flexibility

Lot-size one production with six models



### Quality

RFID<sup>1</sup> tracking of process steps with 100% traceability



### Simplicity

Expansion by adding cells based on model success

# Innovation for differentiation

## Collaborative applications for Final Assembly

### Visual servo technology



### Customer value proposition



#### Productivity

Collaborative work zones with  
safe-move technology



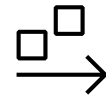
#### Flexibility

Visual servo technology makes  
moving line automation  
possible



#### Quality

Consistent and improved first  
pass yield with robot  
automation



#### HSE

Health and safety; automating  
physically challenging tasks

# Leveraging position in high-growth segments

Leadership in EV manufacturing

## Electrical Vehicle applications



Battery modules



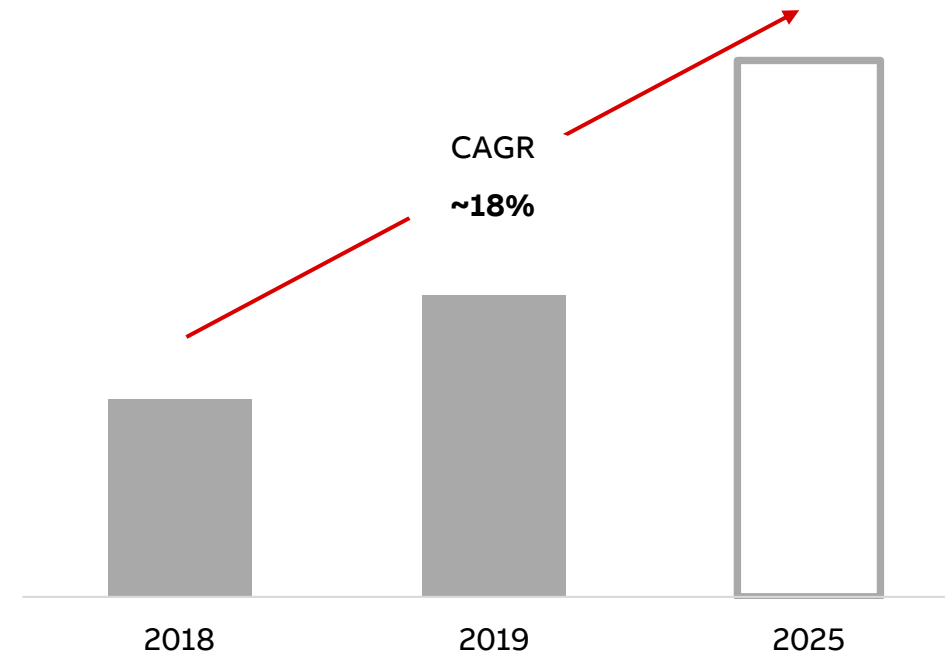
Battery packs



Electrical motors

## Early mover advantage create strong growth

ABB EV manufacturing revenue<sup>1</sup>



## Example of customers



TESLA







## Quality



- Speed of resolution
- Product and process
- Customer NPS

## Execution



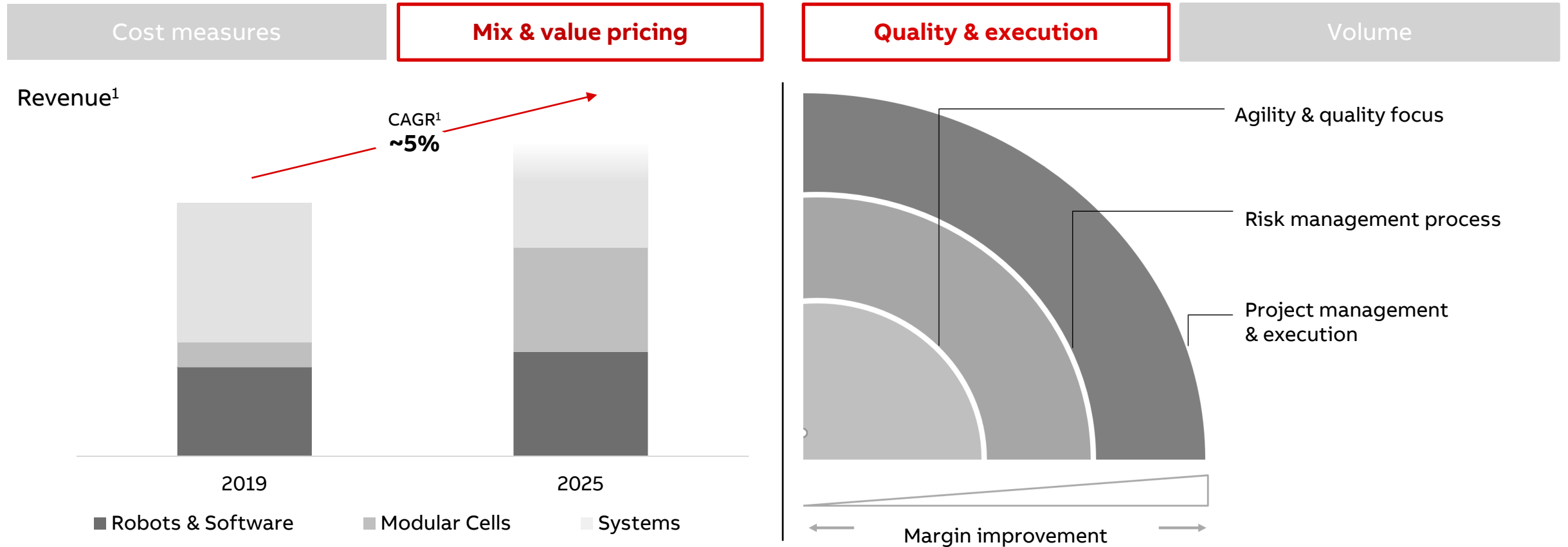
- Risk management
- Project execution
- Governance

