



NOVEMBER 19, 2020

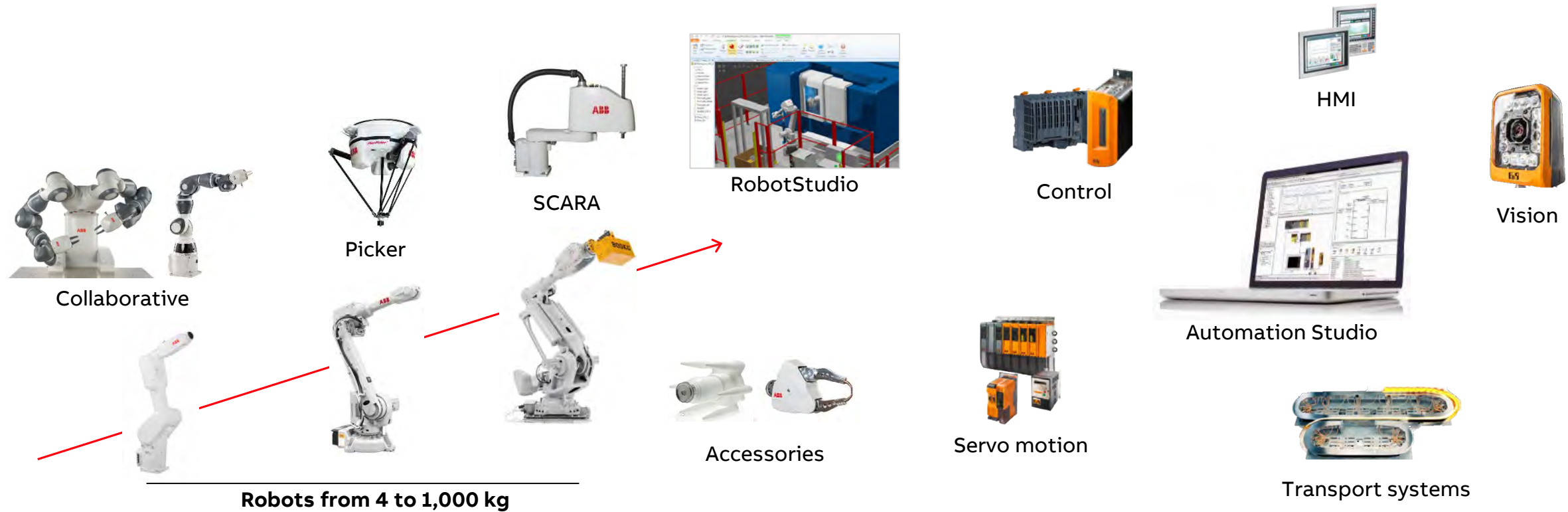
# Robotics & Discrete Automation

## Capital Markets Day 2020

Sami Atiya,  
President of Robotics & Discrete Automation

# A strong portfolio for customer needs...

Robotics and machine automation



**Broad scope across robotics and machine automation**

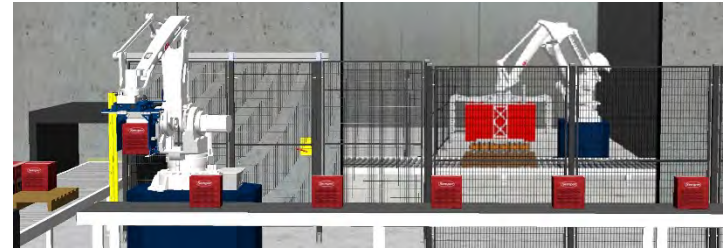


## ... as a base for value creating solutions

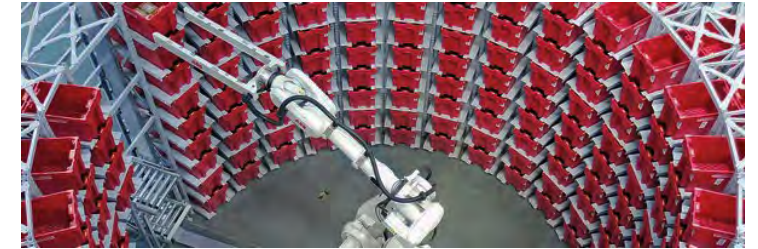
Technologically leading product portfolio



Software and digital for engineering and simulation



Industry and process expertise



Robotics and automation solutions

Of total revenue:



Auto OEMs  
~28%



Auto Tier 1  
~12%



Electronics  
~4%



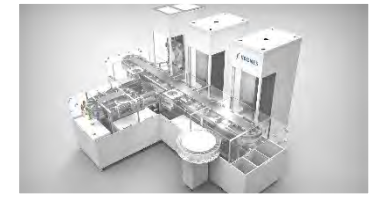
General industry  
~22%



Service Robotics  
~7%



Machine builders  
~26%



# Two distinct divisions creating superior value

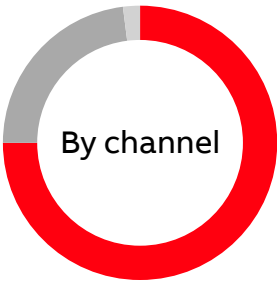
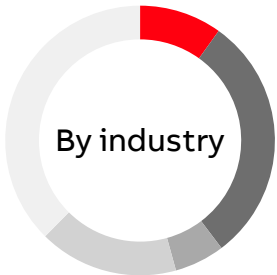
Individually and jointly

