



NOVEMBER 19, 2020

Industrial Automation Capital Markets Day 2020

Peter Terwiesch, President of Industrial Automation
Brandon B. Spencer, President of IA Energy Industries division

Agenda

01. Industrial Automation

02. IA Energy Industries division

03. Q&A session



Industrial Automation commitment to create value



Extend **Leadership** in automation solutions
DCS leadership, domain expertise, industry-specific products



Serve customers' needs **throughout asset lifecycle**
Safety, project execution, productivity improvement, services



Continue the strong **digital** momentum
ABB Ability™ platform, digital value propositions, collaborative operations



Support customers to become **more sustainable**
Energy transition, energy efficiency, positive environmental impact



Drive **divisions' performance** and maintain **high ROCE**
Revenue quality, portfolio management, decentralized operating model

Op. EBITA ~14%

Increase Op. EBITA margin
by 200 bps by 2023

ROCE 25-30%

Attractive ROCE across
market cycles

Quality of revenues

Profitability before growth,
resilience

A leader in integrated automation solutions in process and hybrid industries



Safety



Productivity



Sustainability



Digitalization

Energy



Power
Generation



O&G
Upstream



O&G
Midstream



O&G
Refining



Hydro
generation



Solar



Wind



Hydrogen



Waste
to energy



Battery
production

Industry



Mining &
Minerals



Cement



Metals



Pulp &
Paper



Chemical



Food &
Beverage



Pharma-
ceuticals

Transportation & Infrastructure



Marine
vessels



Ports



Water &
Wastewater



Data
centers

The 5 Industrial Automation divisions

Energy Industries



Revenues: \$1,750-2,250 mn

#1 Conv. Power
#3-5 in OGC¹



Integrated solutions, control platforms, safety, service & digital solutions

Process Industries



Revenues: \$1,250-1,750 mn

#1-2 Mining
#1 Pulp & Paper



Control platforms, mine hoists, Gearless Mill Drives, Quality Control Systems, digital

Marine & Ports



Revenues: \$750-1,250 mn

#1 Electrical propulsion
#1 Terminal automation



Azipod propulsion, ship and port electrification & automation, digital

Turbocharging



Revenues: \$750-1,250 mn

#1 Low and medium speed segments



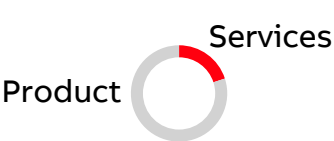
Low, medium and high speed turbochargers, service, digital solutions

Measurement & Analytics



Revenues: \$750-1,250 mn

#1 Analytical, Force
#3-5 Instrumentation

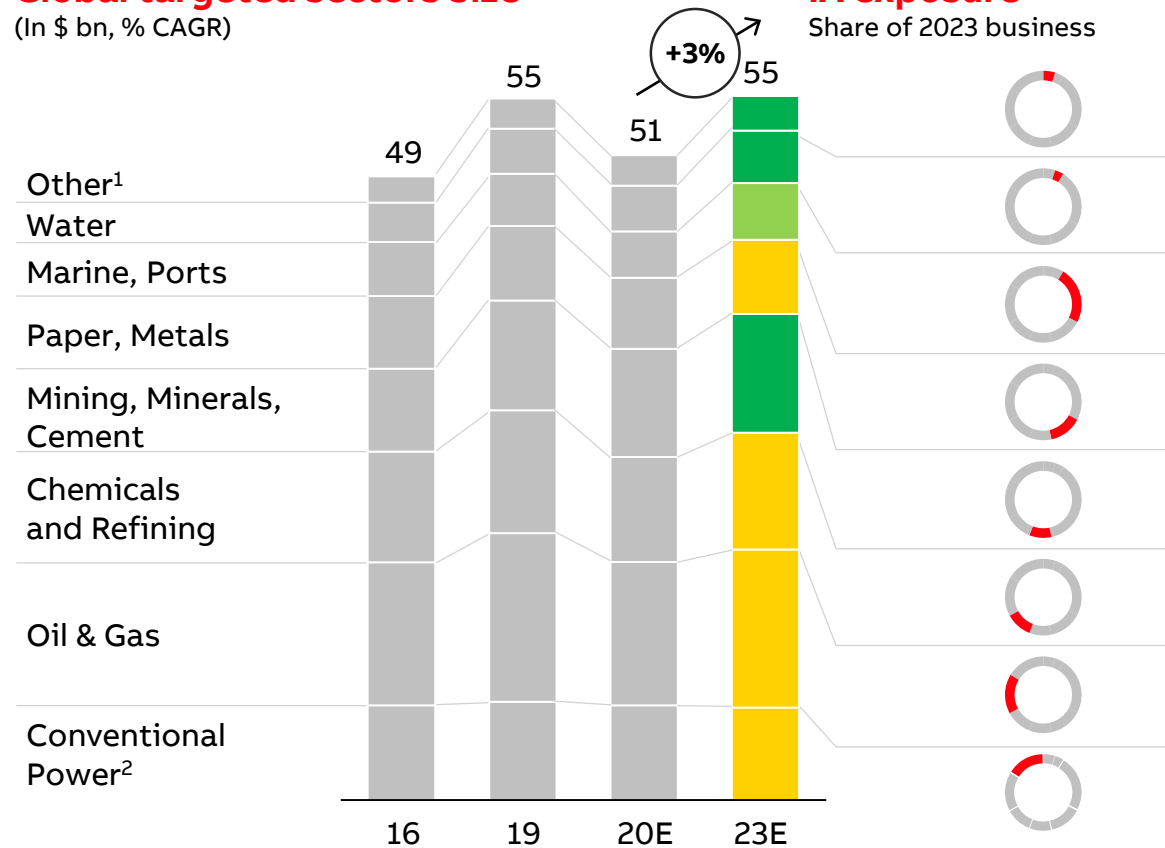


Field instrumentation, flow, analytical and force measurement, service

Well positioned to capture industry trends and customer needs

Global targeted sectors size

(In \$ bn, % CAGR)



IA exposure

Share of 2023 business



Industry trends

Safety as a license to operate

Integrated solutions and advanced services to optimize **productivity**

Sustainable operations and enabling energy transition

Expansion of **digitalization** towards autonomous operations

Customer lifecycle needs

For **capital projects**, reduce ...

- Cost
- Schedule
- Risk

For **operations**, improve ...

- Performance
- Asset life
- Environmental impact

Approx. growth trend through-cycle: Below GDP (Yellow), Inline GDP (Light Green), Above GDP (Dark Green)

Industrial Automation recipe for success

Safe and smart operations

1

Pioneering technology



#1 in DCS
for more than 20
consecutive years

125+ years
in automation

Continuous innovation
Digital

2

Domain expertise

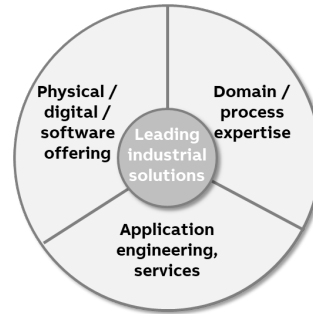


Enabling customers
to realize most complex
projects and run mission
critical, real-time
operations

