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ABB Robotics & Discrete Automation Investor Day

Sami Atiya, Jaana Suvanto

President, Robotics & Discrete Automation / CFO, Robotics & Discrete Automation

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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:

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- 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

The Robotics & Discrete Automation (RA) team

Global, diverse, and deep domain experience

President



Sami Atiya
President

Business lines



Michael Larsson
Auto OEMs MD



Tanja Vainio
Auto Tier 1 MD



Rui Liang
Electronics MD



Andrea Cassoni
General Industry MD



Marc Segura
Consumer Segments &
Service Robotics MD



Hans Wimmer
Machine Automation MD

CFO



Jaana Suvanto
CFO

Delivery platforms



Hui Zhang
Global Head of Technology



Christian Divialle-Johansson
Global Head of Operations







Arno Strotgen
Global Head of Service and
Digital Platform

RA Germany



Jörg Reger
Lead RA Business Manager
Germany

Robotics & Discrete Automation in ABB's portfolio

	Robotics & Discrete Automation	Electrification	Industrial Automation	Motion
				
	Global #2	Global #2	Global #2	Global #1
2019 Revenues	\$3.3 bn	\$12.7 bn	\$6.3 bn	\$6.5 bn
2019 Op. EBITA %	11.9%	13.3%	11.7%	16.6%
Employees	~10 k	~53 k	~22 k	~20 k

What we will show you today

1 Attractive market

- Attractive and sustainable automation growth
- Mega-trends providing new opportunities

2 How we win

- Strongly positioned to benefit from market dynamics
- Driving innovation in existing and new customer segments, new solutions

3 Driving profitability

- Operating margins within 13-17% corridor over the medium term
- Focused investment in R&D and sales

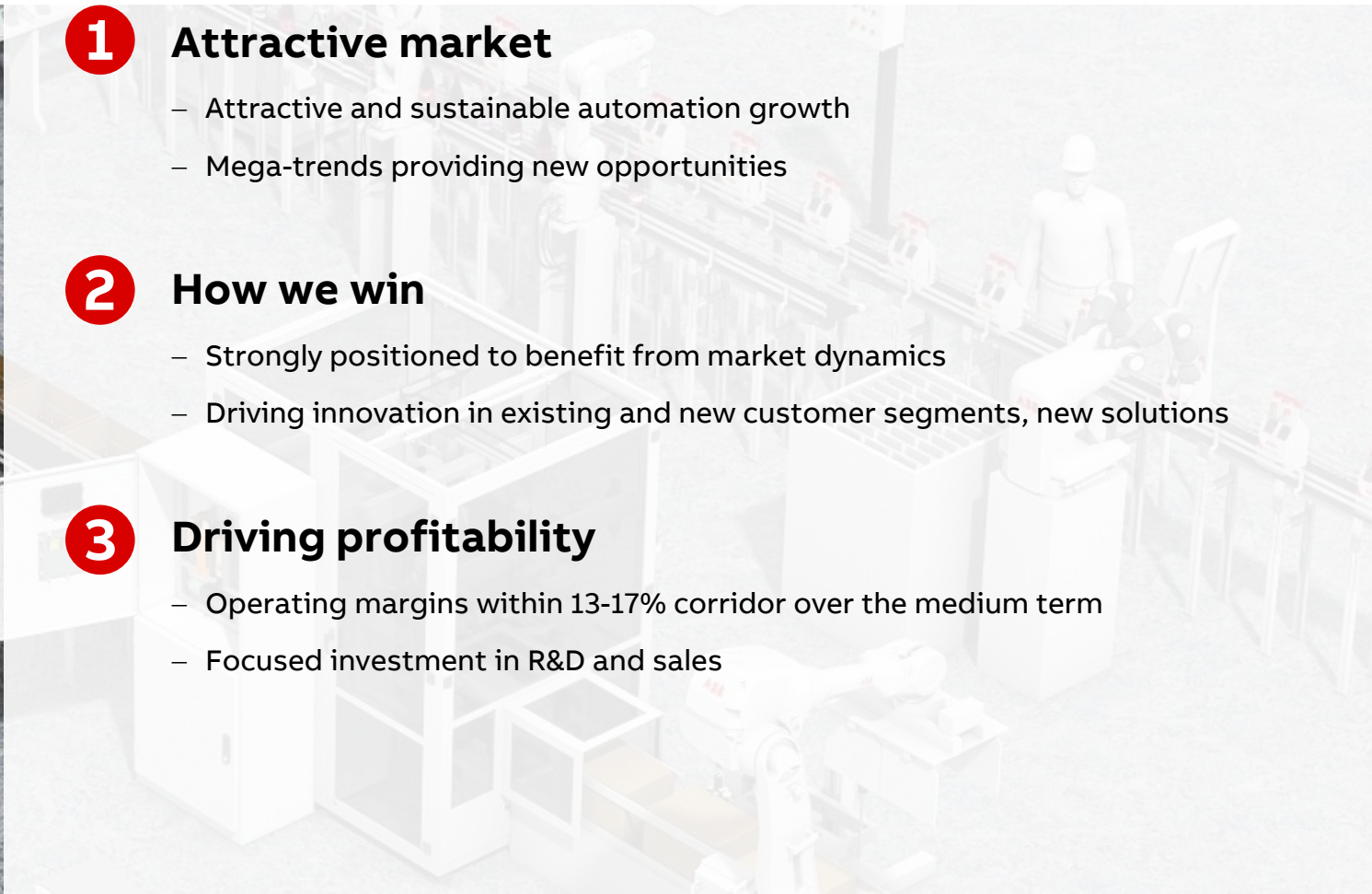


ABB Robotics & Discrete Automation

Understanding ABB RA

Attractive market

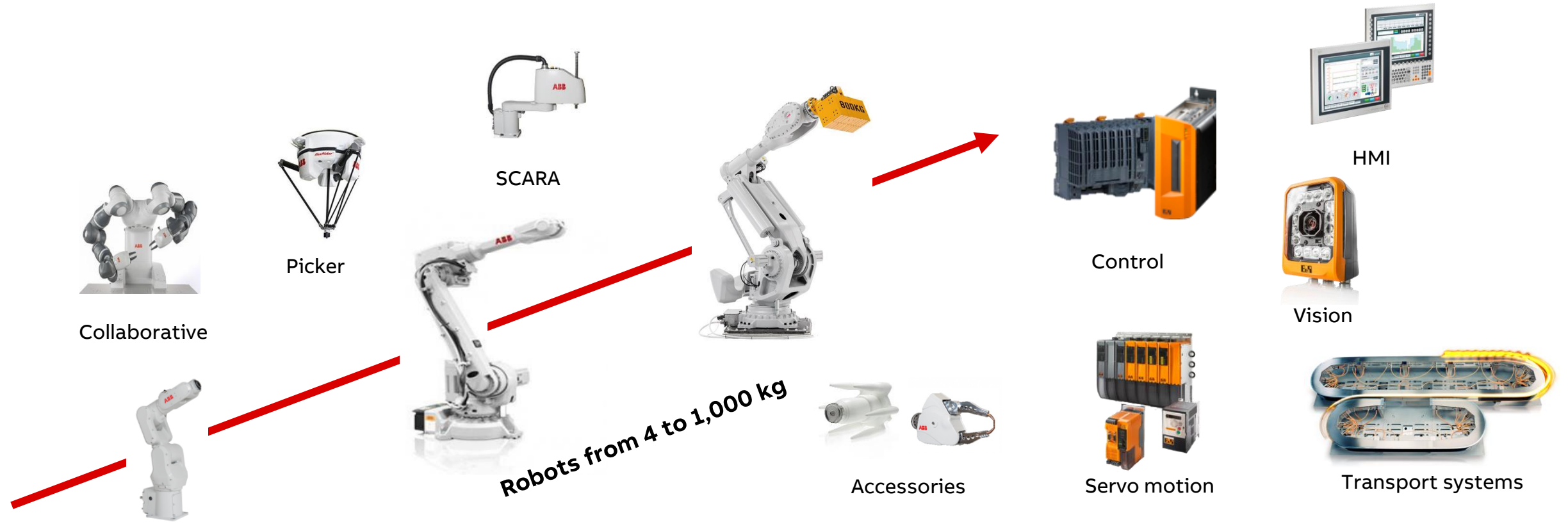
How we win

Driving profitability

Q&A

A strong portfolio for customer needs ...