## Robotics (rev. 2019: \$2,250-2,750 mn)

Robotics products, solutions and services



Serving end users and integrators

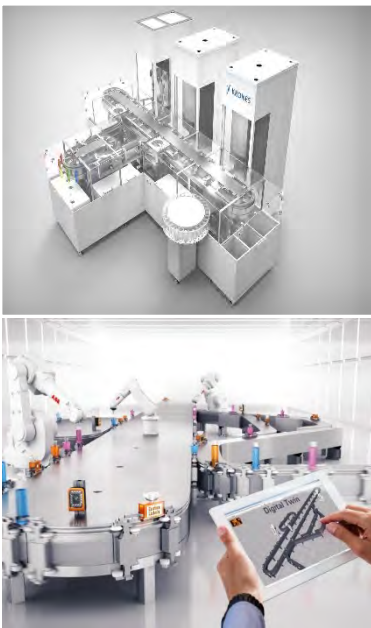


Major competitors

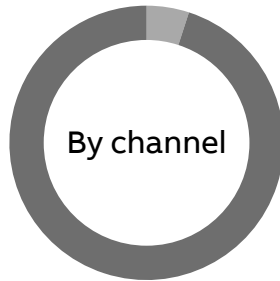
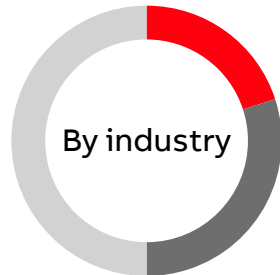


## Machine Automation (rev. 2019: \$750-1,250 mn)

Integrated machine automation solutions



Serving machinery OEMs



Major competitors



By industry

- Con. Goods
- Gen. Industry
- Electronics

- Auto Tier1
- Auto OEM
- Other

By channel

- Direct sales
- Sys. int.
- OEMs
- Distributors

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# What we will show you today

## 01. Attractive market

- Mid and long-term attractive and sustainable automation growth
- Mega-trends providing new opportunities remain intact

## 02. How we win

- Market and customer segment focus
- Technology and application leadership

## 03. Driving profitability

- Operational EBITA margin within 13–17% corridor as from 2023
- Cost and execution improvements
- Investment in innovation





# Key mega-trends driving demand for robotics and automation

Flexibility and simplification new and increasingly important

## Mega-trends

<b>Individualized consumer</b>  1/4 Americans have bought personalized products <sup>1</sup>	<b>Digitalization</b>  Connected factory data / day = 160 million books <sup>3</sup>
<b>Labor shortage</b>  A quarter China's population will be 60 or older by 2030 <sup>2</sup>	<b>Uncertainty</b>  40% of US companies in China consider / have relocated outside China <sup>4</sup>



## Value propositions

Improvements continue to be important	 <b>Productivity</b>	 <b>Flexibility</b>	New and increasingly important
	 <b>Quality</b>	 <b>Simplicity</b>	

1. Made to order: An analysis of US consumer perception towards personalization

2. State Council on Aging

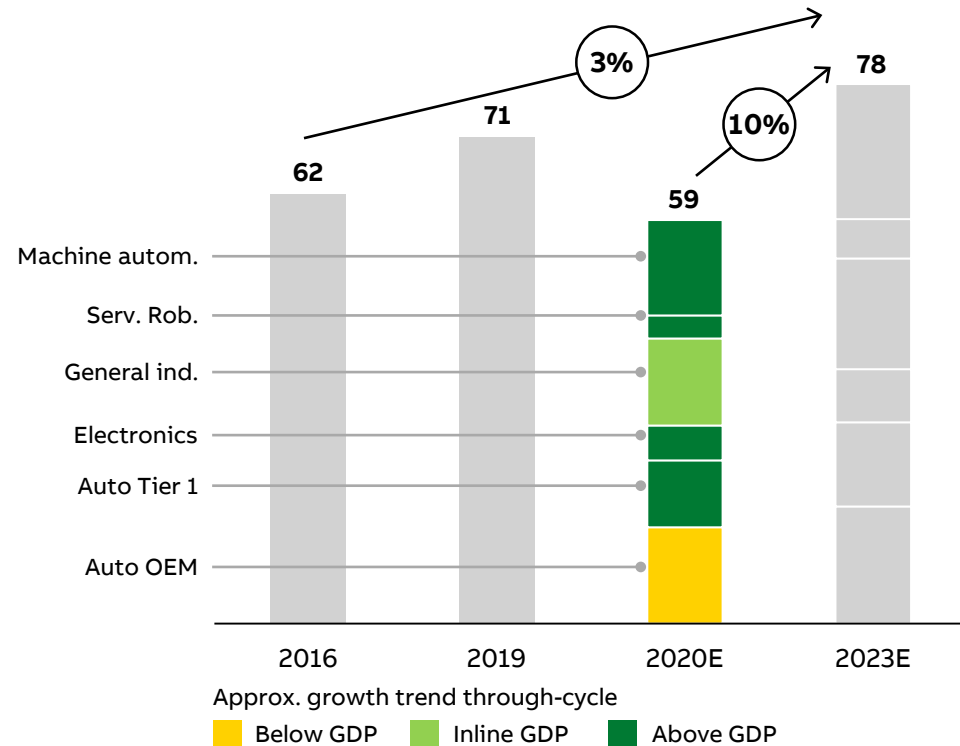
3. Intel

4. AmCham Shanghai and AmCham China joint survey

# RA's market outlook

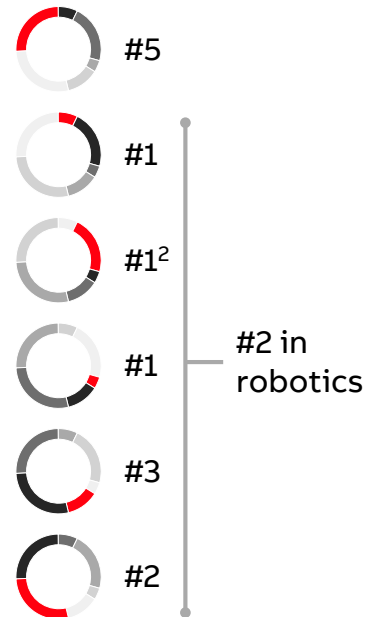
## Market size and growth

(\$ bn, % CAGR<sup>1</sup>)