Strong position in
industry-specific products

3

Solutions-oriented business model



Channel to market for
ABB products

ABB Ability™ digital
solutions

4

Vast global footprint



Largest service footprint

Presence in **100+** countries

24/7 ABB Ability™
Collaborative Operations™

5

Sales after Service, Service after Sales



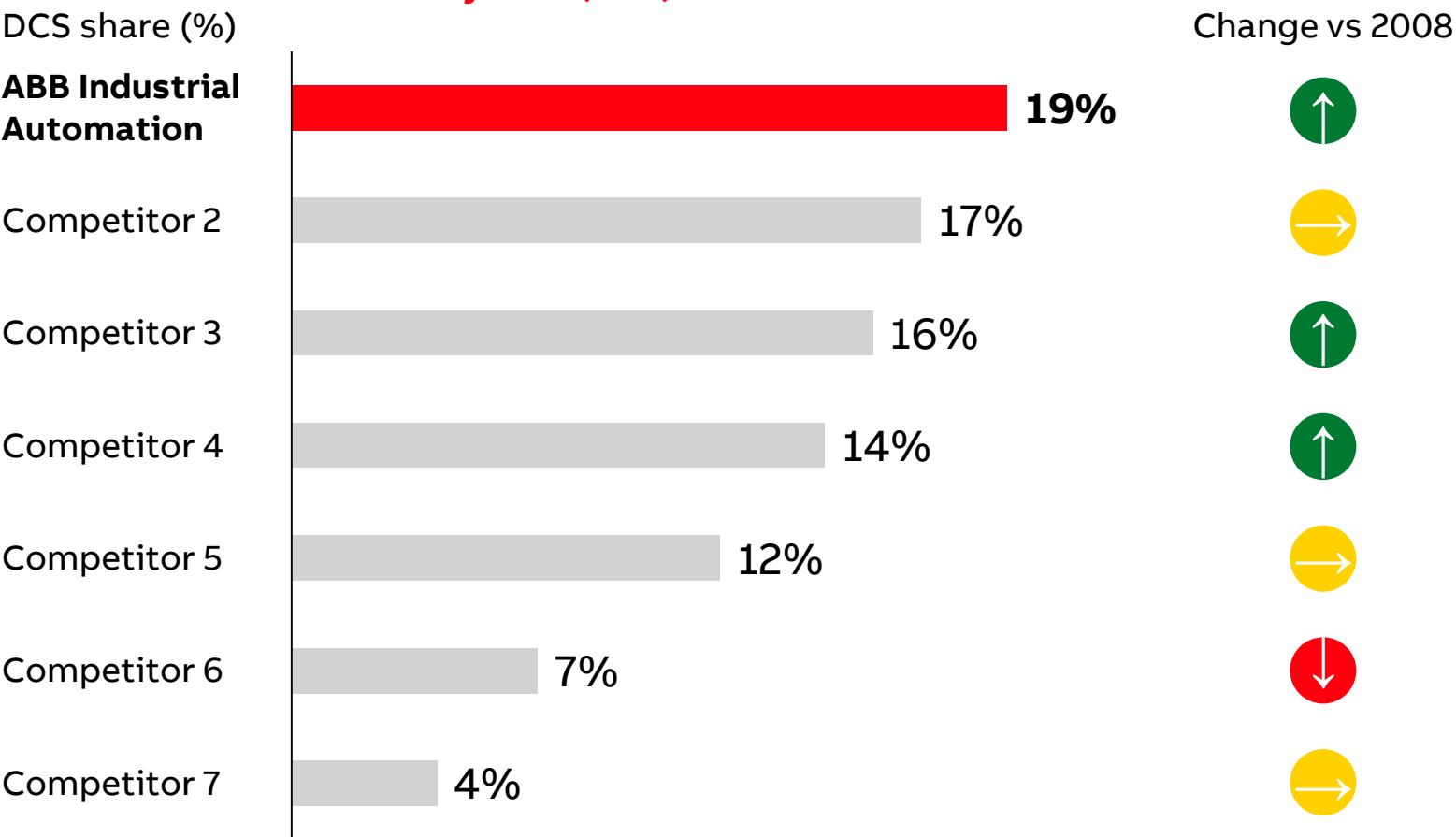
Largest installed base

~40,000
connected systems

~40,000,000
connected devices

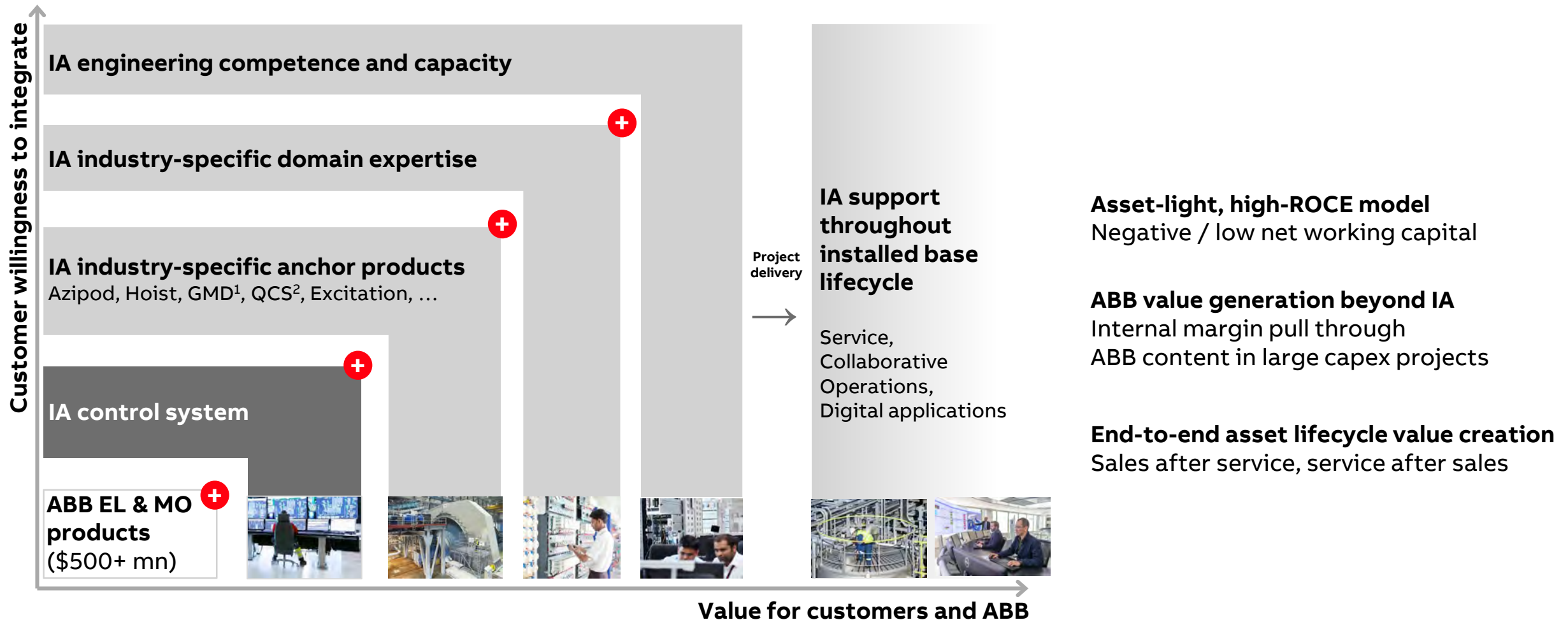
Control system leadership – undisputed #1 for more than 20 consecutive years

Global distributed control system (DCS) sector share



- 1 Evolution without obsolescence
- 2 Scale with industry-specific offering
- 3 DCS at the core of digital offerings