Robotics and machine automation



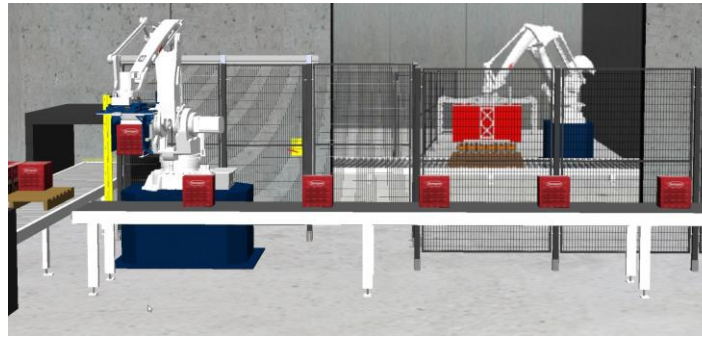
Broad scope across robotics and machine automation

...as a base for value creating solutions

End-to-end product portfolio



Software for advanced engineering and simulation



Domain expertise



Automation solutions for flexible manufacturing and smart machines

Auto OEMs



Auto Tier 1



Electronics



General industry



Consumer goods



Logistics



Machine automation

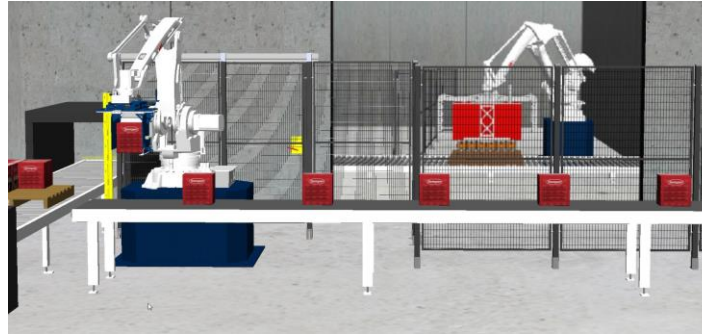


Creating concrete customer value

End-to-end product portfolio



Software for advanced engineering and simulation



Domain expertise



Concrete customer value



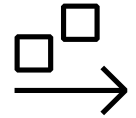
Increased productivity
0.5 seconds to fill a beer bottle



Highest flexibility
Batch size 1

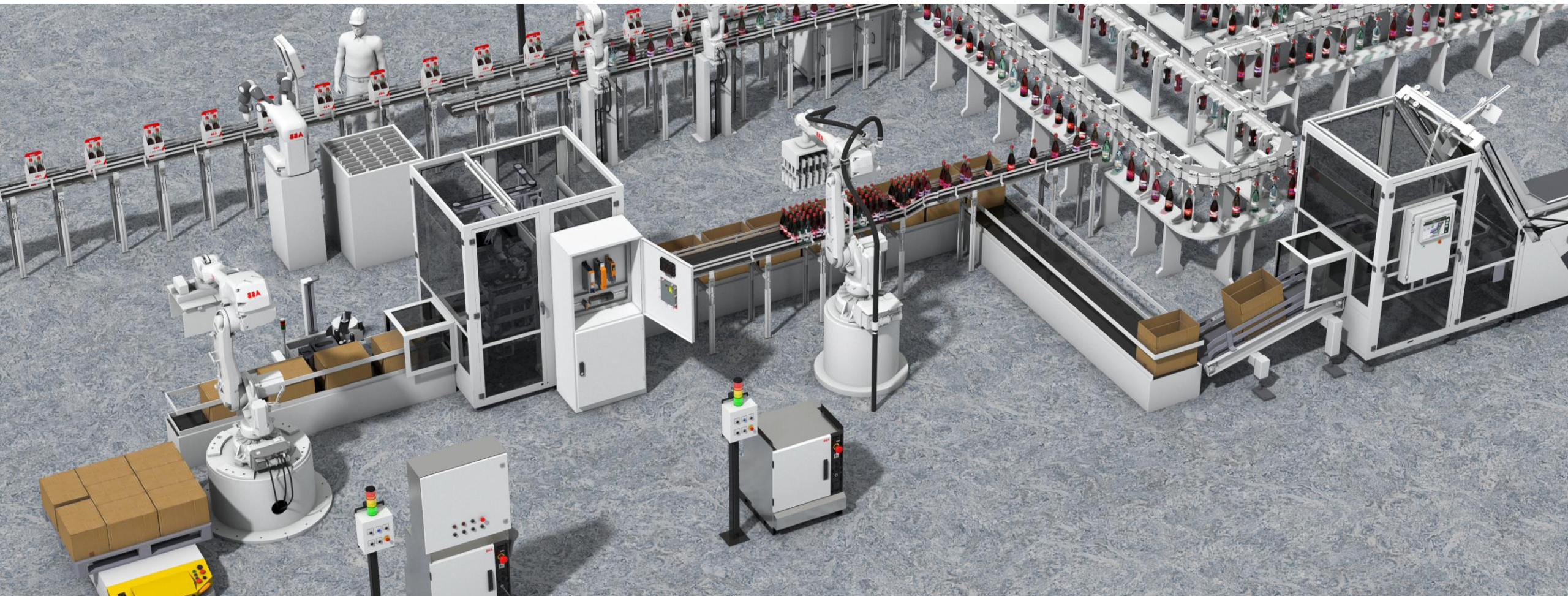


Improved output quality
100% parts inspection



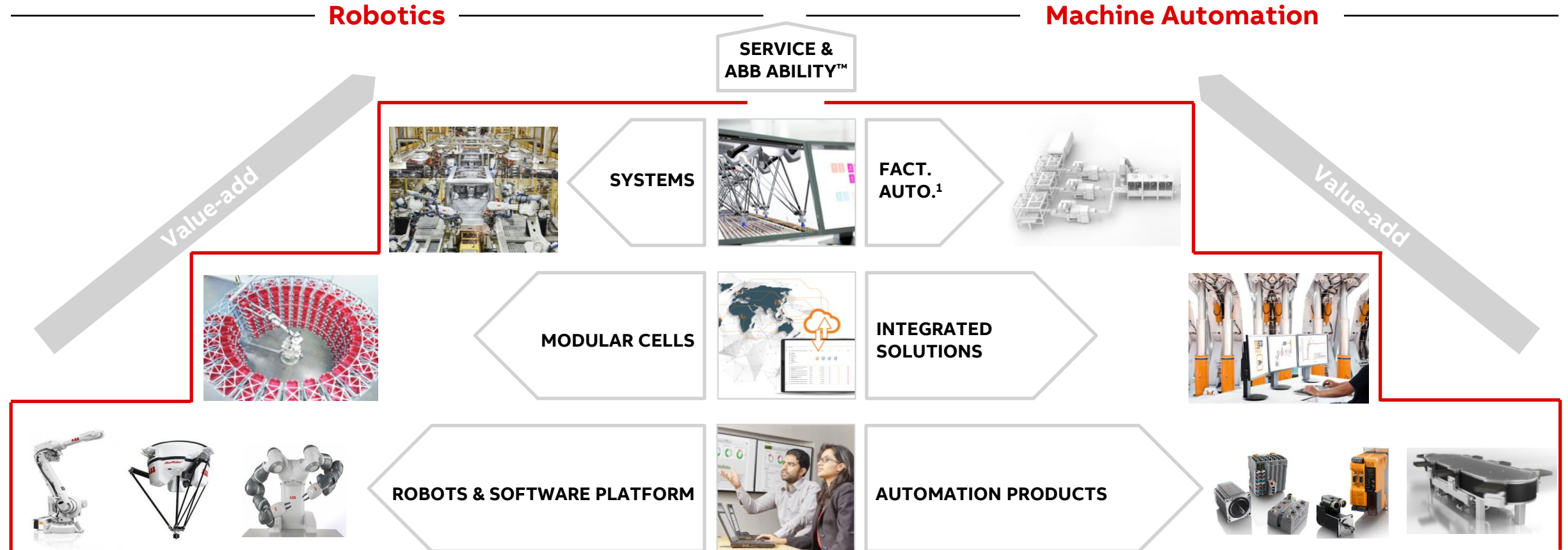
Maximum simplicity
Software development
3x faster