## ABB's position

(as % revenues, est. share)



## Business Area priorities

**Profitable growth in high-growth segments**  
E.g. electronics, consumer goods, logistics health care

**Innovative portfolio expansions**  
E.g. collaborative robots, mobile robotics, track systems, machine-centric robotics, robotics+

**De-risking system business**

**Enhancing solution value through software and digital eco-system, service**  
Dedicated investments

**High-performance operations**  
>500 bps margin improvement

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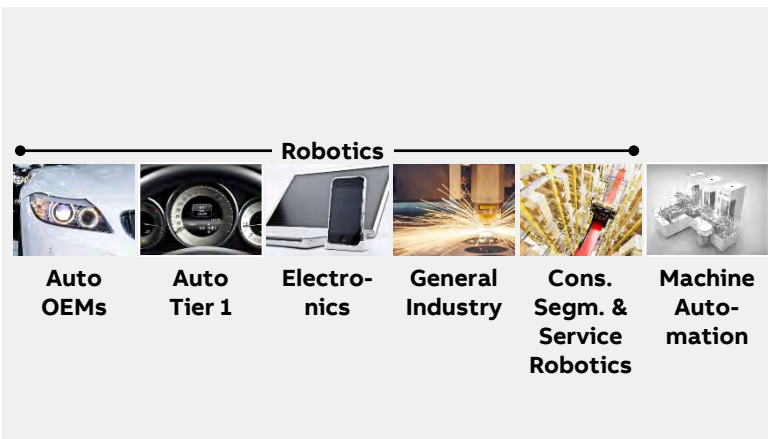




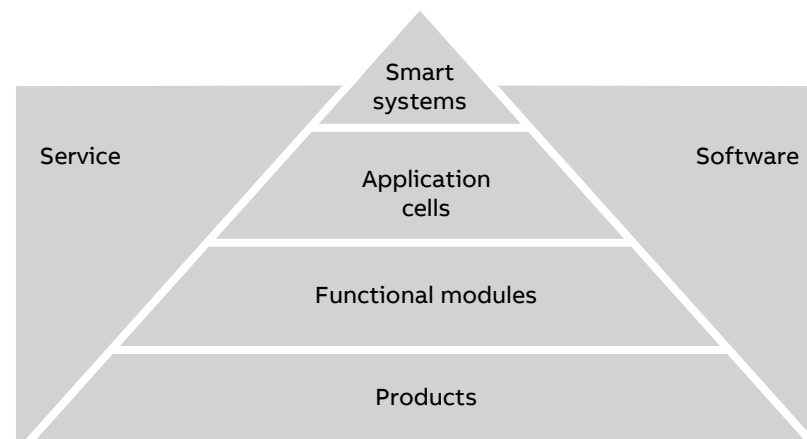
# Four levers to true industry leadership

Expanding market and improving profitability

## 1 Market and customer segment focus



## 2 Technology and application leadership



## 3 High-performance operations

Cost	Mix & price	Execution
Productivity Design-to-cost	# of robots Service share Value pricing	Quality Project execution

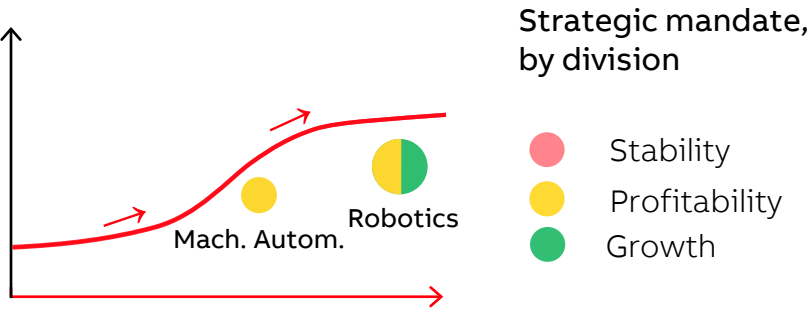
Rev. CAGR  
>10%<sup>1</sup>

Op. EBITA  
>500 bps<sup>2</sup>

## 4 People & performance culture



# How each division in Robotics & Discrete Automation will deliver



## Key priorities

Technology leadership for segment-specific solutions						New technology roll-out (track, machine-centric robotics, vision)
	Sharpened portfolio	Account penetration	Account penetration	Cobot expansion	Logistics, e-commerce	Productivity improvements
	De-risking	Productivity, processes	Product portfolio	Channel expansion	Health care, restaurants	Growth in Americas, Asia
R&D, digital	→	↗	↑	↑	↑	↗
Service	↑	↑	↗	↑	↑	→
Footprint, capex	↘	→	→	→	→	→