Industrial Automation system integration value for customers and ABB



Industrial Automation 2023 financial ambition

Profitability

~14%

+200 bps increase in Op. EBITA margin vs. 2019

Reach margin corridor:
topline mix and productivity improvements

Return on capital

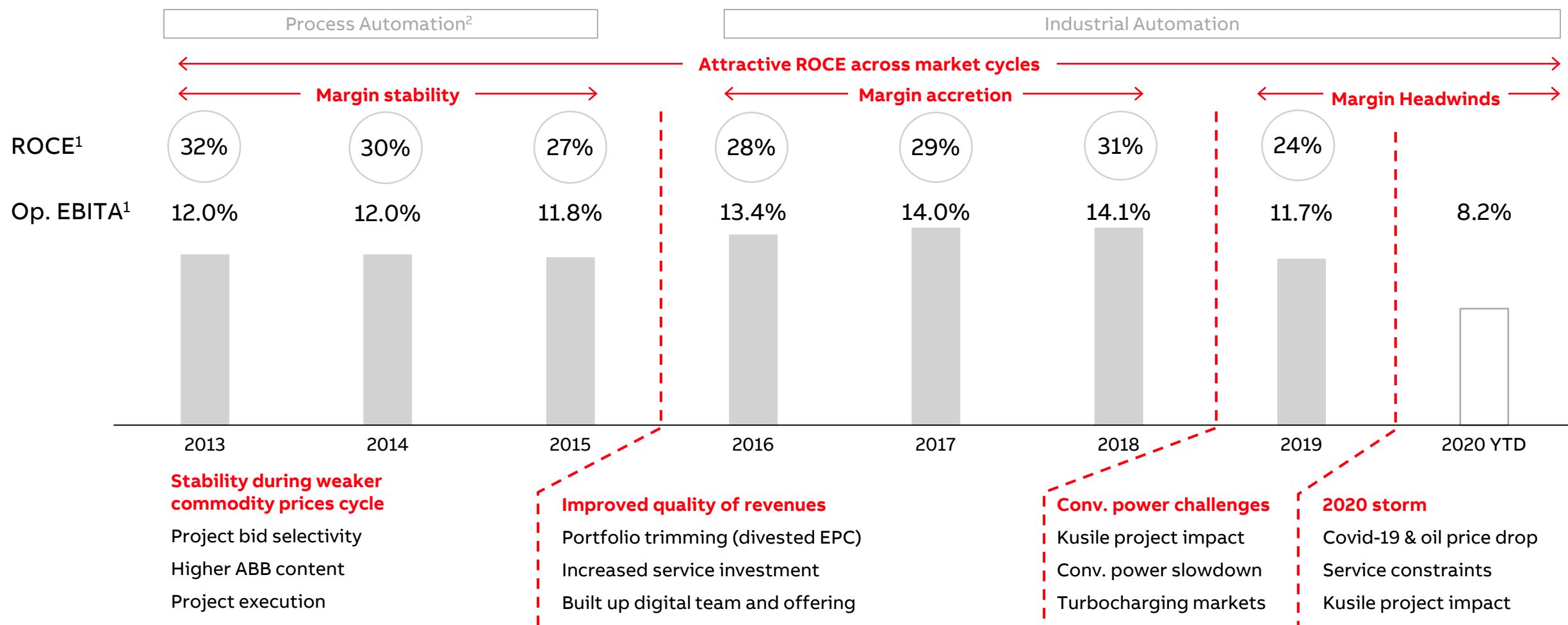
~29%

+500 bps increase vs. 2019

Strengthen highly capital-efficient
business model and attractive ROCE

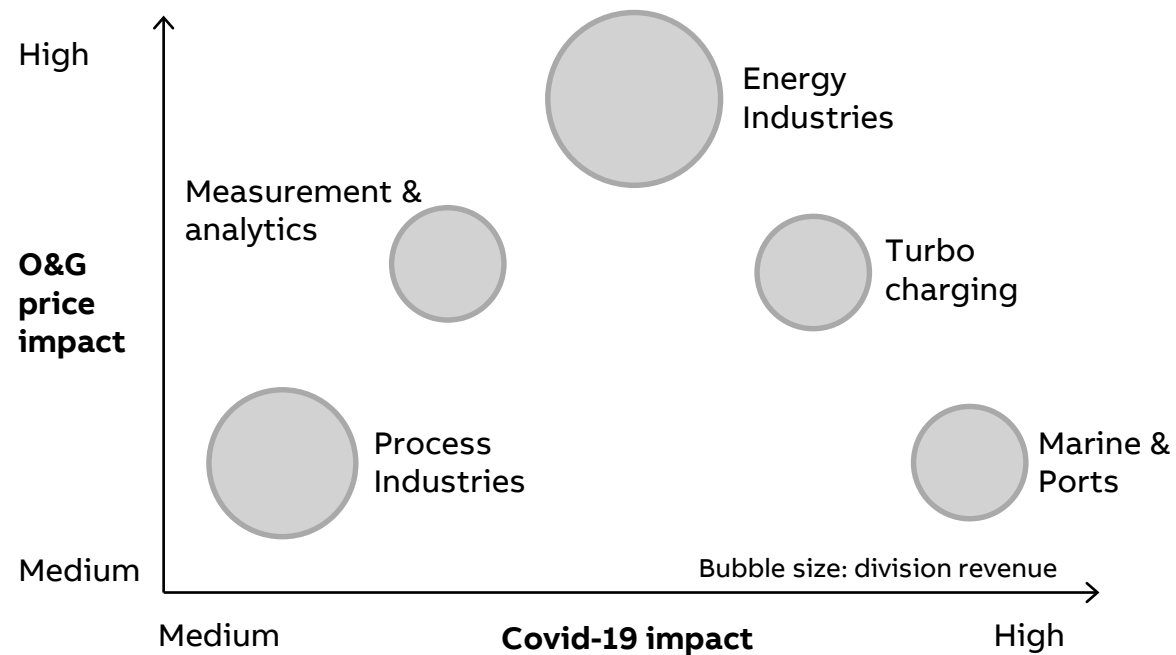
Quality of revenues: profitability before growth

Consistent high ROCE and margin improvement, despite 2019/20 drop



Taking actions to navigate 2020 and to enhance organization efficiency

2020 perfect storm differently impacts IA divisions

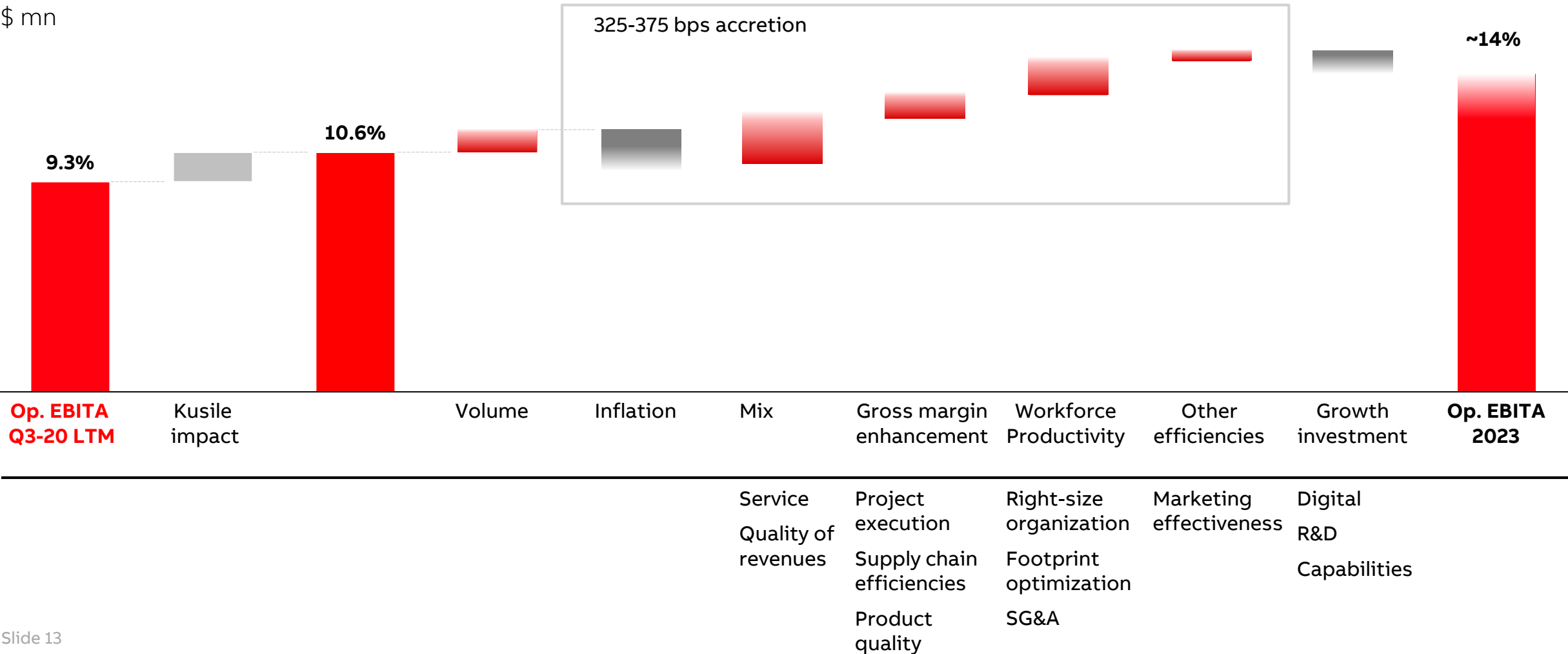


- Service impacted by mobility constraints and by reduced customer operations in several sectors
- Investments in O&G sector scaled back significantly
- Many capital projects postponed due to uncertainty