Flexible manufacturing and smart machines for our customers and partners









Our business model

Delivering value at multiple levels

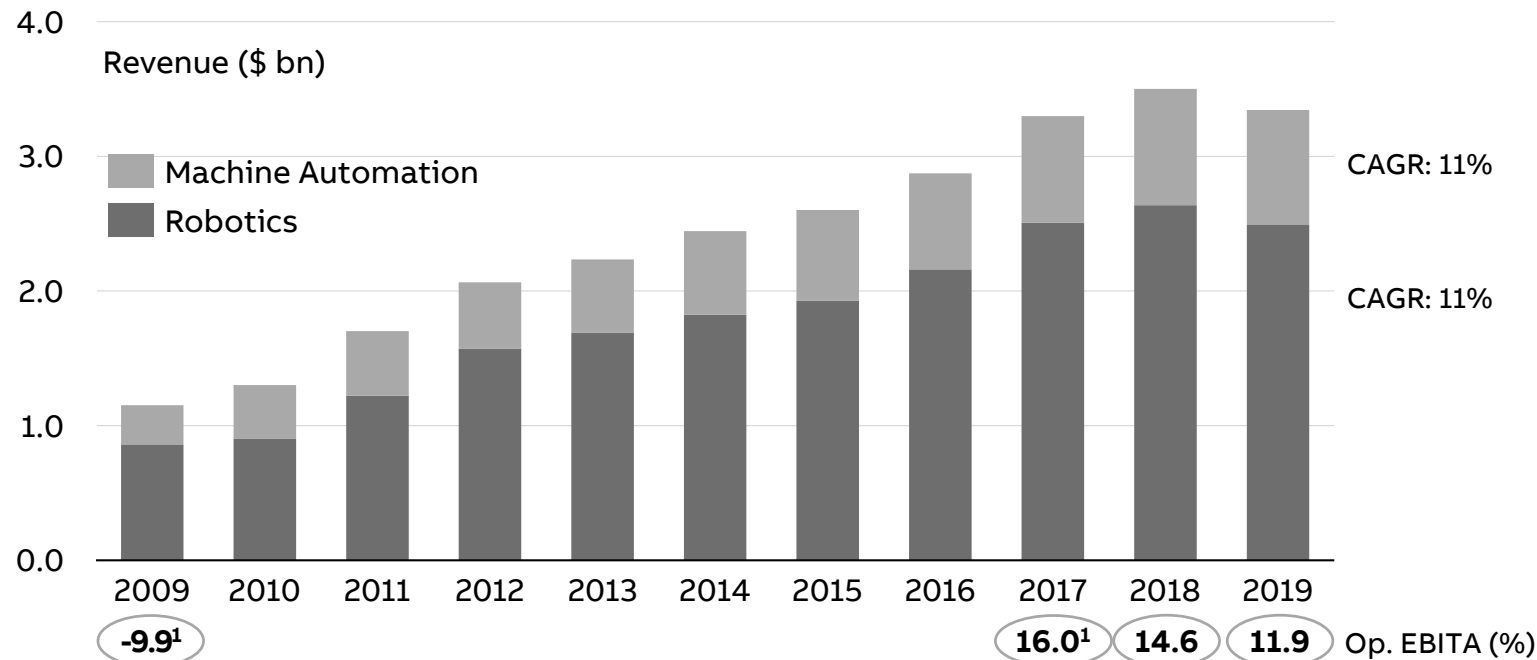


Addressing specific customer segment needs

	Robotics				Mach. Auto.	
	Auto OEMs	Auto Tier 1	Electronics	General Industry	Consumer Segments & Service Robotics	Machine Automation
						
Revenue (\$ mn, 2019) ¹	~950	~400	~150	~750	~250	~850
Number of solution centers	Solution Centers 21	Solution Centers 6	Solution Centers 4	Solution Centers 5	Solution Centers 4	Local engineering
Production and Delivery, Service and Digital, and R&D						