# Technology and application leadership

“Robotics +” customer value stack

## Service business

### Application services

- OEE improvements
- Upgrades
- Lifetime extensions

### Field service

- Data driven services
- Virtual support
- Predictive Maintenance

### Spare parts

- Flat-fee agreements
- Peace of mind

## Products & solutions

### Smart systems

### Application cells

### Functional modules

### Peripherals

### Robots

### Product software

## Software & digital ecosystem

### Common operations apps e.g. OEE



### Partner apps



### Business apps e.g. quality control



### Partner apps



### Common platform

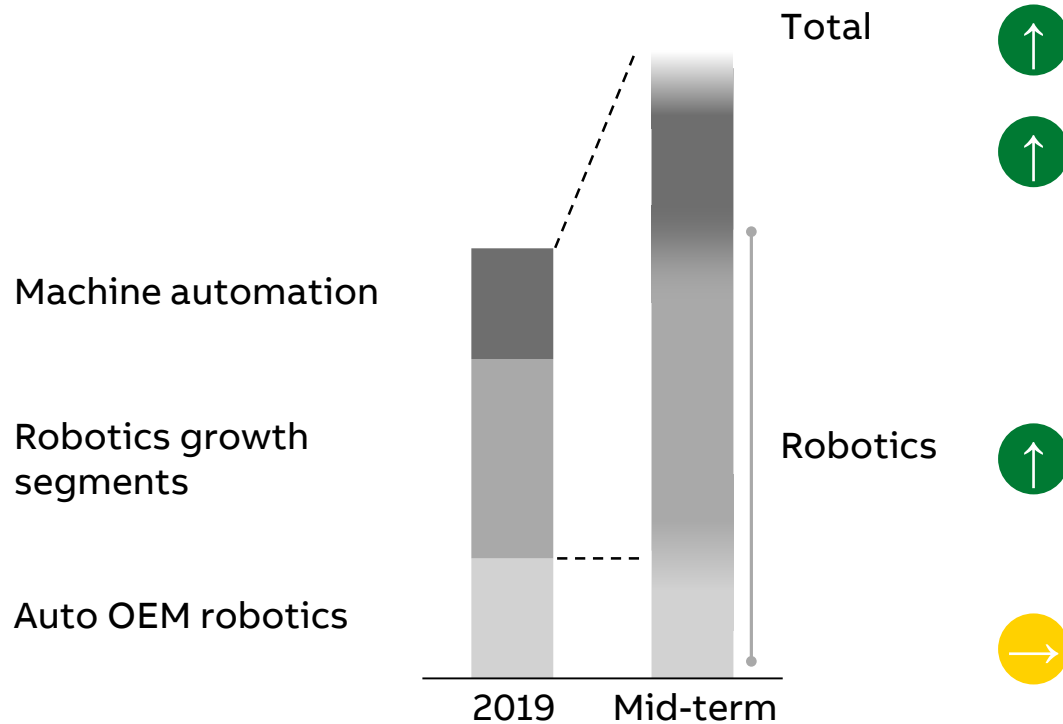
- Data collection
- User developer tools



# Improving quality of revenue

## De-risking the system business

### Mid-term revenue forecast



### Key changes

**Sharpening and de-risking** system business, esp. automotive

- Differentiating offering with high ABB technology share
- Scalable solutions
- Value adding software
- Increased service share

**Accelerated expansion** in profitable growth segments

- Dedicated focus, e.g. consumer goods, electronics, logistics
- Entering new segments, e.g. health care, restaurants