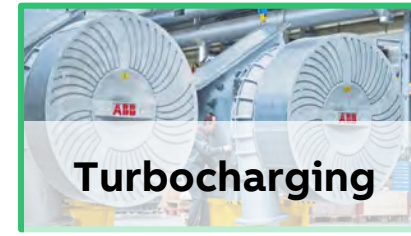
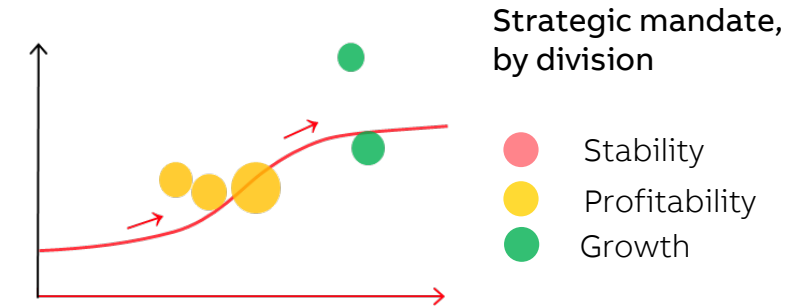
- 1 Keeping people safe and staying close to our customers
- 2 Trimming organization with combination of permanent and temporary adjustments
- 3 Increasing digital interactions with customers

Industrial Automation Operational EBITA bridge

Aim for approx. mid-point of our Op. EBITA margin corridor as from 2023



How each division in Industrial Automation will deliver



Priorities	Energy Industries	Process Industries	Marine & Ports	Turbocharging	Measurement & Analytics
	Enhance service and digital offering	Enhance service differentiation	Pursue orders with high ABB content	Maintain position in core segments	Transform instrumentation
	Increase automation share in targeted areas	Improve sales skills and effectiveness	Optimize operations and value chain	Continue productivity improvements	Optimize value chain and operations footprint
	Implement globally Adaptive Execution™	Optimize operations and value chain	Expand selectively into new segments	Follow targeted growth opportunities	Increase focus on water, environmental, service
Sales force investment	→	→	→	→	→
R&D investment	→	↑	↑	→	↑
Capital intensity	→	↑	→	→	→
Cash Flow	↑	↑	↑	↑	↑

Continue to increase IA quality of revenues by enhancing our portfolio

“Stability” businesses

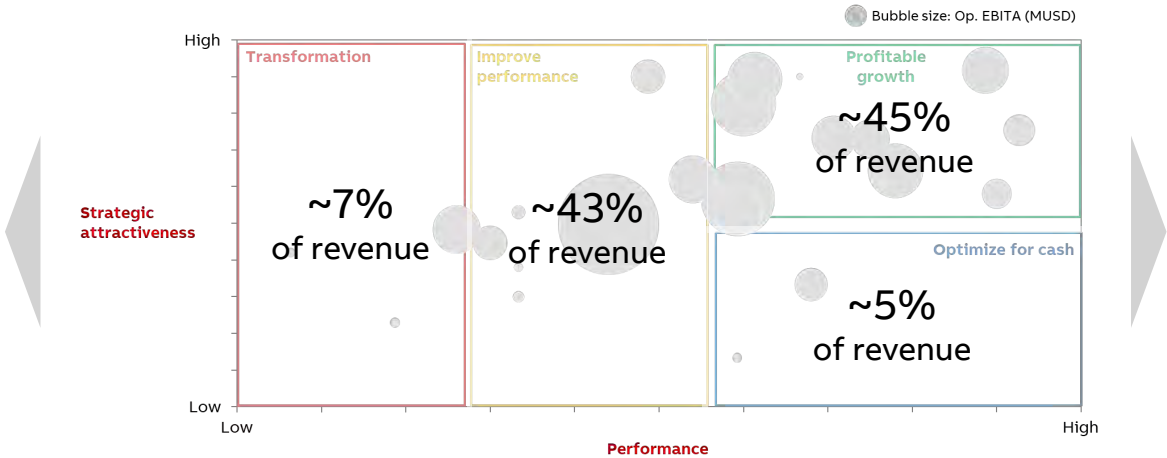
- Instrumentation**
Measurement & Analytics
- Blending**
Energy Industries
- Food & Beverage**
Process Industries
- Less-core sectors**
Across divisions

Transform operations

Strengthen global reach

Grow with channel partners

Resources re-allocation



“Growth” businesses

- Services & Digital**
Across divisions
- Turbocharging**
- Excitation**
Energy Industries
- Electrical propulsion**
Marine & Ports
- Analyzer & Force**
Measurement & Analytics

Active portfolio management: Stability, Profitability, Growth

Digital value propositions – from smart equipment to integrated digital suites

Digital assets | Smart equipment services

For ABB products

Hardware differentiation with software services



Azipod



Flow-meters



Turbocharger

Digital system solutions | Software

Leverage data and domain expertise

Address specific customer needs

Portfolio of 5 value-driver families
(30 key applications and software)



Operational
performance



Asset
integrity



Sustainability
& Safety



Supply chain
optimization



Energy
optimization

Comprehensive and integrated digital suites

Integrate and analyze data from multiple sources from Operations, Information and Engineering (OT/IT/ET)