Proven profitable growth

Strong growth at attractive margins



Highlights

Global **#2**

#2 in robotics, **#1** in China

Installed **>400,000** robots

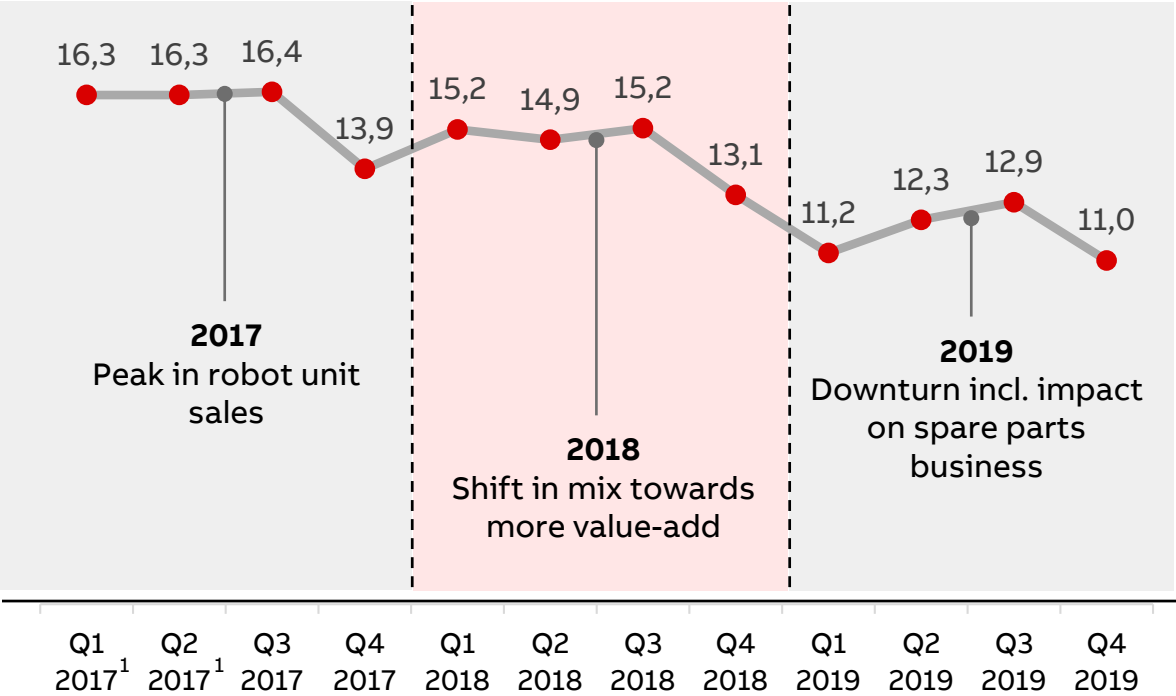
4,000 active OEM customers

~9,000 digitally connected robots

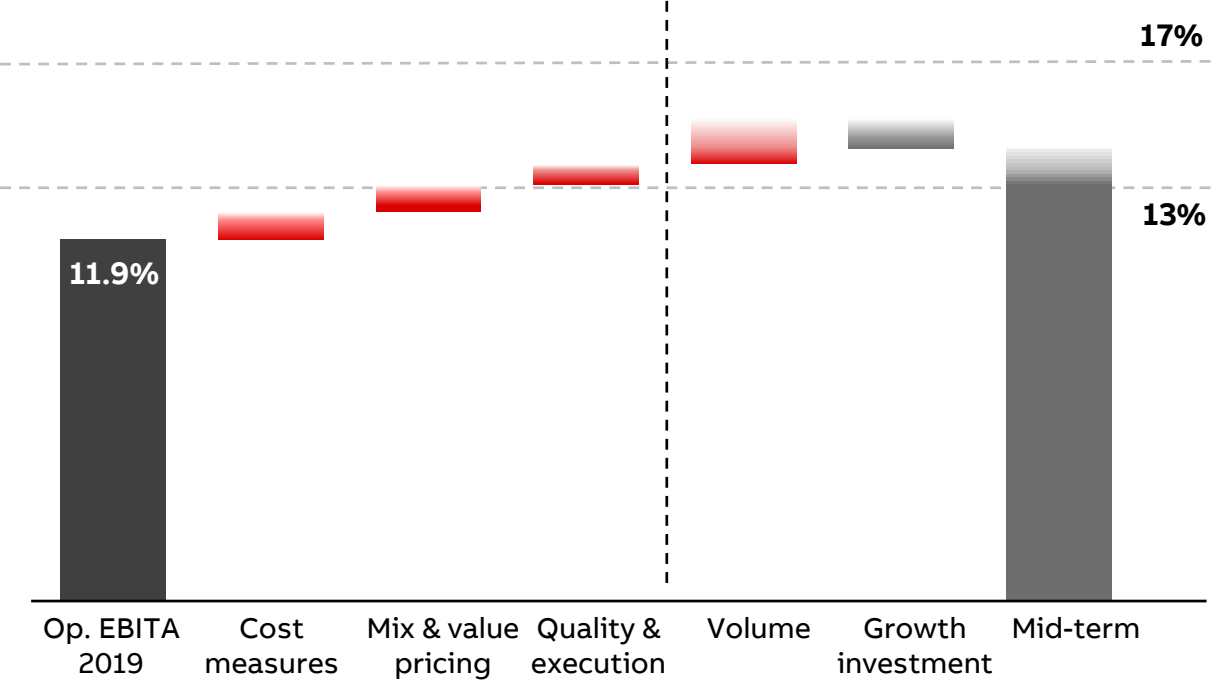
~60,000 users of SW engineering tools

Recent performance and robust mid-term outlook

Resilient performance in a challenging environment



Path to margin corridor



Balanced business leads to resilient performance

Reasons

Strength in high growth markets – #1 in China and India

Diverse end-market exposure

- ~60% revenue outside automotive

Value-add to differentiate

- Products 55%, systems 30%, services 15%

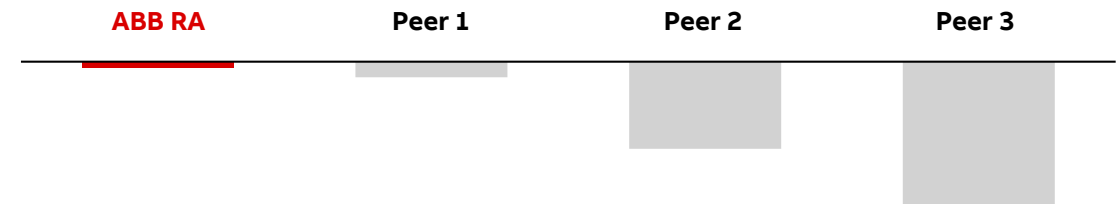
Technology leadership

- Machine Automation: more new customers in 2019 than ever

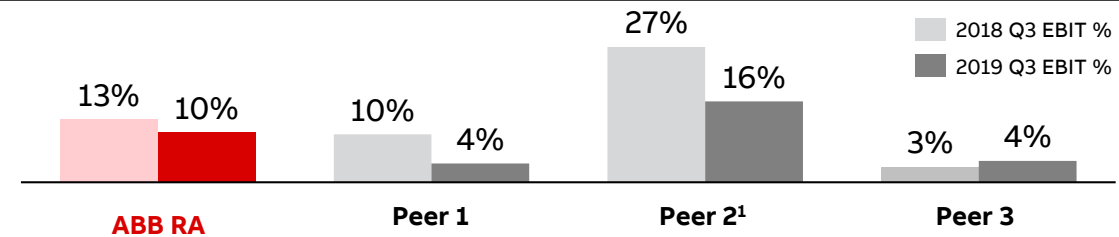
Flexible value chain

Top line

2019 Q3 last 12 months revenue change in \$ year-over-year



Profitability



Well positioned in a challenging environment

ABB Robotics & Discrete Automation

Understanding ABB RA

Attractive market

How we win

Driving profitability

Q&A

Key mega-trends creating demand for robotics and automation

Individualized consumer

1/4 Americans have bought personalized products¹

Labor shortage

A quarter of China's population will be

60+ by 2030²

Digitalization

Connected factory data / day =

160 million books³

Uncertainty

40% of US companies in China consider / have relocated outside China⁴

Value propositions



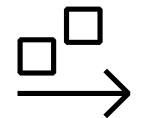
Productivity



Flexibility



Quality



Simplicity

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

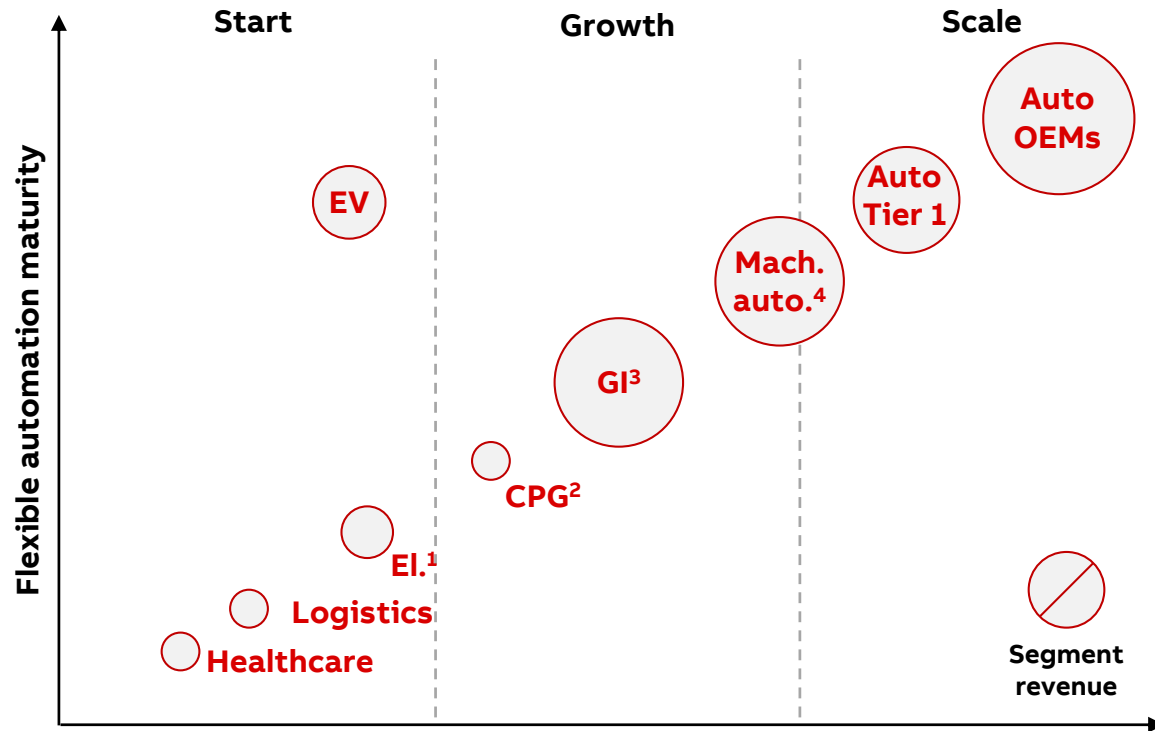
² State Council on Aging

³ Intel

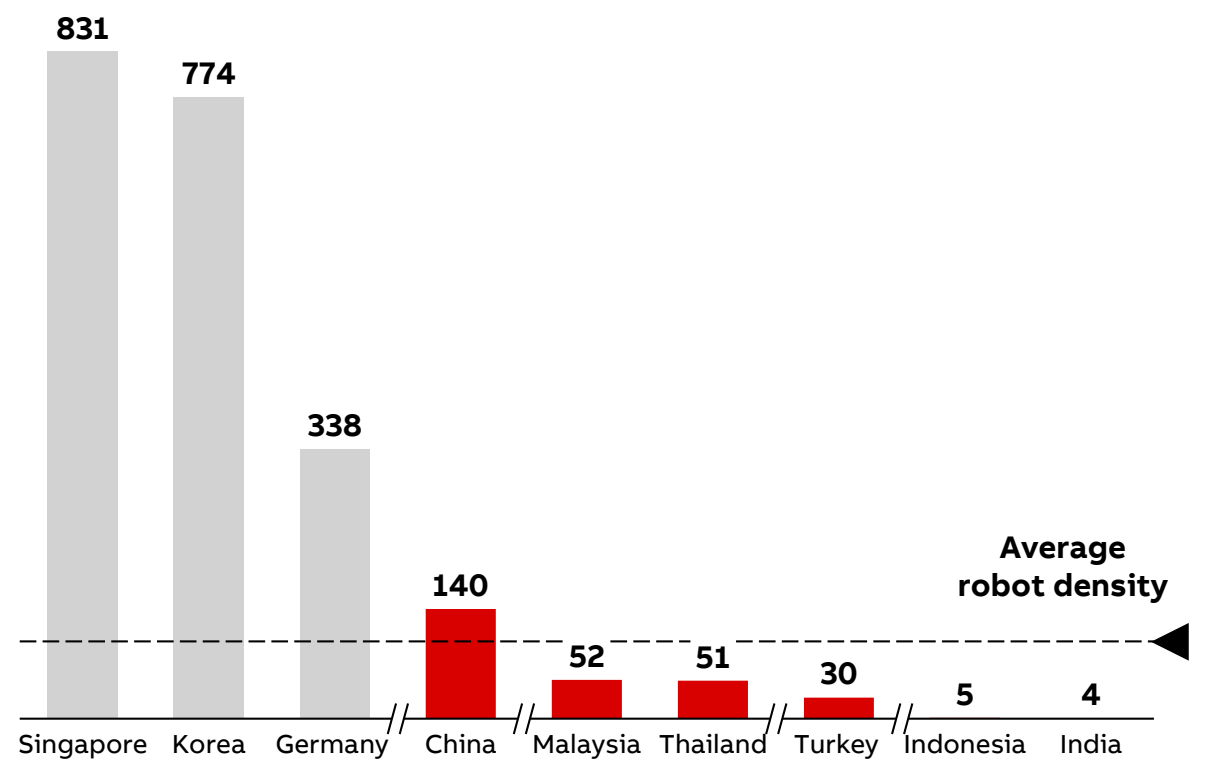
⁴ AmCham Shanghai and AmCham China joint survey

Significant growth potential

Customer segment perspective



Regional perspective (robot density⁵)