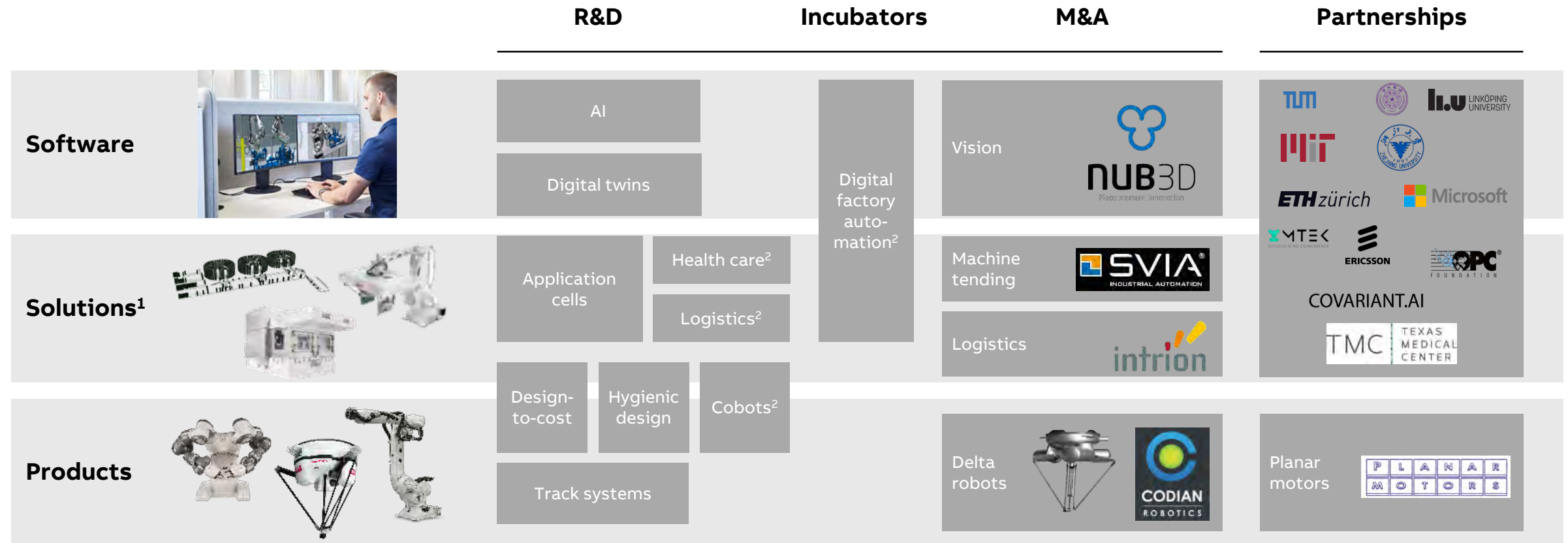
**Higher profitability**

**Reduced risk**

**Lower volatility**

# Innovation for technology leadership

## Comprehensive approaches



# Technology and application leadership

## Machine Automation

Enabling the **adaptive machine** for batch size one



### Machine-centric robotics

Fully integrated  
One engineering tool

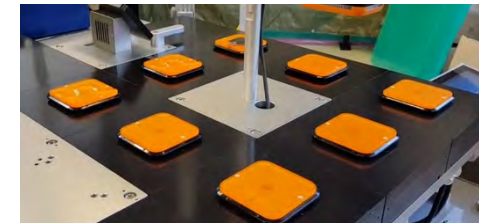
### Machine-centric robotics expansion

Acquisition of Codian Robotics



### Planar motors

Equity investment and partnership with PMI



### Vision

Fully integrated into machine control  
High level of synchronization  
Easy engineering/configuration

### Track

Next level of transportation system  
Full tractability  
High level of flexibility



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# Innovating for our purpose: a more productive, sustainable future

Helping customers to enable low-carbon society and preserve resources

## High-performance bottling automation



High performance motion  
Best-in-class bottle blow molding process



**-50%** use of plastic  
**Less** production waste

## Micro fulfillment centers



Modular, high density robotics solution  
Designed for fast “Click & Collect”



**Reduced** transportation pollution  
**Less** waste

## Advanced paint solutions



Highly compact solution  
High flexibility and low capex



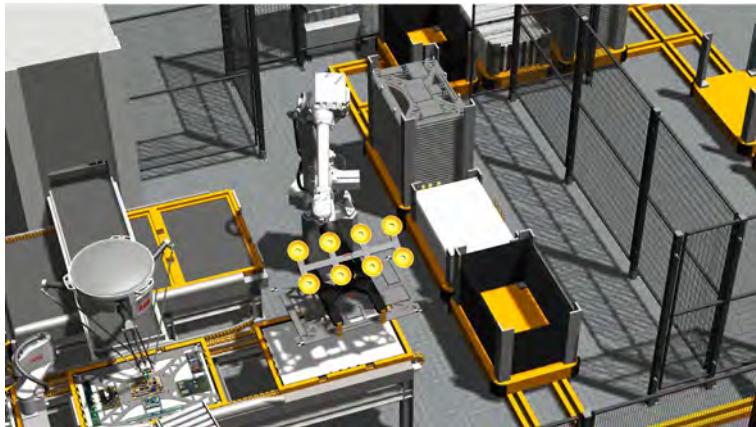
**-33%** energy consumption  
**-30%** paint loss

# Digital is core to “robotics +” strategy

Along the entire life cycle

Virtual design & commissioning

RobotStudio



Exact digital twin  
Integrated AR/VR capability

Automation control

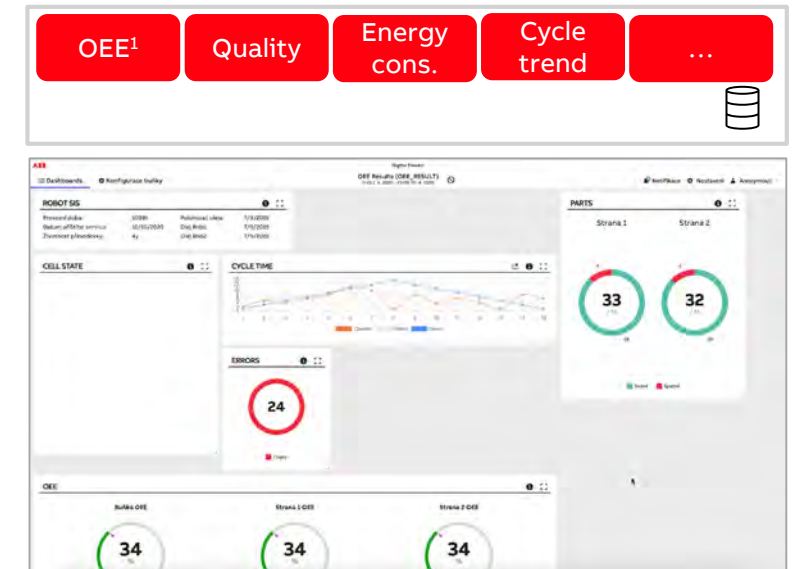
Welding cells



Modular cells, with digital control layer  
Machine Automation edge controller  
Higher quality and uptime