## Leadership



- Customer experience culture
- Empowered businesses
- Entrepreneurial spirit

# Driving profitability



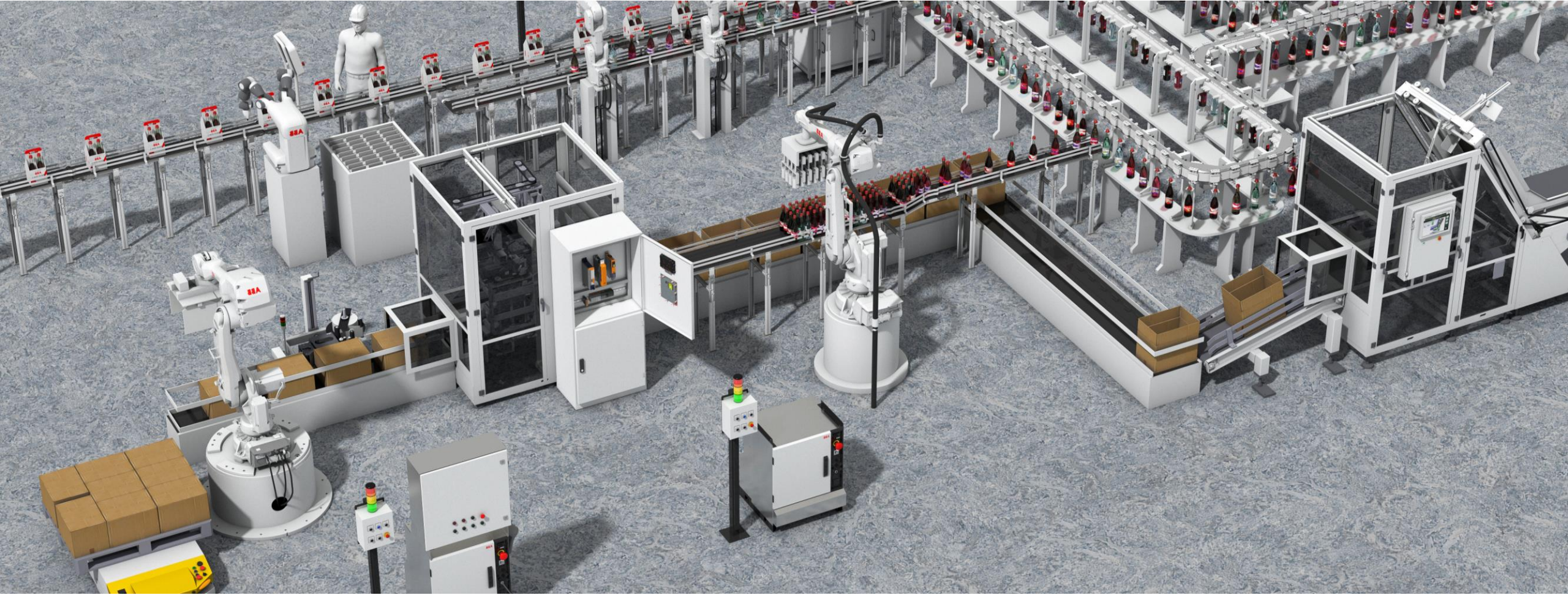


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# Our focus

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- 1** **Balanced offering: products, cells, systems and service**
  - 2** **Growth through innovation and domain expertise**
  - 3** **Driving profitability through operational excellence**





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# ABB Robotics & Discrete Automation Investor Day