Attractive mid to long-term market growth at ~2x GDP

Global addressable market¹ in \$ bn

Business exposure % of revenues

Market growth drivers

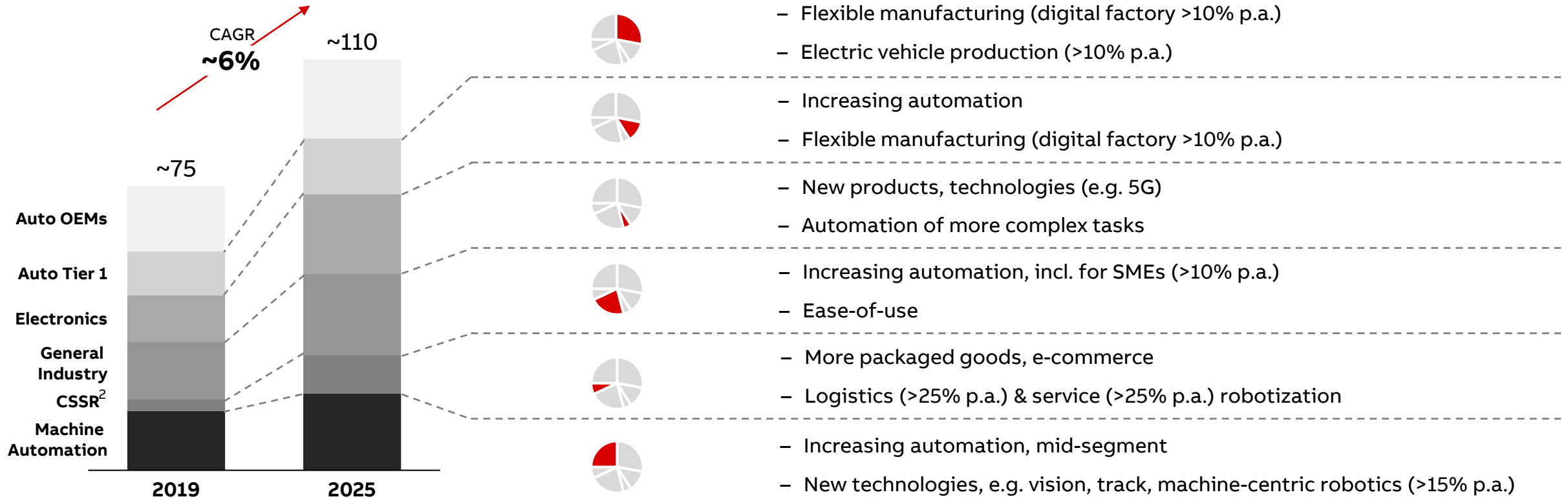


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Understanding ABB RA

Attractive market

How we win

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Q&A

Strongly positioned to benefit from market trends

- ▶ **Broadest portfolio amongst peers**
- ▶ **Innovation strength**
- ▶ **A true global player**
- ▶ **Applied domain expertise**



Broad and strong portfolio for our customers

	Robotics portfolio				Automation portfolio			
	Robot products	Robot cells	Engineered solutions	Service	Mach. cent. robotics ¹	PLC/IPC ²	Servo motion	Track system
ABB								
KUKA								
FANUC								
YASKAWA								
UNIVERSAL ROBOTS								
SIEMENS <i>Ingenuity for life</i>								
Rockwell Automation								
Schneider Electric								
BECKHOFF								

Note: major offering shown
¹Mach. cent. robotics: machine-centric robotics
²IPC: Industrial PC



Innovation strength

Portfolio and segment milestones

Phase 1: the start

Automotive



IRB6



Articulated

Phase 2: expansion

Gen. Ind., Consumer, Electronics



Delta



Engineering tools

Phase 3: B&R acquisition

Machine Automation



PLC, Servo motion

Phase 4: new growth areas

Healthcare, Retail, Logistics



Collaborative robots



Machine-centric robotics

1970

2020+

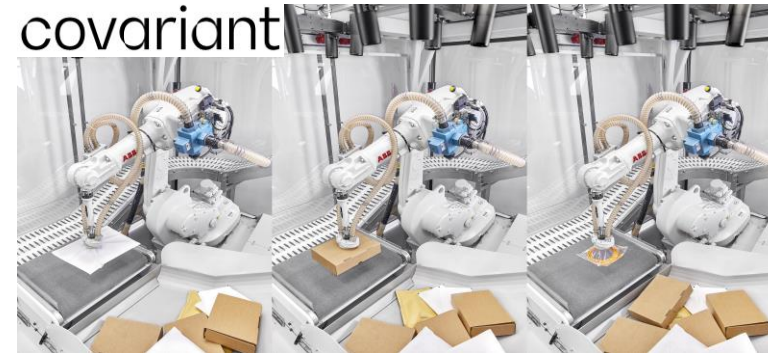
Innovating in new areas

Building on new technologies

Collaborative robotics



Software: AI and connected services

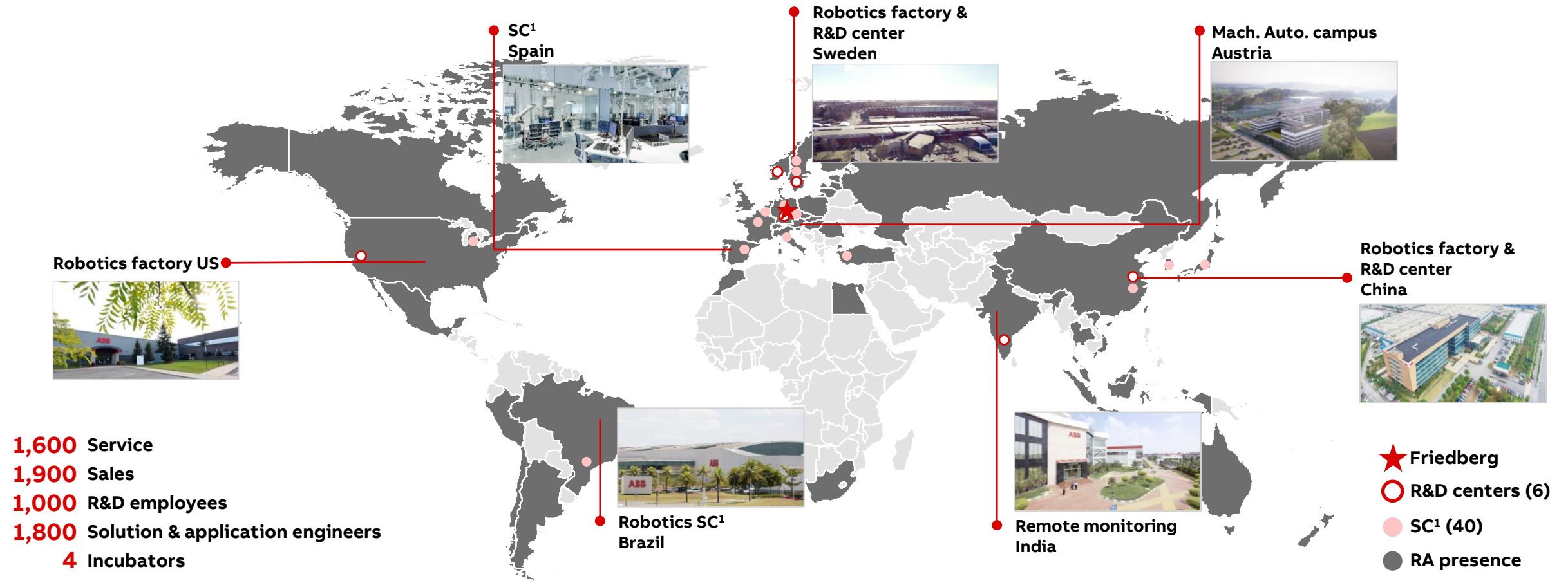


Mobile robots









A global player – close to customers locally

Across the value chain



Applied domain expertise

	Robotics				Mach. Auto.	
	Auto OEMs	Auto Tier 1	Electronics	General Industry	Consumer Segments & Service Robotics	Machine Automation
						
Revenue (\$ mn, 2019) ¹	~ 950	~ 400	~150	~ 750	~ 250	~ 850
Solution Centers	<ul style="list-style-type: none">– Body-in-White– Powertrain– Paint– FTA²– Press automation– Automotive products	<ul style="list-style-type: none">– Welding and Cutting	<ul style="list-style-type: none">– Assembly and Testing	<ul style="list-style-type: none">– Handling and Machining– General industry paint	<ul style="list-style-type: none">– Sorting, Picking, Packing and Palletizing	<ul style="list-style-type: none">– Integrated automation– Machine-centric robotics– Track technology