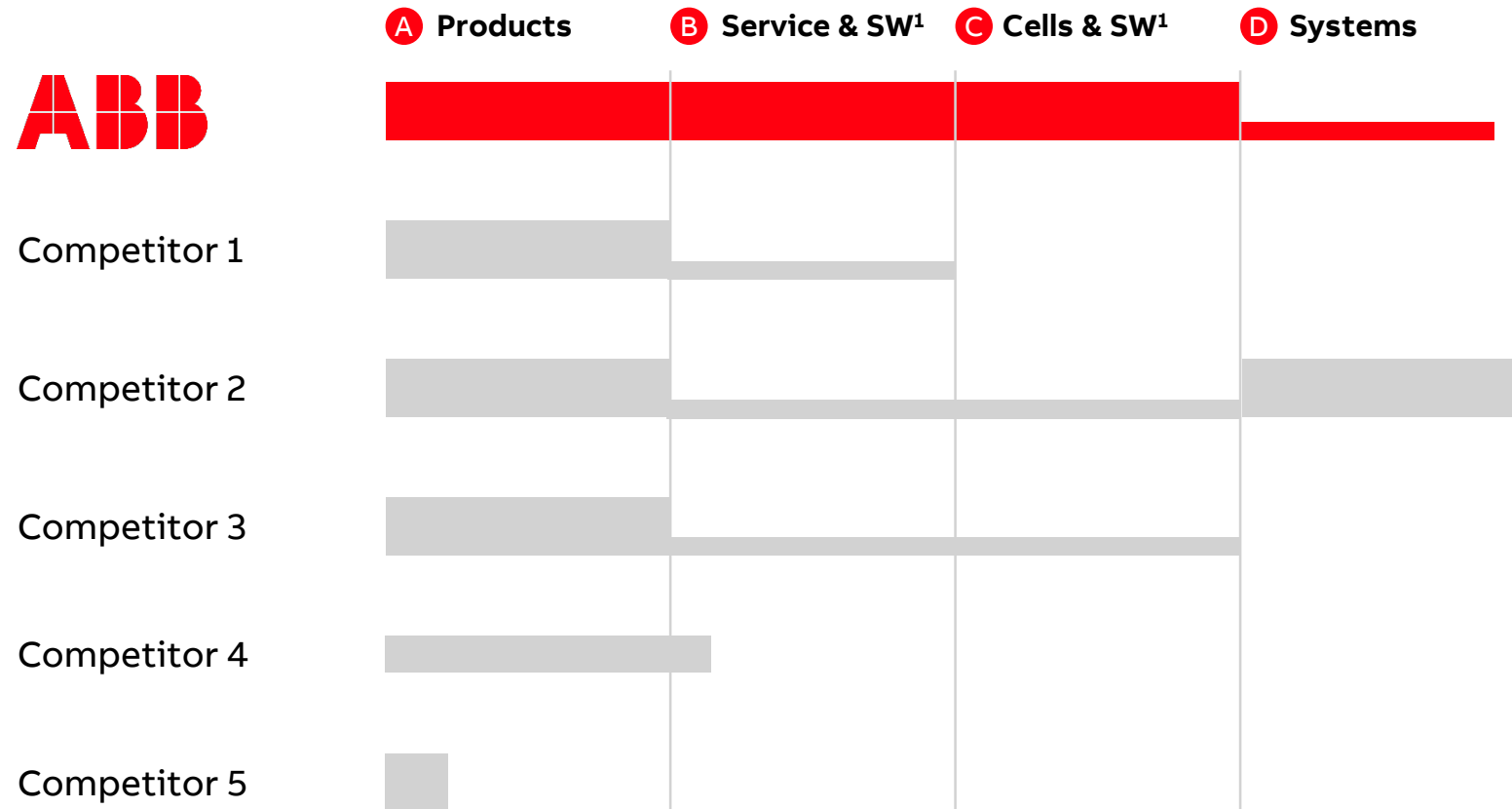
Digital operations optimization

Value adding apps



10% OEE¹ improvement

# Our unique positioning



## Differentiated positioning

- A High performance products
- B Largest network  
Advanced digital services
- C D Built-in industry expertise  
Integration of physical and digital offering  
Easy to configure, operate, maintain  
Modular, scalable, open architecture  
Incl. partner eco-system  
Digitally born: using data for value adding functionality across the whole life cycle