Driving new automation solutions

Hans Wimmer, Managing Director Machine Automation Business Line



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# Our focus

- 1 Pathway to growth
- 2 Customer partnering
- 3 Driving profitability



## What we do

**Our products and solutions automate machines and processes for our customers across industries**

**Integrated portfolio and solution competence**











# Leading in key industries

Well balanced mix providing stability

## Selected key industries

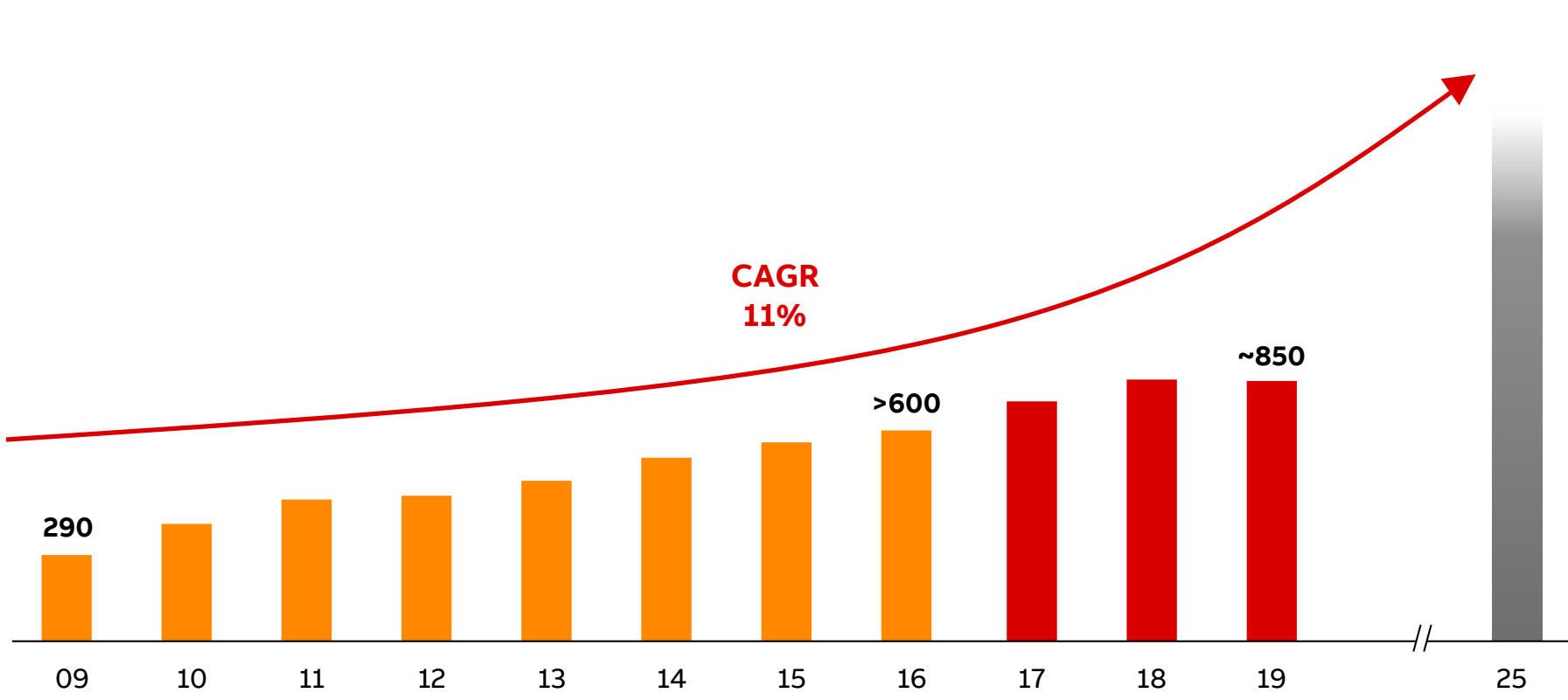
Traditional machinery	 Metal	 Plastics
	 Food & beverage	 Printing & converting
New segments	 Medical assembly	 Mobile automation

## Solution examples

Extruder	
Bottling machine	
Pharma packaging	

# A high growth track record

Revenue development (\$ mn)