Moving beyond own installed base and DCS centric view

ABB Ability Genix™

Edgenius™



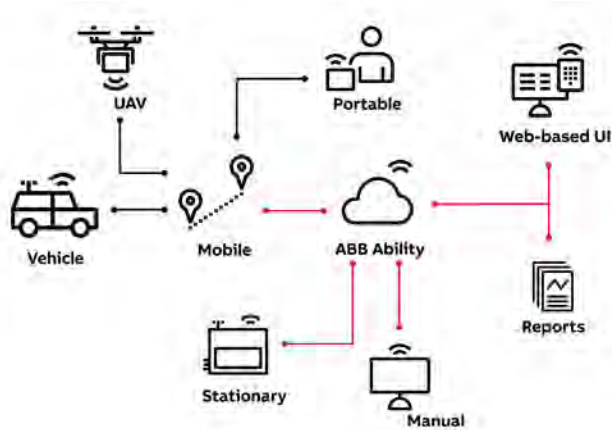
Launched in July 2020

ABB Ability™ Collaborative Operations™

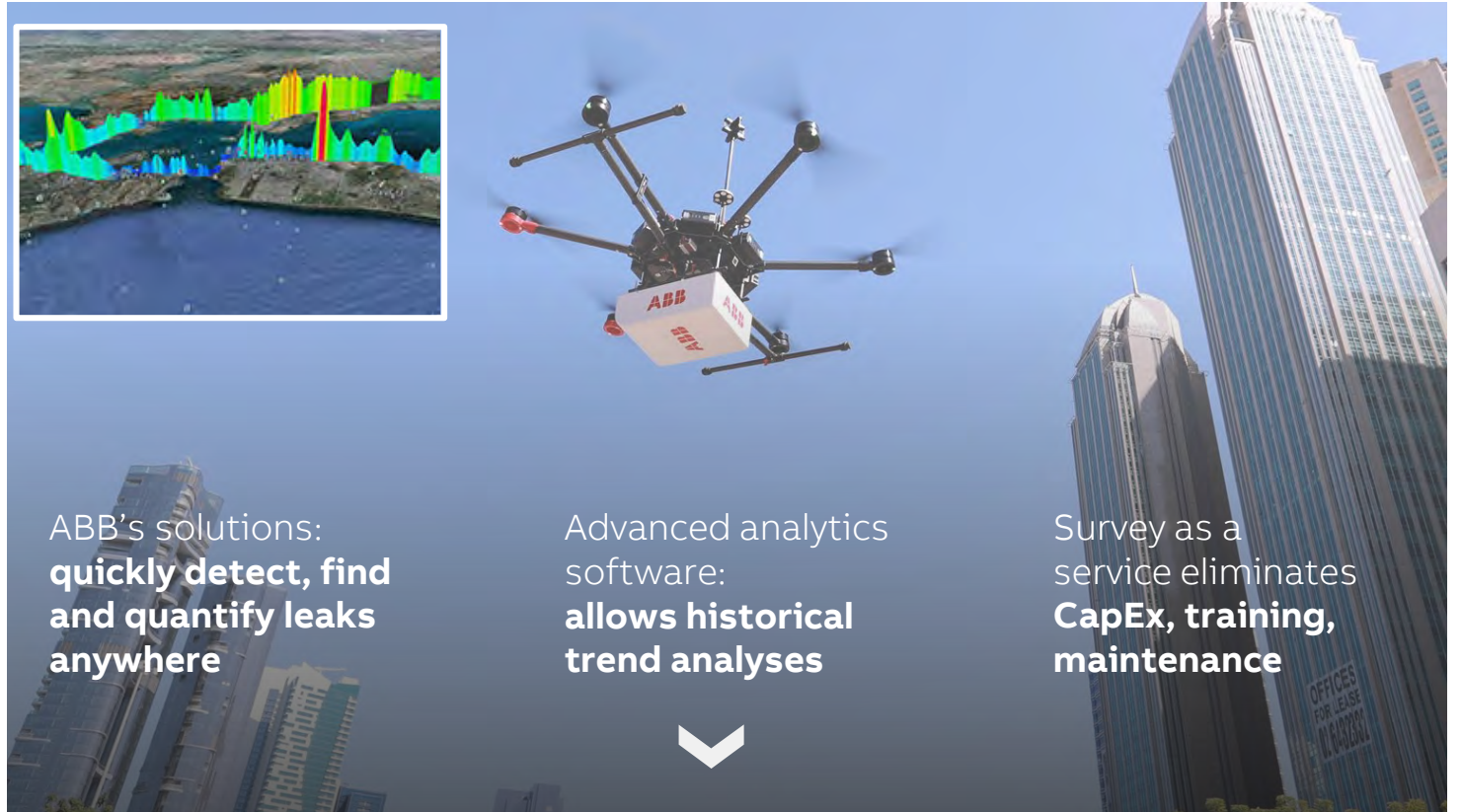
Cybersecurity services

Digital assets and smart equipment services

Measurement & Analytics: ABB Ability™ natural gas leak detection solutions



Slide 17



ABB's solutions:
**quickly detect, find
and quantify leaks
anywhere**

Advanced analytics
software:
**allows historical
trend analyses**

Survey as a
service eliminates
**CapEx, training,
maintenance**

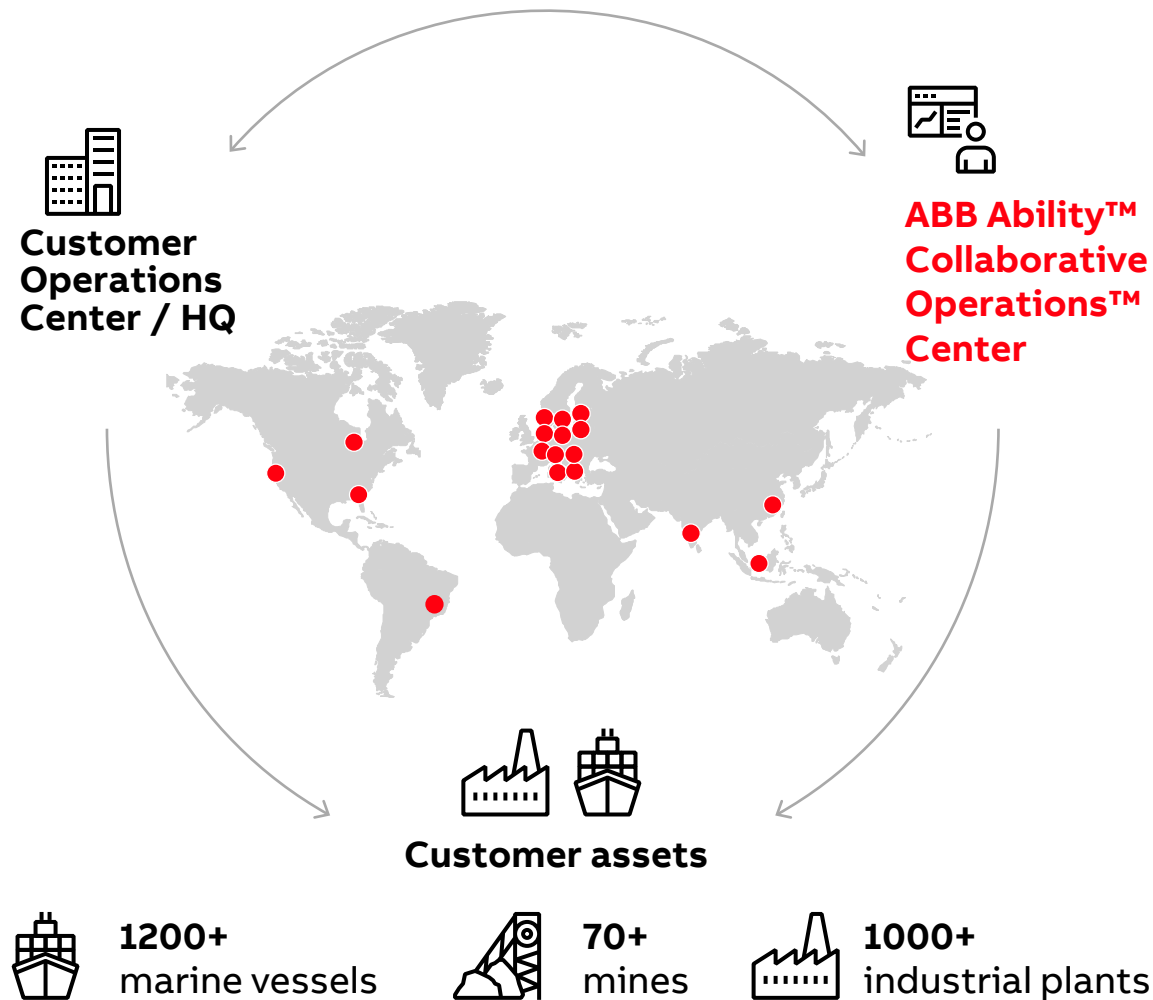
**Faster and easier detection will help reduce fatalities,
environmental damage and material loss**

ABB Ability™ Collaborative Operations™







Transforming the way we work with customers with 24/7 access to ABB experts

For operations improve...

- Safety
- Productivity
- Sustainability



Example of impact

-  Oil & Gas: **-30%** op. expenditures
-  Mining: **\$5 mn** of op. savings p.a.
-  Pulp & Paper: **-55%** maintenance costs
-  Power Generation: **+20%** equipment life
-  Marine: **\$350k** savings per vessel
-  Cement: **~3%** Savings in energy cost

Successful launch of IA comprehensive and integrated digital suites



ABB Ability™ Edgenius Operations Data Manager

A **simplified, scalable** edge solution that releases the **full potential** of industrial data in a cyber-secure way

- Complements and connects to real-time control
- Provides the base for value-added applications
- Enables smart, data-driven decisions



ABB Ability™ Genix Industrial Analytics and AI Suite

A **scalable, smart** analytics and AI suite that helps to **best utilize** data to boost productivity, reduce costs and improve performance

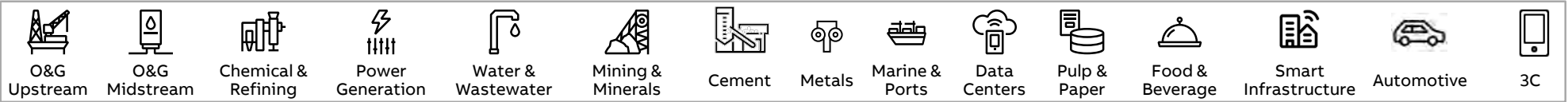
- Speeds up decisions: provides simple, actionable insights
- Get more value from your data
- Predict and optimize asset and plant performance

Supported by ABB Ability™ platform

Secure and scalable industrial IoT platform services including cybersecurity, multi-tenancy, device information model
Leveraging Microsoft Azure for integrated cloud computing services (Gold Partner); Managed by Industrial Automation for ABB Group