# Driving additional value between the two divisions

Digital factory automation



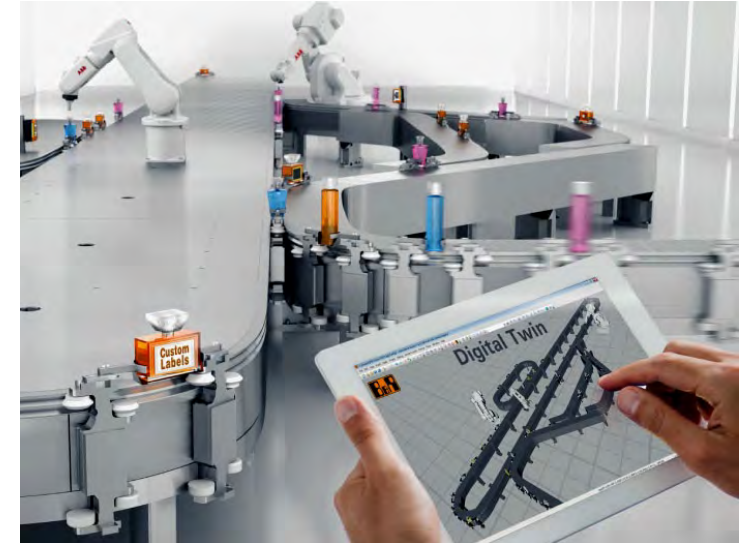
Robotics



Machine-centric robotics



Machine Automation



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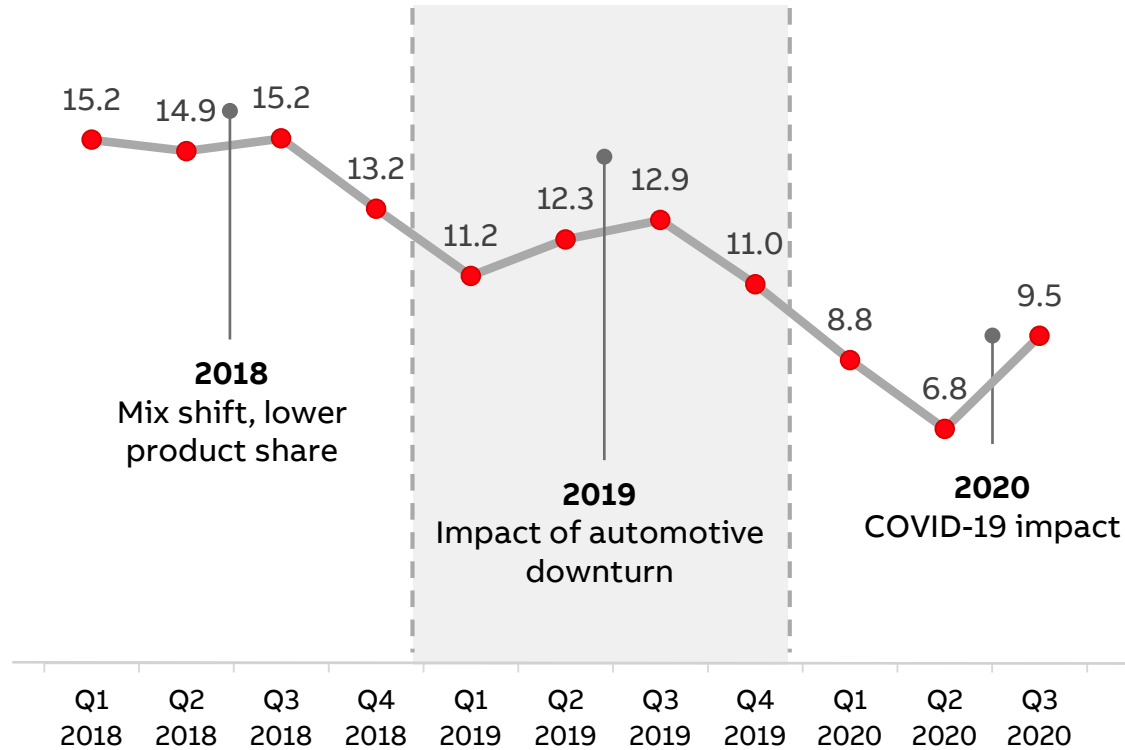
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# Resilient performance in a challenging environment

Op. EBITA margin



## 2020 performance – comments

### Q1 2020

- Strong quarter for Machine Automation, but Robotics already impacted by COVID-19 in China

### Q2 2020

- Machine Automation and Robotics are impacted by COVID-19 impact in Europe and Americas