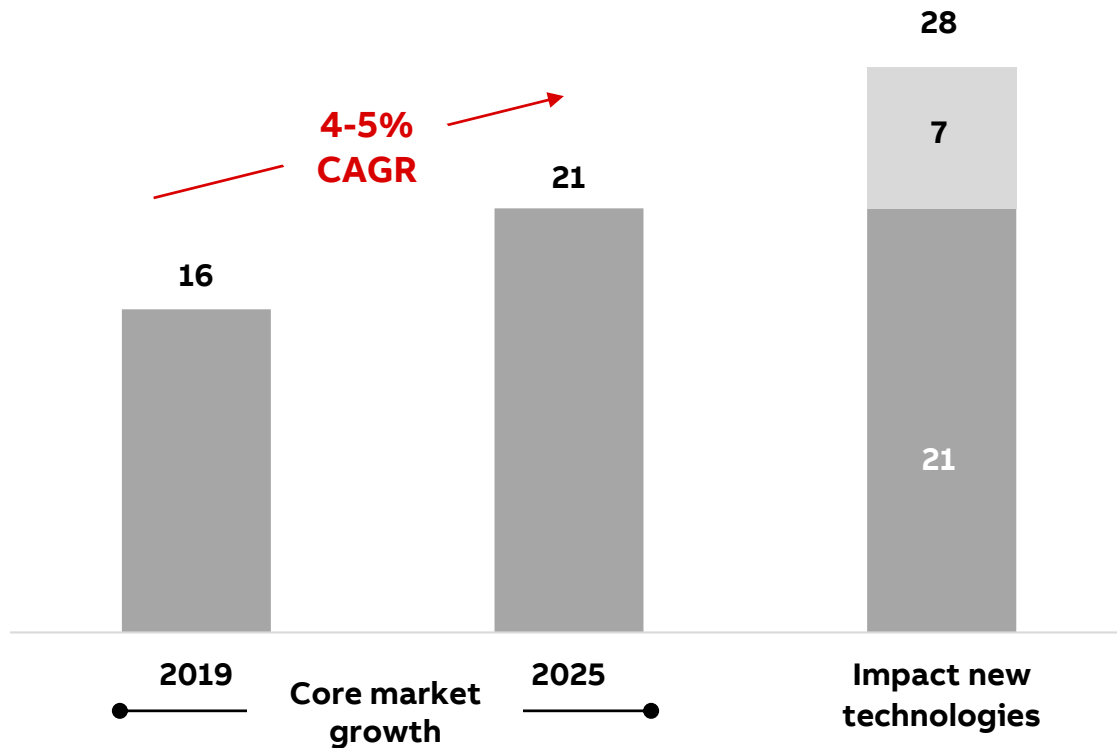
## Highlights

- 11% historical CAGR
- High growth continued after acquisition
- > 2/3 of way to \$1 bn mid-term target since acquisition
- Targeting to continue growth path and double business by 2025



# Attractive market

## Sustainable growth through the cycle (\$ bn<sup>1</sup>)



## Key growth drivers

**Productivity increase**

**Flexible manufacturing**

**Increasing automation levels:** labor shortage, quality expectations

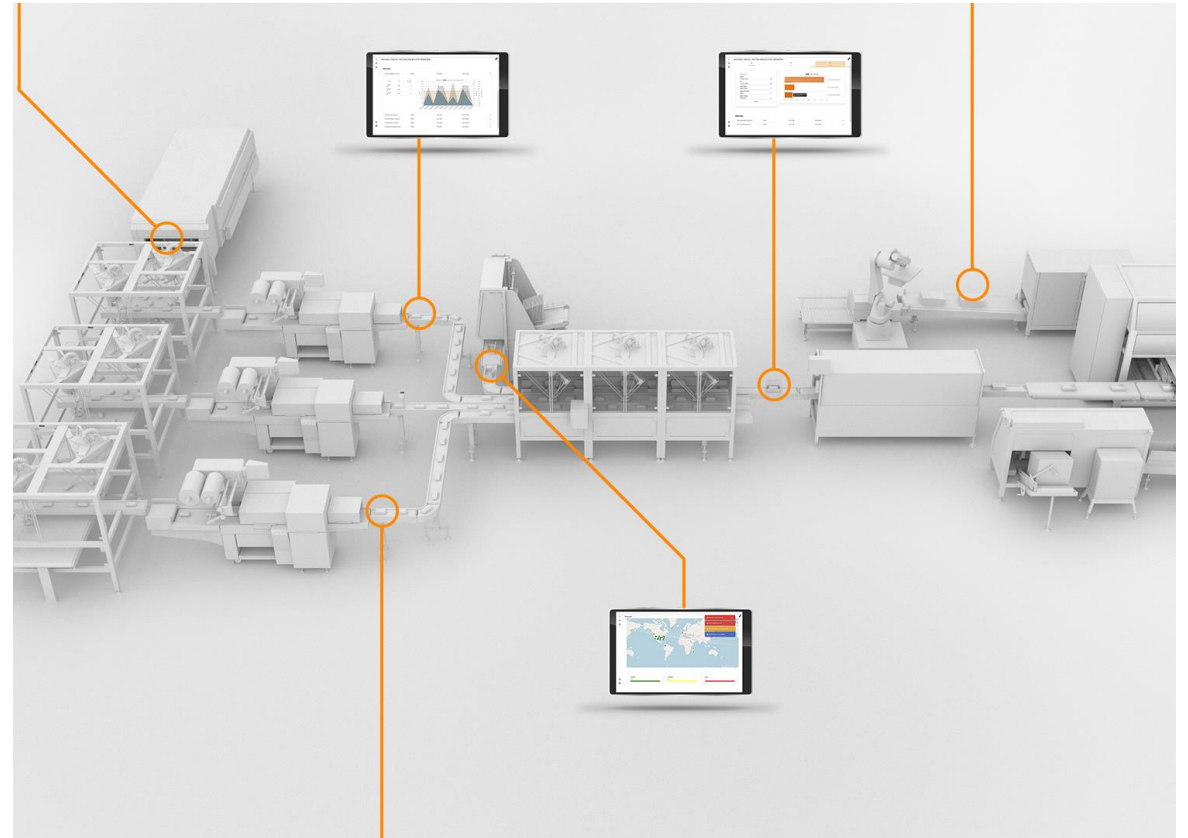
**Technological disruptors:** track systems, integrated vision, machine-centric robotics