Three growth drivers

Our customer value propositions

Productivity



Flexibility



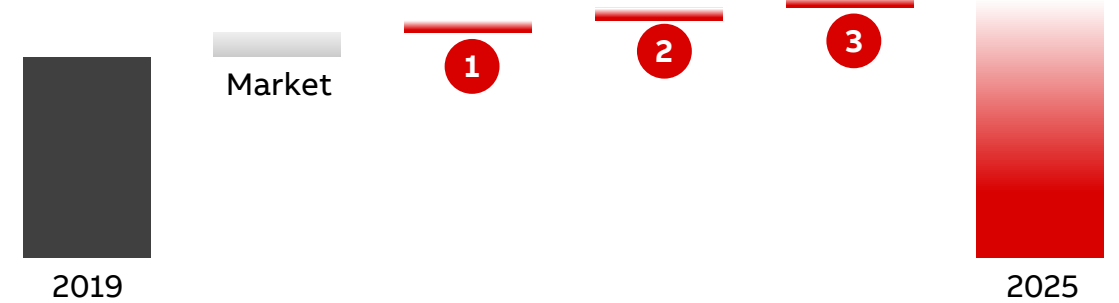
Quality



Simplicity



Three growth drivers

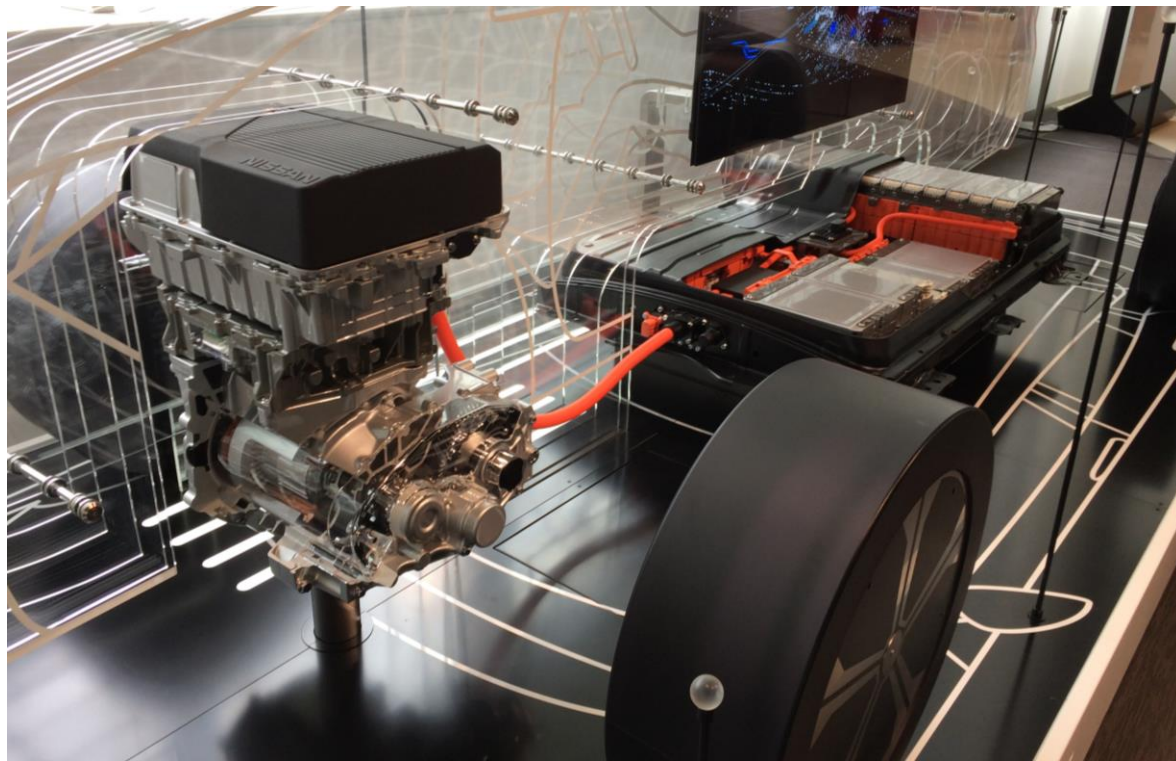


- 1 Accelerating in existing segments
- 2 Driving new automation solutions
- 3 Leveraging existing expertise in new segments

Accelerating in existing segments

1

Example: electric vehicle manufacturing



Example: flexible, scalable manufacturing solutions



Driving new automation solutions

2

Example: flexible track technology



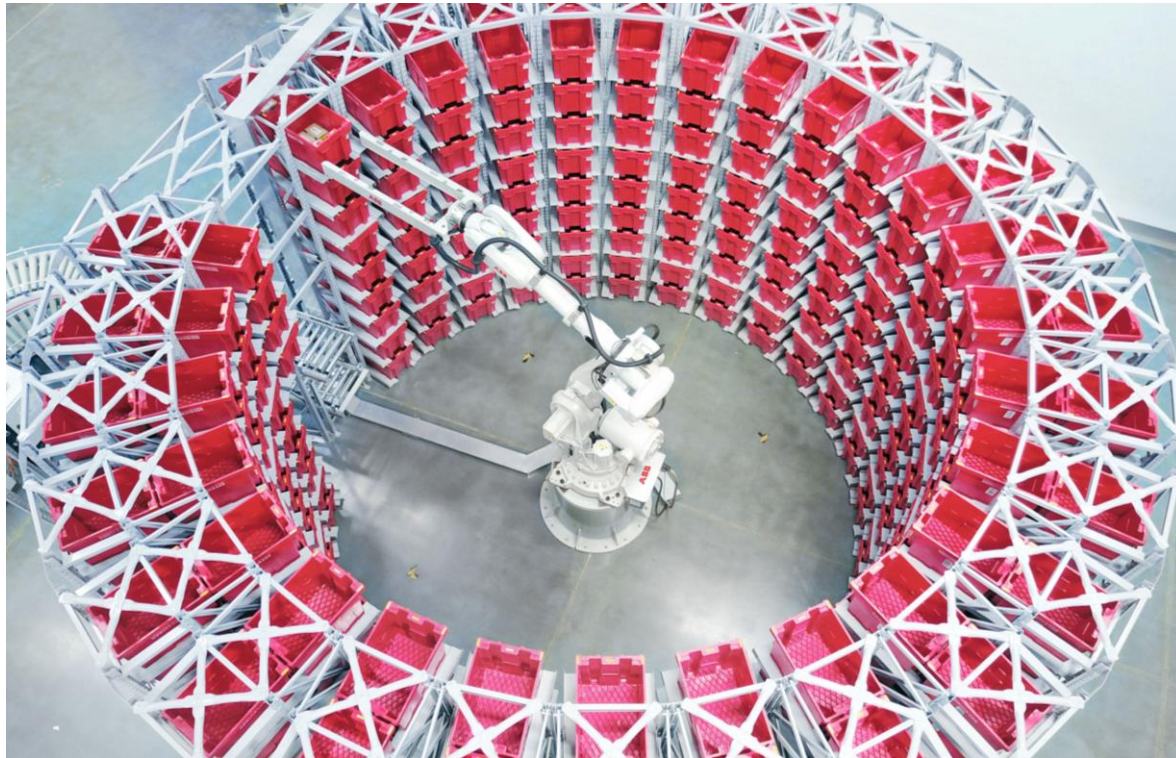
Example: machine-centric robotics



Leveraging existing expertise in new segments

3

Example: robotized warehouse automation









Example: robotics in healthcare



Customer segment strategic priorities

Robotics

Mach. Auto.

	Auto OEMs	Auto Tier 1	Electronics	General Industry	Consumer Segments & Service Robotics	Machine Automation
						
1 Accelerating in existing segments	★★	★★	★★	★	★	★★★
2 New automation solutions	★★	★	★★	★★	★★★	★★
3 New segments		★	★	★★	★★★	★
Strategic priorities	Account penetration	Account penetration	Account penetration	Channel expansion	Logistics expansion	Growth in Americas, Asia
	Solutions for EV	Tier-specific solutions	New products and solutions	Cobots, ease-of-use	Healthcare entry	New technologies (vision, track, MCR ¹)
	Flexible, digital factory automation solutions					