Continue to strengthen ABB digital landscape

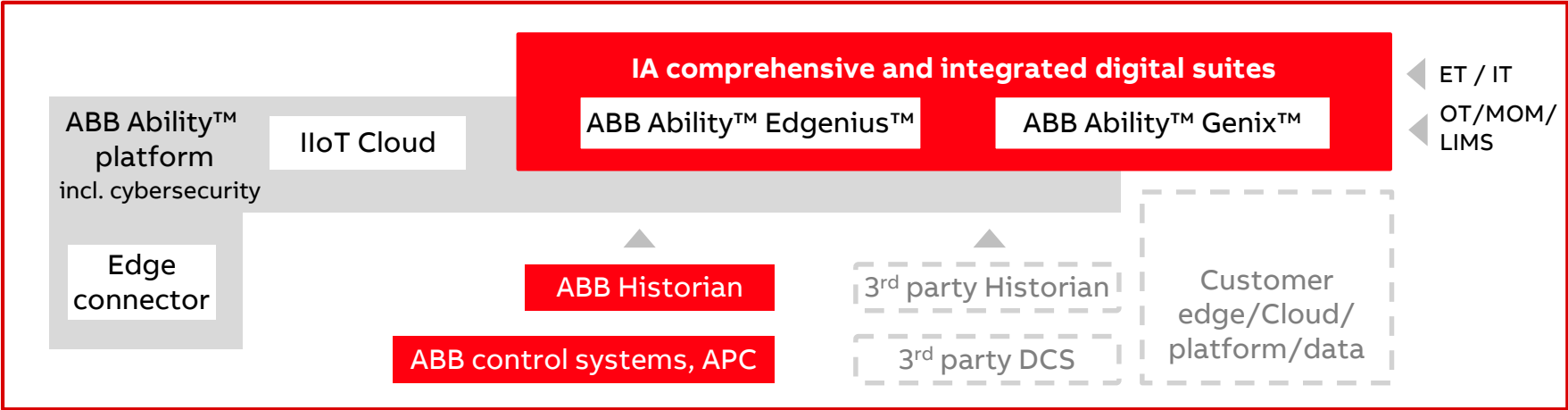
Customers needs



3 distinct digital value propositions

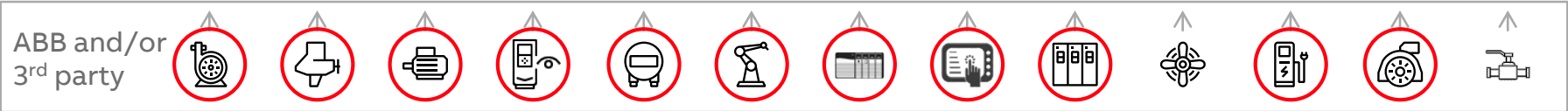


Infrastructure and platform to enable digitalization



Cyber-security services

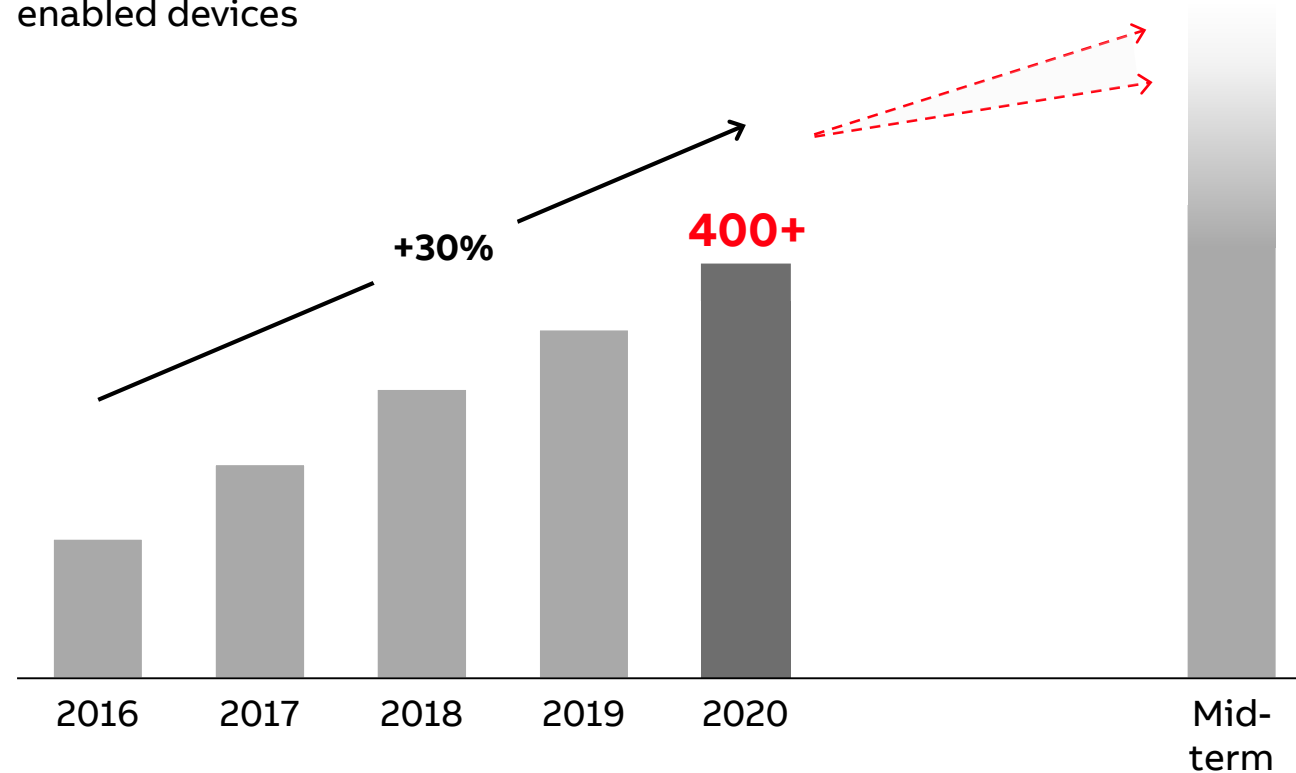
Equipment/ assets



Continue the strong digital momentum

IA Digital orders

\$ mn, Ability branded offering and SW only, not including digitally enabled devices



- 1 Digital offering today: \$400+ mn
- 2 Doubled digital organically during last three years
- 3 Double-digit growth plan going forward

Active contributor to help customers to become more sustainable

Be part of the solution – building on IA portfolio, digital and domain expertise

Selected examples

1 Manage energy transition

2 Increase energy efficiency

3 Reduce environmental impact

4 Sustainable use of resources

5 Low-carbon mobility

1
Renewables integration, Energy storage, Power from shore, Subsea power distribution, Hydrogen



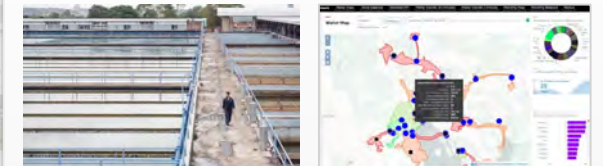
2
Mine electrification, Ventilation on Demand, Gearless Conveyor Drives, Mine Optimize



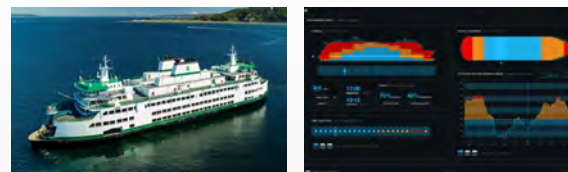
3
Emissions Monitoring, Mobile Gas Leak Detection



4
Water/waste water control systems, Leakage detection, Distribution network management



5
Hybrid/full electric vessels, Azipod propulsion, Onboard DC Grid, Marine Advisory System



Industrial Automation commitment to create value



Extend **Leadership** in automation solutions
DCS leadership, domain expertise, industry-specific products



Serve customers' needs **throughout asset lifecycle**
Safety, project execution, productivity improvement, services



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Support customers to become **more sustainable**
Energy transition, energy efficiency, positive environmental impact



Drive **divisions' performance** and maintain **high ROCE**
Revenue quality, portfolio management, decentralized operating model

Op. EBITA ~14%

Increase Op. EBITA margin
by 200 bps by 2023

ROCE 25-30%

Attractive ROCE across
market cycles

Quality of revenues

Profitability before growth,
resilience

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IA Energy Industries commitment to create value