**Digitalization and AI power:** simpler engineering, operations improvements



# How we win

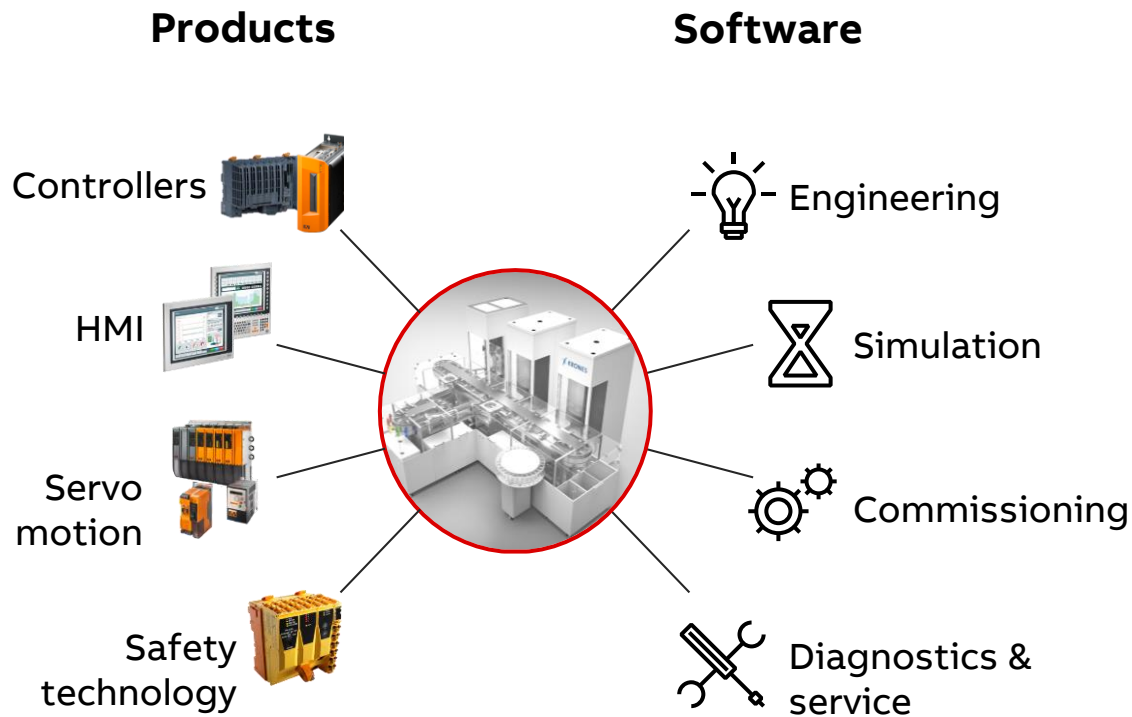
- ▶ **Integrated portfolio and solutions**
- ▶ **Innovation strength**
- ▶ **Accelerating growth in Americas and Asia**
- ▶ **Embedded partnerships for mutual success**