Global eco-system accelerating innovation



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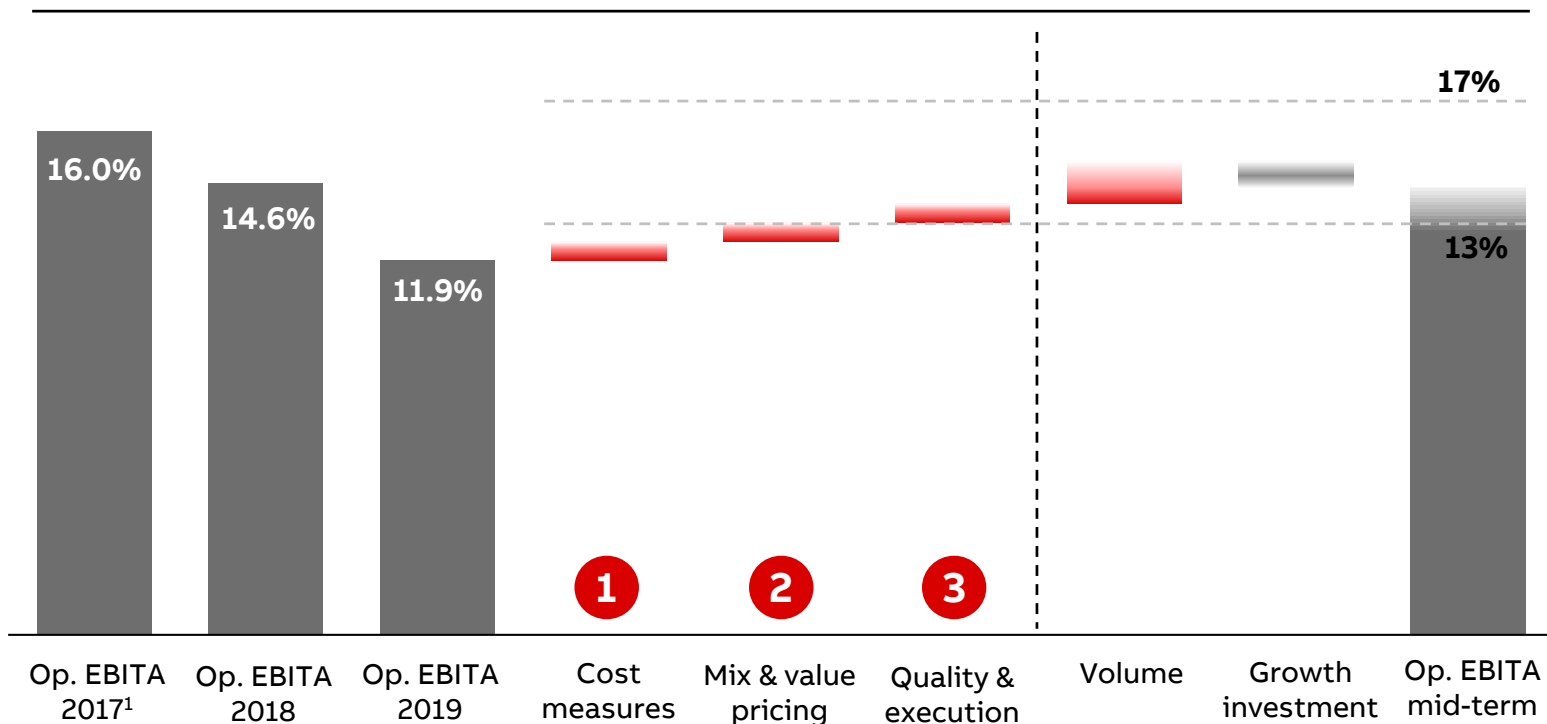
How we win

Driving profitability

Q&A

Path to margin corridor

Mid-term outlook



Actions to improve

- 1 Cost measures**
Execute cost measure plans without compromising mid-term competitiveness
- 2 Mix & value pricing**
Achieve balanced mix and improve value-based pricing
- 3 Quality & execution**
Project execution improvement, driving quality and customer experience culture

ABB Operating System (ABB-OS)

ABB Operating System

Speed

- Empowerment: faster decision-making
- Shared service centers report to business

Simplification

- Streamlined reporting and management structures
- Reduction of legal entities

Accountability

- Dedicated KPI's for performance and value creation
- Directly owned costs vs. allocated costs

Measuring continuous performance improvement

KPIs

SELECTION

1 Cost measures



Productivity – revenue/head



**Design-to-delivery
cost/robot**



Footprint consolidation



ABB-OS savings

2 Mix & value pricing



Number of robots/year



Service revenue %



Gross margin

3 Quality & execution



Speed of resolution



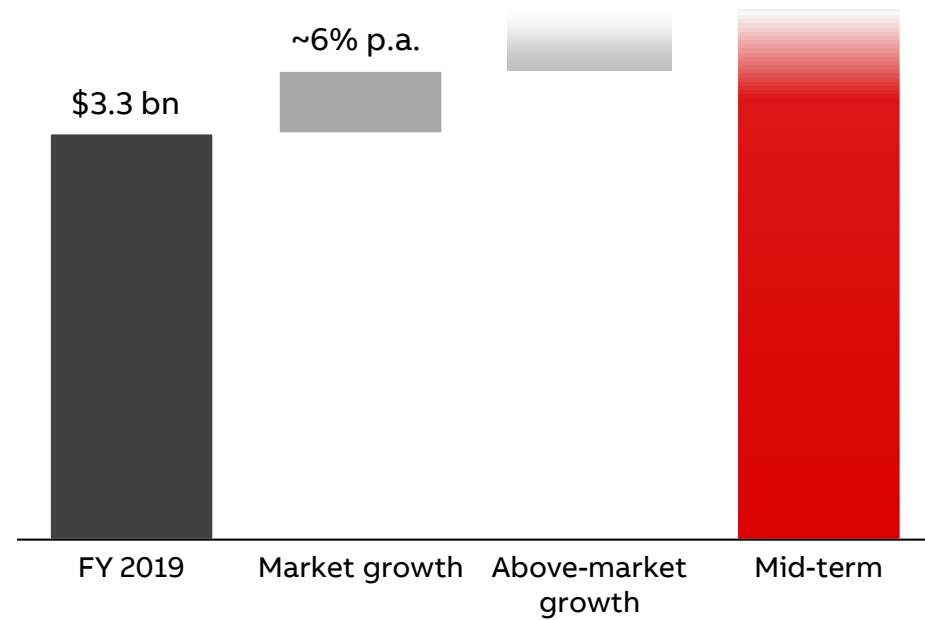
Project execution



Customer sentiment (NPS¹)