Leader in integrated automation solutions

Competitive portfolio, domain expertise, project execution capabilities



Strong resilience despite challenging environment

Winning and gaining ground in automation



Innovative solutions to accelerate a **low-carbon society**

Energy management, emerging energy sectors, resources management



Continue **digital growth** with a systematic approach

Prioritized offering, digital sale capabilities, channel partners



Fully empowered to deliver superior performance

Revenues quality, portfolio management, decentralized operating model

Op. EBITA +200 bps

Op. EBITA margin increase
by 2023

ROCE +600 bps

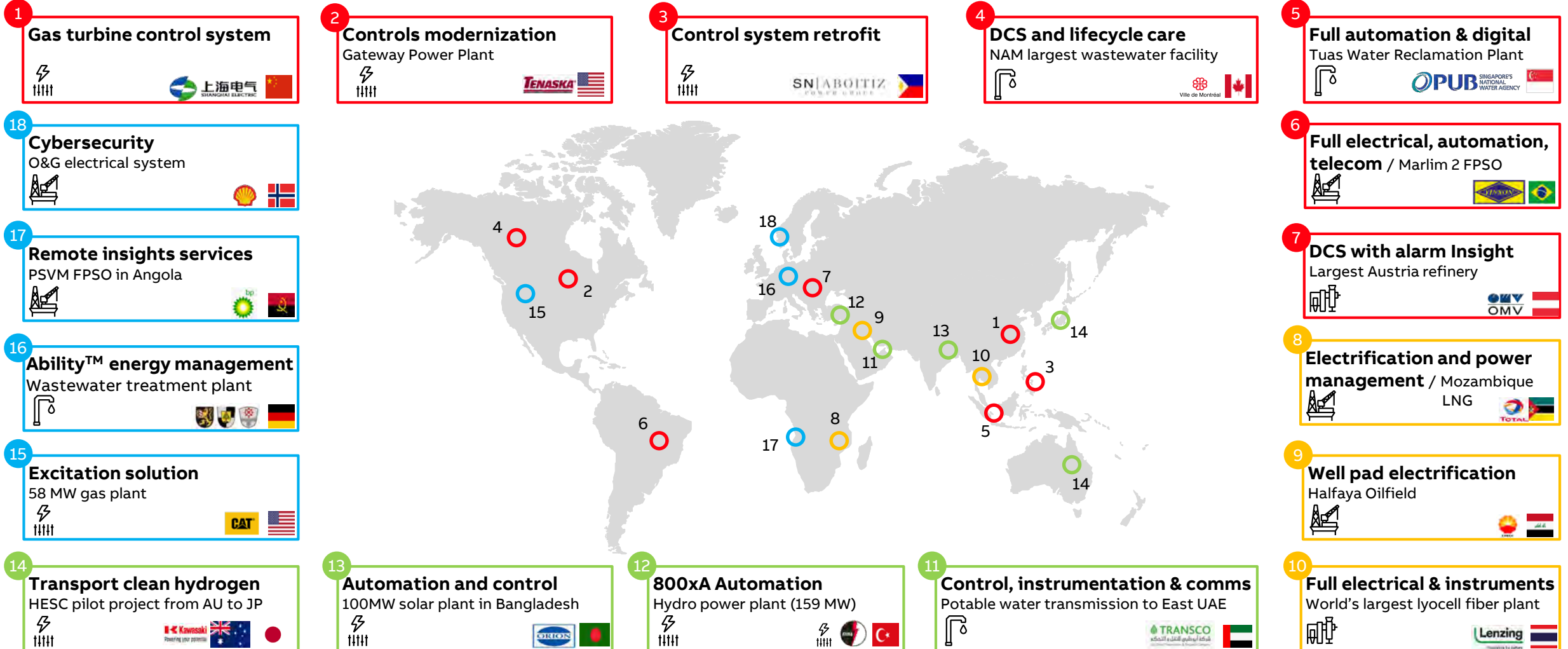
ROCE¹ increase by 2023

Quality of revenues

Profitability before growth

Winning and gaining ground in challenging times

Navigating headwinds and finding tailwinds in 2020 (selected project wins)



Well positioned to capture future energy trends and customer needs

Support customers through the Industry evolution



Oil price cyclicality

- Enhanced oil recovery
- Capital project efficiency
- Tight cash and cost management



Demand for more sustainable energy

- Embed sustainability into all operations
- Commitments to societies and communities
- Government targets (e.g. UK to halve emissions by 2030)



Digitalization acceleration

- Digital moved from “nice to have” to a demand
- Data and artificial intelligence to improve operations
- New ways of working and interacting with customers

Mid-term recovery outlook, by targeted segments

Team estimated mid-term growth (CAGR)

<0%	0-3%	3-6%	>6%
Thermal power	Oil and gas Refining Base chemicals Hydro power	Specialty chemicals Water and wastewater	Digital Renewables



“**Low-carbon spending** across O&G Majors is expected to almost double by 2025”

– IHS Markit analysis¹, October 2020



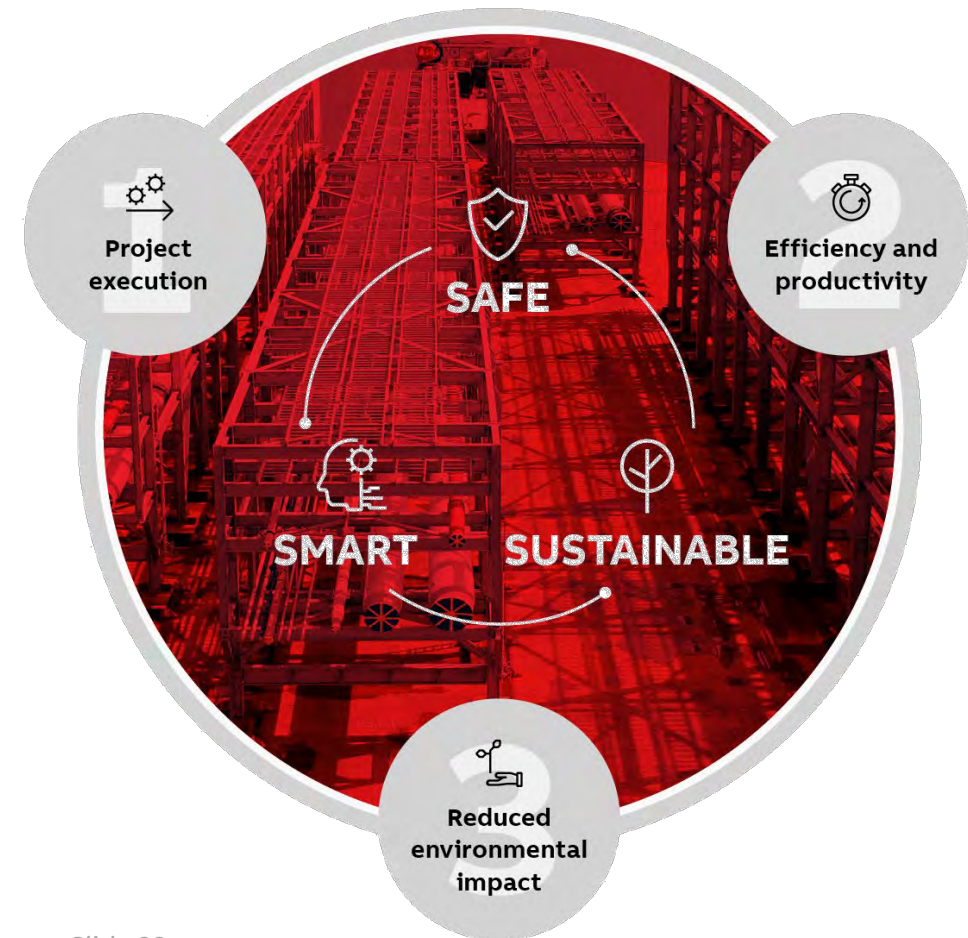
“Major O&G players are investing heavily in **digital technology** to achieve operating cost reductions and upstream efficiencies”

– McKinsey, October 2020

1. Based on company guidance and IHS Markit estimates. The low-carbon sector includes alternative energies (including renewables and biofuels), storage, alternative transportation, gas as it pertains to the generation, transmission, and distribution sectors, and emissions reduction from oil and gas operations. Includes capex and R&D spending. Peer group includes BP, Chevron, Eni, Equinor, ExxonMobil, Shell, Total SE

IA Energy Industries vision

Safe, smart and sustainable operations through solutions that digitalize, automate and electrify industry