# Integrated portfolio and solutions as distinctive value proposition

Our well proven offering and business model

## Portfolio



## Business model

**Solution sales** with intensive upfront sales activities

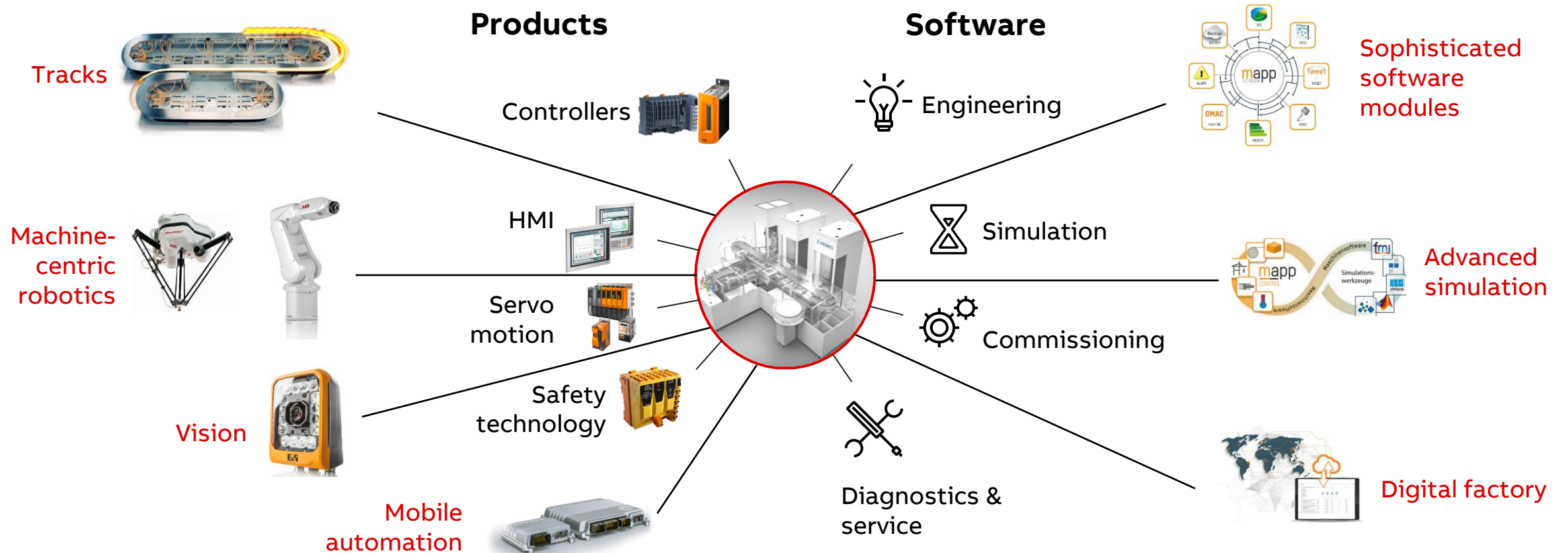
**Technically experienced** sales team

**Application engineering** competence

**Close relationship** with customers

**Recurrent business and long-lasting partnerships with OEMs**

# Pioneering innovations enrich the portfolio






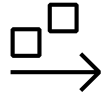


# Machine-centric robotics

Mid-term revenue potential: >\$100 mn<sup>1</sup>



## Customer value proposition





 <b>Productivity</b> Higher machine-efficiency Smaller footprint	 <b>Flexibility</b> Faster product changes
 <b>Quality</b> High precision	 <b>Simplicity</b> One user-oriented interface