Driving above-market growth

Mid-term revenue development

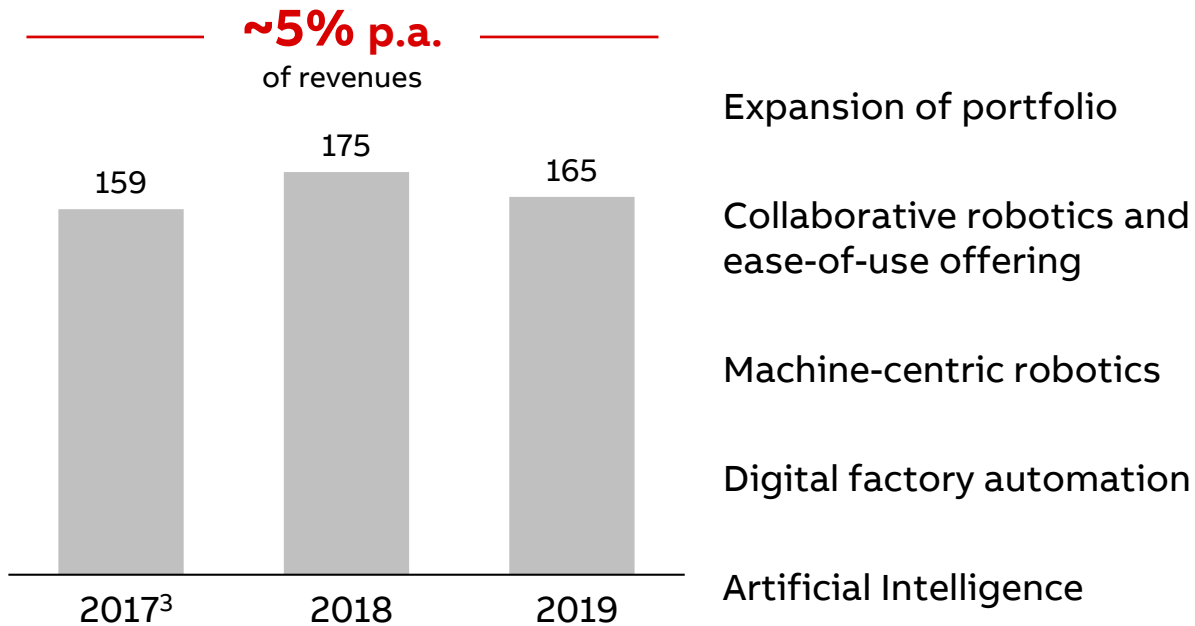


Sources of enhanced growth

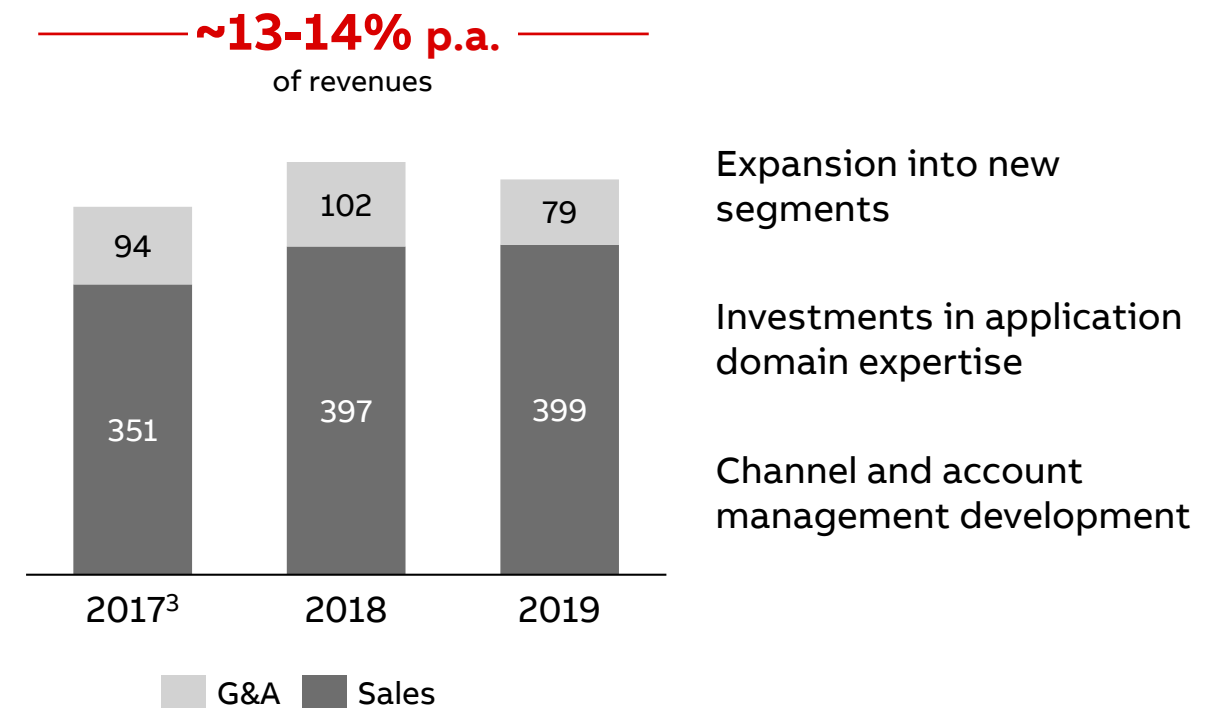
- Extend full portfolio to existing customers
- Accelerating expansion in new markets and segments
- Differentiated and scalable customer solutions
- Digital services on ABB Ability™
- Investing in sales and execution

Focused investment in R&D and sales

R&D investment (\$ mn)¹

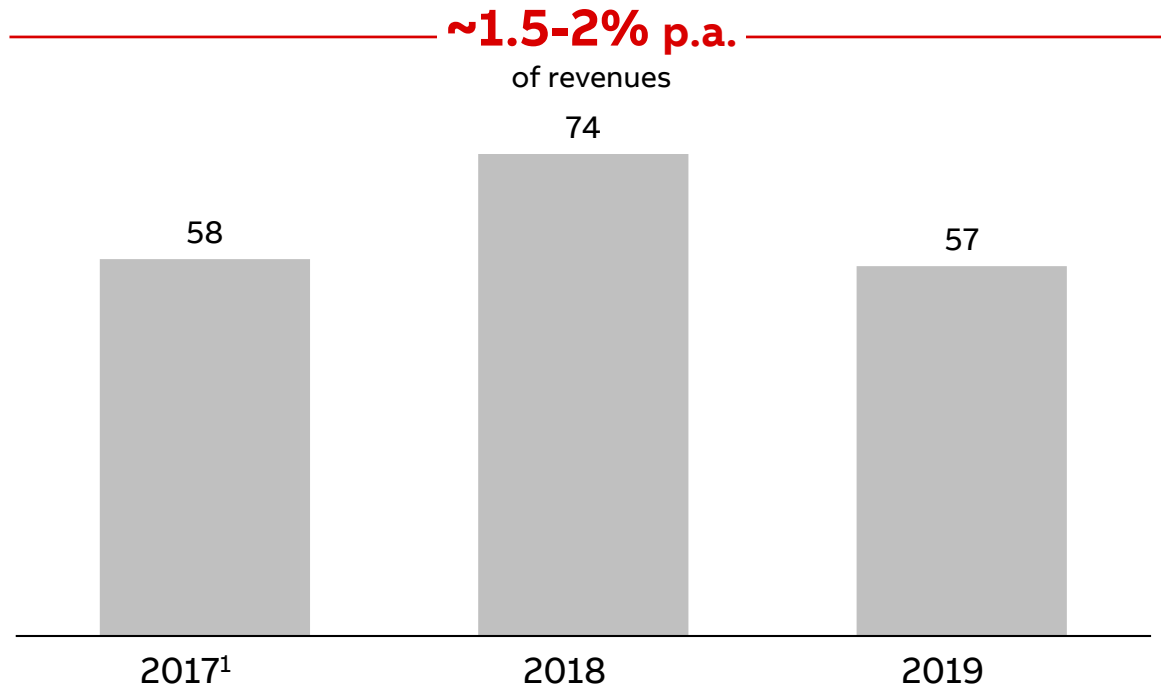


SG&A (\$ mn)²



Managing growth investment

CAPEX investment (\$ mn)



Major CAPEX investments



CFO priorities

Operational improvements



Continued cost measures without compromising growth
Value based pricing, quality and project execution

Profitable growth



Above-market growth supported by new customer-oriented organization
Driving balanced mix (products and services)

Focused investment



R&D, digital, CAPEX investment to support long-term growth
Improving cash and net working capital efficiency

Operational EBITA margin corridor of 13%–17% mid-term

In summary

1 Attractive market

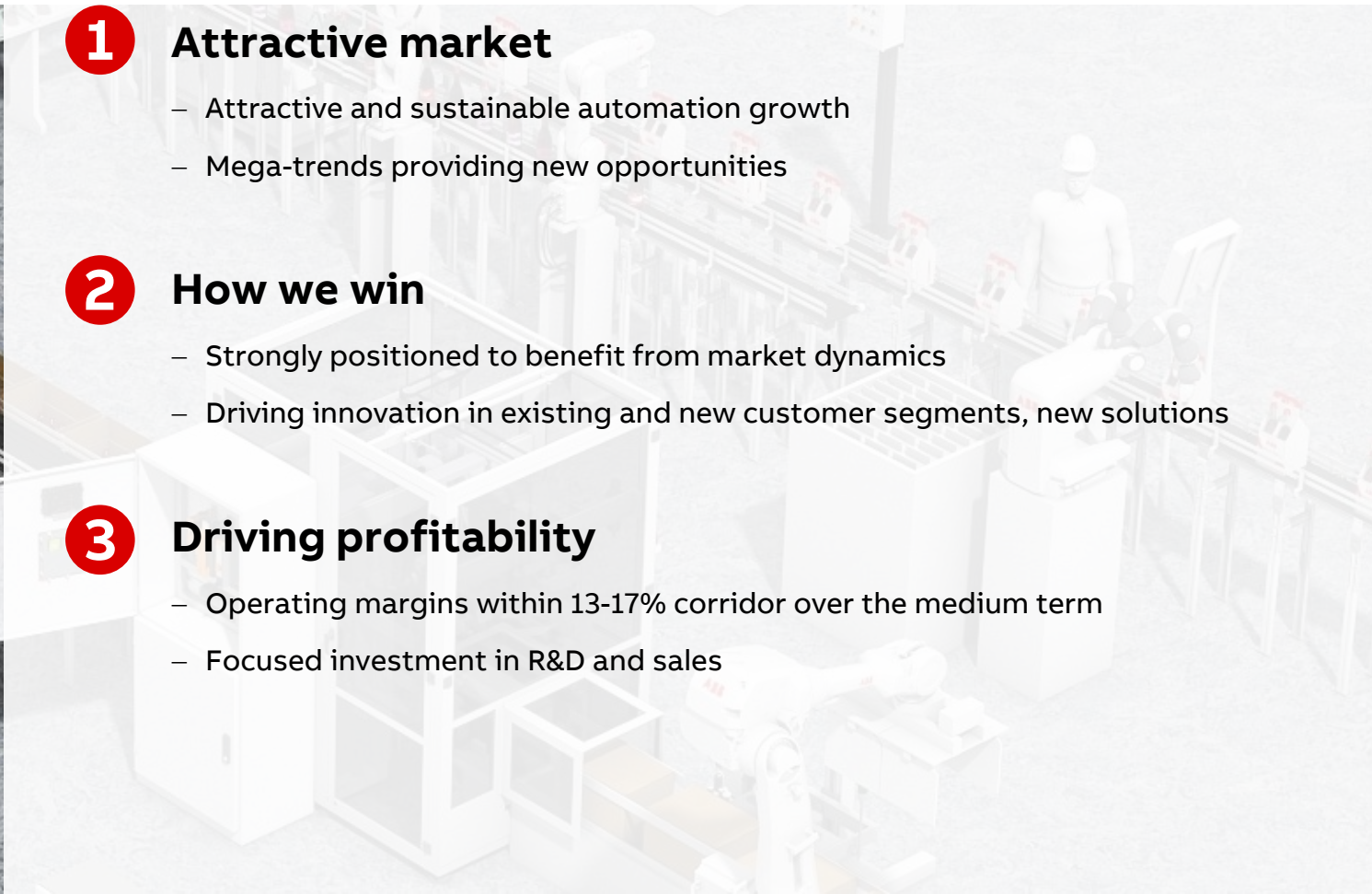
- Attractive and sustainable automation growth
- Mega-trends providing new opportunities

2 How we win

- Strongly positioned to benefit from market dynamics
- Driving innovation in existing and new customer segments, new solutions

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