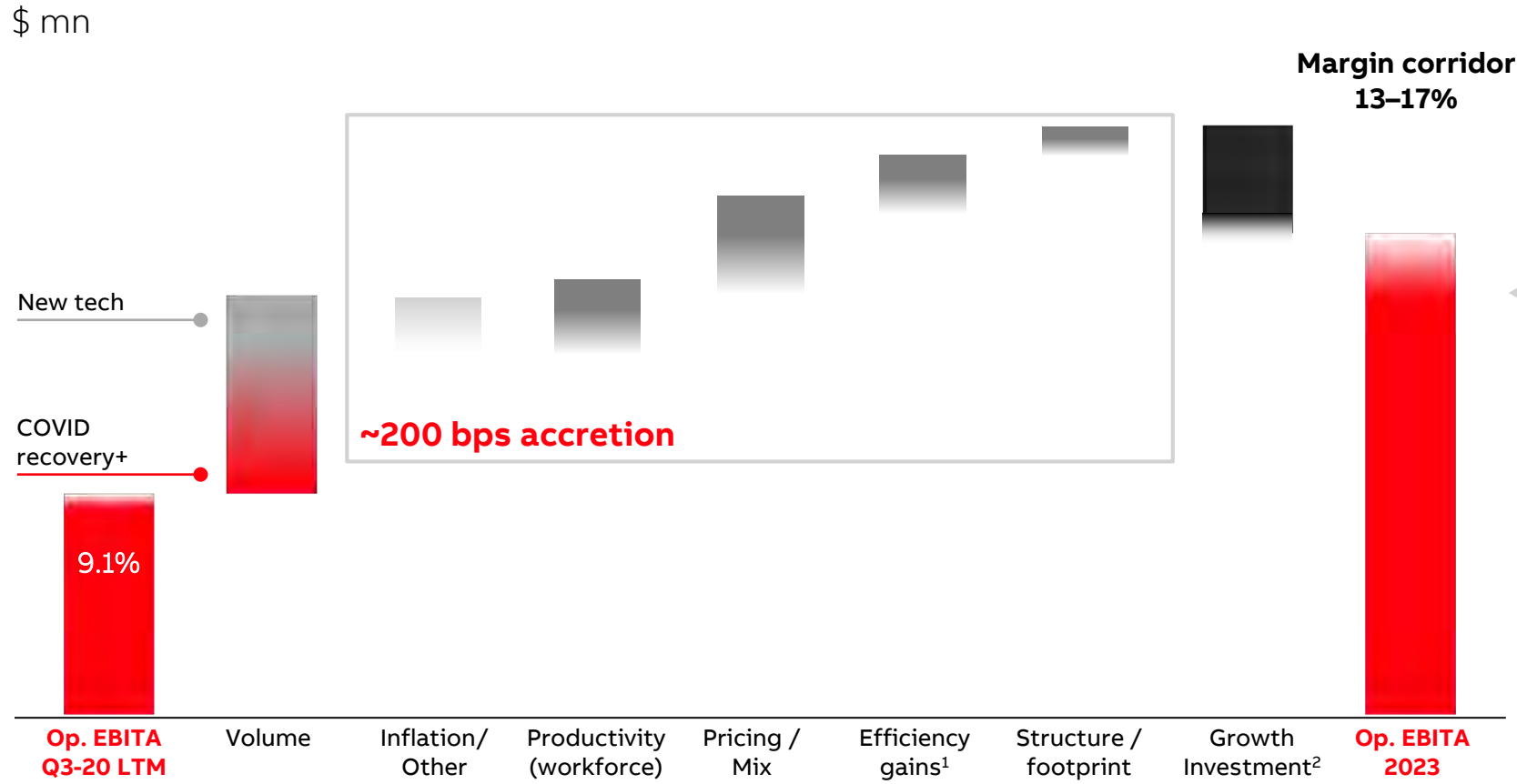
### Q3 2020

- Recovery in China, mixed bag in Europe and Americas



# Robotics & Discrete Automation Op. EBITA bridge

Well within margin corridor as from 2023



## Profitability levers

Productivity measures across divisions: 3% per year

Improve value-based selling

Improved mix enabled by digital transformation

Less systems, more products, service and application cells

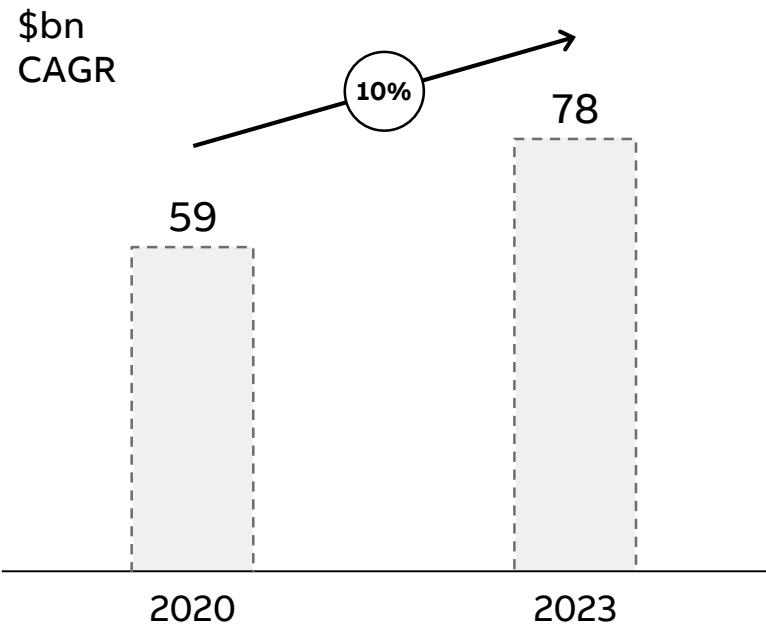
Long-term efficiency gains (e.g. design-to-cost, quality and project execution)

Footprint adjustments and optimizing engineering resources

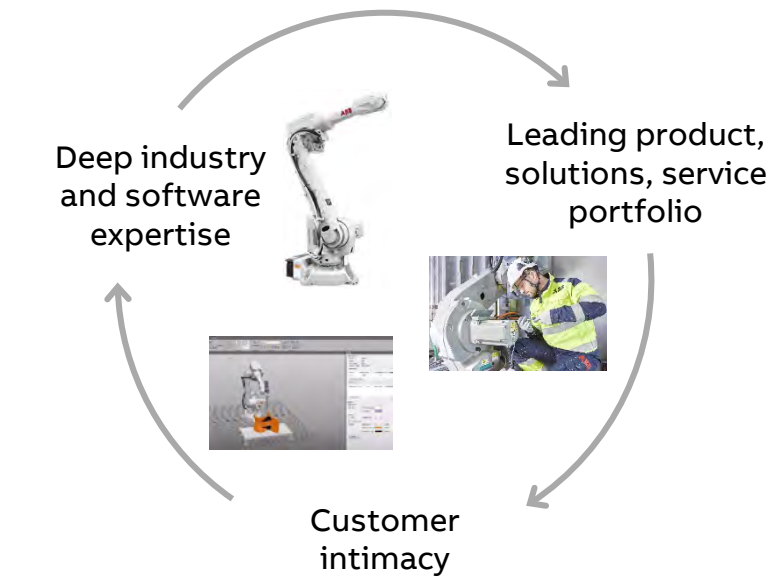
# Robotics & Discrete Automation value creation

We succeed by creating superior value

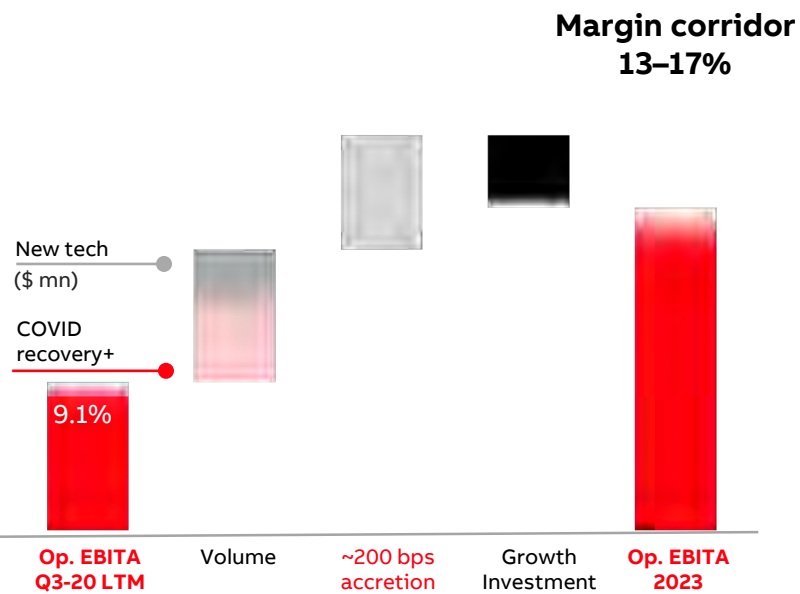
## Attractive market



## How we win



## Driving profitability



Attractive growth and margin accretion

**ABB**