# Flexible track technology

Mid-term revenue potential: >\$100 mn<sup>1</sup>

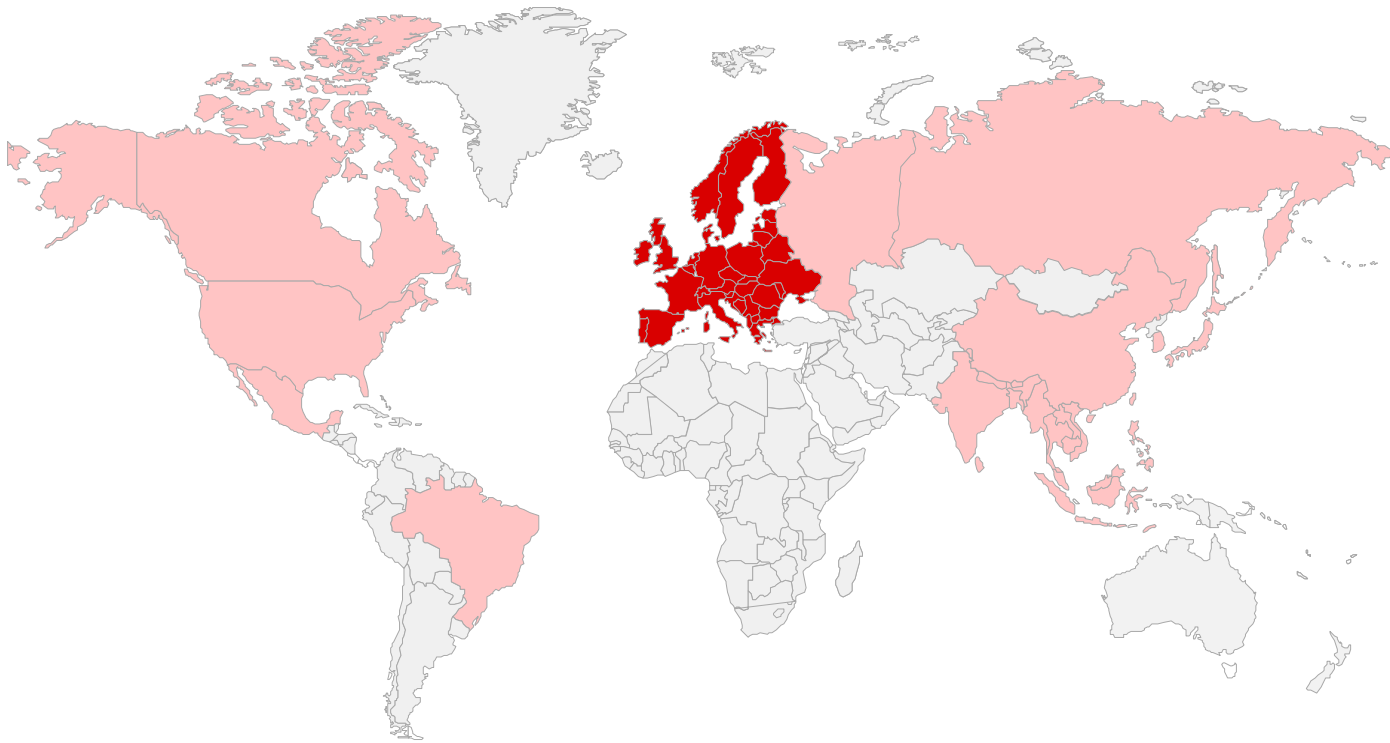


## Customer value proposition

 <b>Productivity</b> More products per minute Smaller footprint	 <b>Flexibility</b> Lot-size one production Individualized output
 <b>Quality</b> 100% individual traceability	 <b>Simplicity</b> Easy and fast change over

# Accelerating growth in Americas and Asia

## Global presence



## Key levers

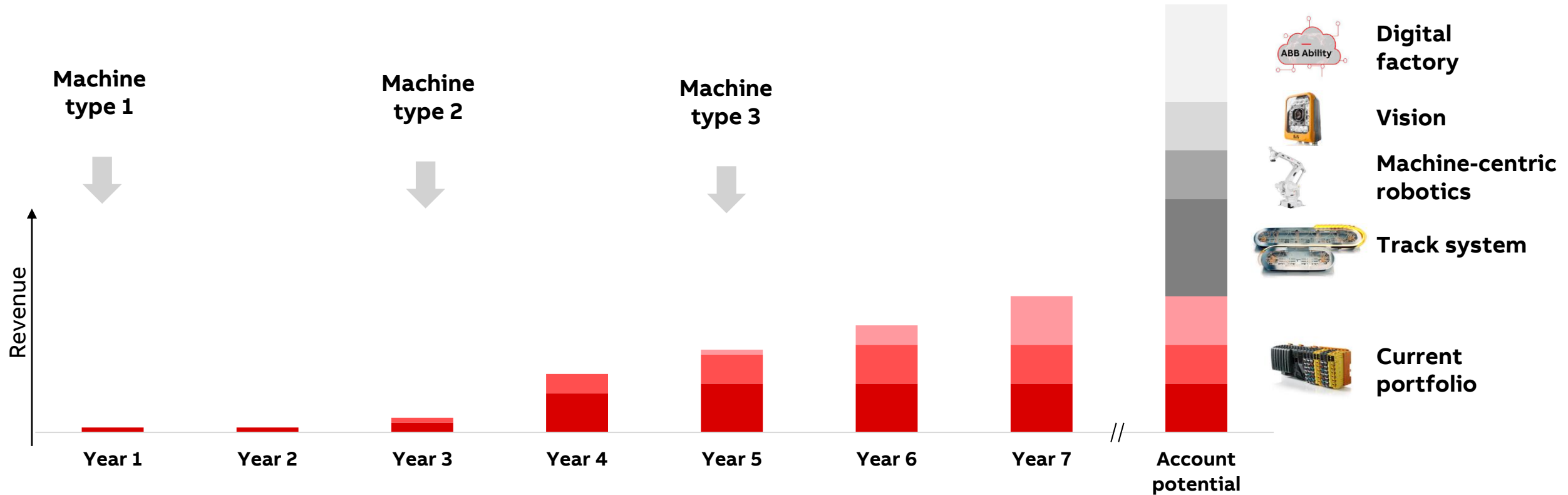
- Focused investments in key markets
- Dedicated solution packages for mid-segment
- Following globalizing customers
- Increased access to multi-nationals with new technologies
- Growing with ABB: channels, accounts, products