Domain expertise

Oil, gas and chemicals



O&G
Upstream



O&G
Midstream



Refining &
Petrochemicals



Bulk & Specialty
Chemicals



Pharma-
ceuticals

Conventional power



Coal Power



Gas Power



Nuclear Power

Alternative energy



Solar



Wind



Hydrogen



Waste to
energy



Geo
thermal



Hydro
power



Biofuels

Water infrastructure



Desalination
plant



Water
Distribution



Waste
water



Water
treatment

Offering portfolio

End-to-end system
integration

Automation
DCS products

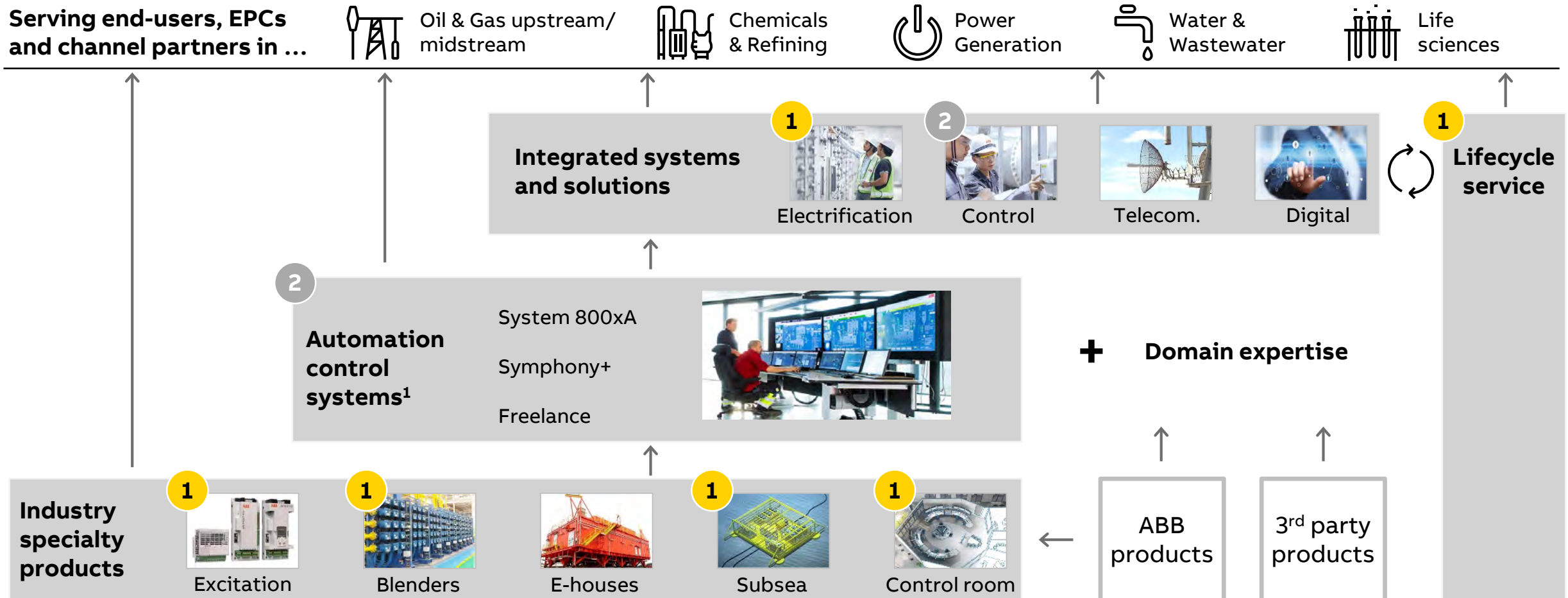
Digital and
advanced services

Low-carbon
solutions

Specialty products:
Excitation, Blending, ...

Competitive portfolio and asset-light business model

End-to-end automation, electrical, telecoms and digital solutions

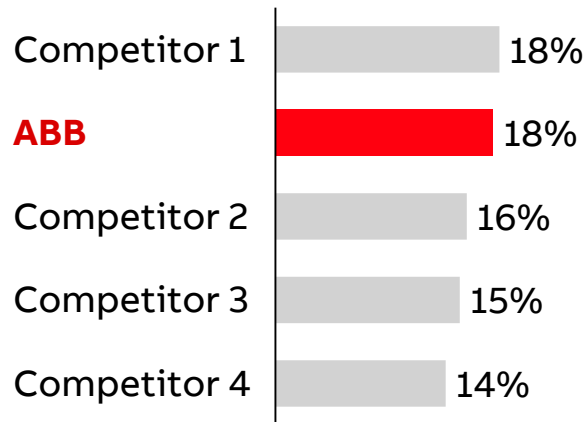


Winning in greenfield and brownfield automation

Best in class and competitive automation portfolio, domain expertise and project execution capabilities

DCS sector share

Sector share (%) in OGC, Power and Water



World class automation

#2 DCS & domain expertise
25-30k connected systems

Consistent project execution

High value execution centers
ABB Adaptive Execution™

Energy Industries
recipe to beat competition

Lifecycle partner

Global service footprint
Keeping customers for life
Plants served for 40+ years

ABB Adaptive Execution™

Deliver **consistent, standardized** global **projects**

Lower cost for both customers and ABB

Winning in environmentally friendly solutions



Enabling **resource efficiency** and low carbon operations across traditional industries

- Expertise in energy management solutions
- Joint industry projects (JIPs) program



Supporting development of **new and renewable** energy models

- Broad sectors coverage beyond traditional energy
- Knowledge investments in emerging sectors: H₂, bio-plastics



Driving more **responsible** use of resources

- Water cycle efficiency, existing infrastructures productivity
- Producing quality food in a safer and responsible way....



Subsea JIP

>\$500 million savings expected in Capital expenditure



Orion Solar

Helping Bangladesh achieve cleaner energy goals



Lhyfe Hydrogen

First green hydrogen automation project



Busch-Jaeger

Scalable energy management to reduce CO₂ emissions

Winning in digital

Continued digital growth with a scalable systematic approach

Tomorrow:

Continue digital growth with a scalable systematic approach

Ambition to **double our digital business** in the mid-term

Drive focus to **institutionalize digital** within Energy Industries:

Leverage platform, prioritize R&D, scale up digital capabilities

Today:
Entrepreneurial growth

Today **\$200+ mn** of pure digital offering

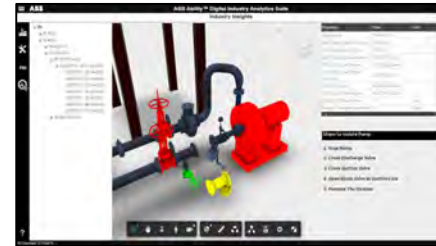
~30% CAGR over the last 3 years

Wide portfolio of distinct digital solutions

Industrial
Analytics



Industrial AI



Our priorities: Improve quality of revenues

Growth

- Grow **Service** business: “white spots”, specialties portfolio, FPSO
- Continue **digital** growth with a scalable systematic approach
- Win together with our **channel partners**

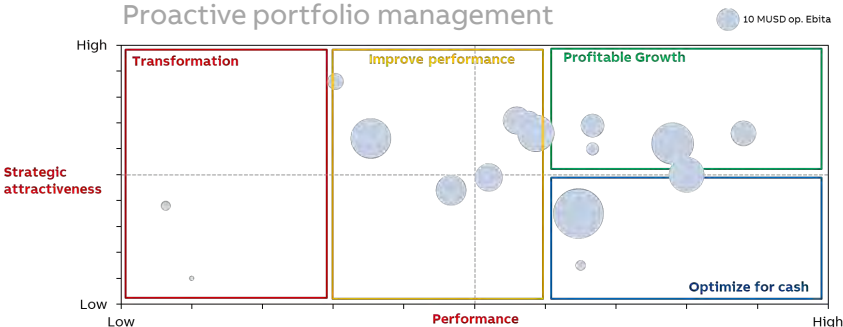
Profitability

- Drive **ABB Adaptive Execution™** (consistent project execution)
- Internationalize profitable **industry specialty products**
- Transform less-performing** entities (e.g., blending)

Focus

- Increase **bid selectivity** for higher ABB content and value added
- Reduce exposure to **less attractive sectors** (e.g., unconventional)
- Proactive **allocate resources** (R&D, sales effectiveness, etc.)

Proactive portfolio management



Empowered and committed to deliver superior performance

+200 bps

increase in Op. EBITA margin by 2023 vs.
2019

+600 bps

increase in ROCE¹ by 2023 vs. 2019

Quality of revenues

Profitability before growth

What has changed with ABB Way

- 1** Actions are directly linked to performance
- 2** Decentralization is the true reality
- 3** Simplification in how to work internally

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ABB