# Embedded customer partnerships for mutual success

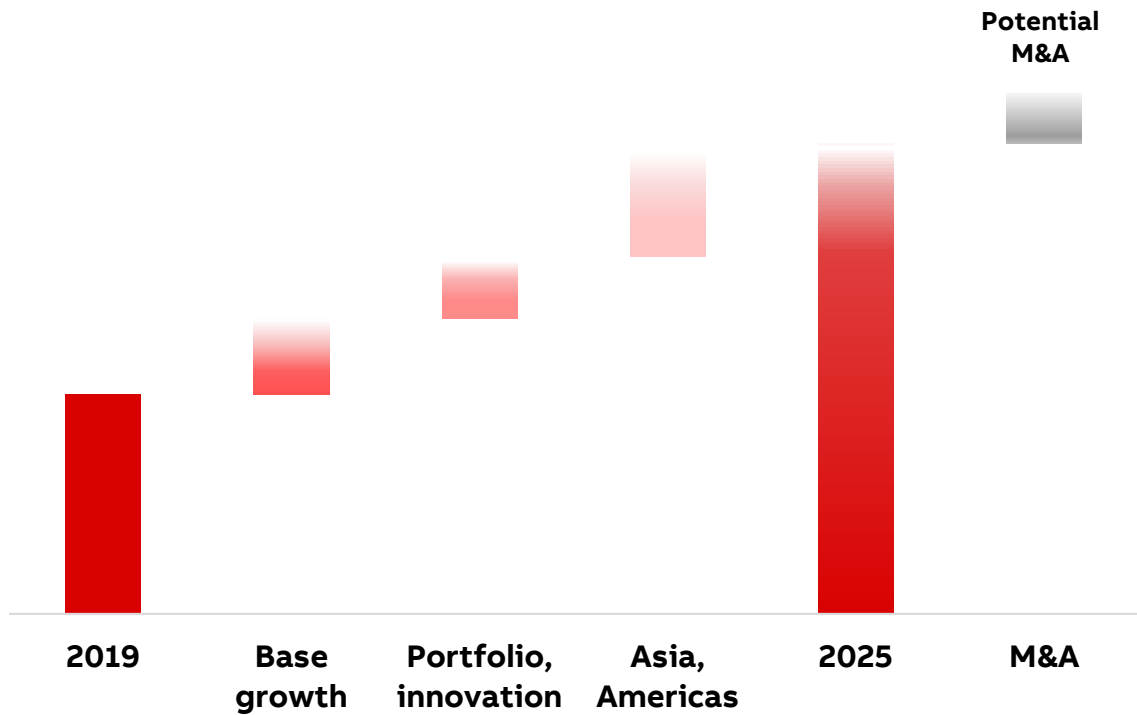
Revenue

ILLUSTRATIVE



# More than doubling our business

## Revenue ambition<sup>1</sup> (\$ mn)



## Strategic initiatives

- Base growth above industry
- Strategic expansion of portfolio with leading innovations
- Accelerated growth in Asia and Americas
- Selected acquisitions to augment the offering

# Driving profitability

Cost measures

**Mix & value pricing**

Quality & execution

Volume

**New product innovations** boost revenue per machine

## Traditional scope



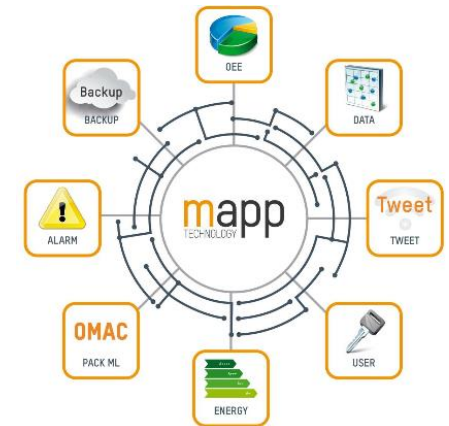
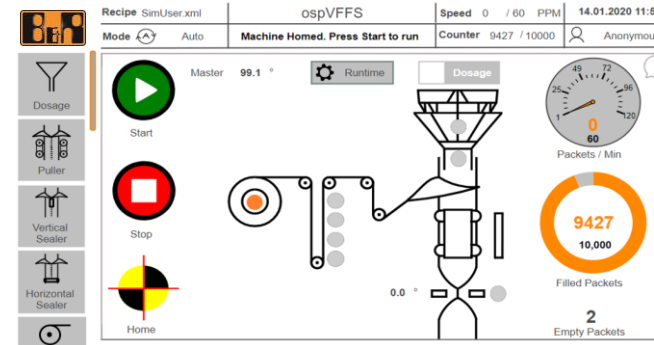
**\$10 k** per machine

## Additional new scope



**\$50 k** per machine

**OEM solution packages** – offering for mid-segment to cut individual upfront investment



**Software license sales**– modular framework with powerful functions to reduce development cycle significantly



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**ABB**