Robotics & Discrete Automation

Writing the future of flexible manufacturing and smart machines. Together.

Sami Atiya, President Robotics & Discrete Automation
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", "2019 framework" or similar expressions.

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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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Robotics & Discrete Automation at a glance

Key figures

- **Global #2**: #1 in growth, #2 in robotics, #1 in China, Top 5 in PLC
- **$80 bn**: Market size
- **$3.6 bn**: 2018 revenues
- **14.6%**: 2018 Op. EBITA
- **~11 k**: Employees worldwide

Business mix (by revenue)

<table>
<thead>
<tr>
<th>Customers</th>
<th>Offering</th>
<th>Channels</th>
<th>Geographies</th>
</tr>
</thead>
<tbody>
<tr>
<td>F&amp;B, Pharma, Cons. Pckg. Goods Metalworking 3C &amp; Semiconductor</td>
<td>Others</td>
<td>Distributors</td>
<td>Europe</td>
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<tr>
<td>Automotive</td>
<td>Automotive</td>
<td>System Integrators</td>
<td>Americas</td>
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<tr>
<td>Machine automation</td>
<td>Service</td>
<td>Direct sales</td>
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<tr>
<td>Robots</td>
<td>Robots solutions &amp; systems</td>
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<td>OEMs</td>
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Note: 2018 numbers are recalculated / management estimate for the new ABB structure
A unique product portfolio...

Robotics and machine and factory automation

Collaborative
Picker
SCARA
Control
Vision
HMI
Transport systems

Robots from 4 to 1,000 kg

Unique scope across robotics and machine automation
...as a base for value creating solutions

Unique product portfolio + Advanced engineering and simulation tools + Domain expertise

Automation solutions for flexible manufacturing and smart machines

Automotive  Electronics  Consumer goods  Food & beverage  Metal fabrication  Plastics  Logistics
...as a base for value creating solutions

**Concrete customer value**

- **Increased productivity**: 0.5 seconds to fill a beer bottle
- **Highest flexibility**: Batch size 1
- **Maximum uptime**: 25% fewer incidents
- **Improved output quality**: 100% parts inspection
- **Fast time to market**: 16 weeks for a complete assembly line

**Unique product portfolio**

**Advanced engineering and simulation tools**

**Domain expertise**
2018 results

Profitable Growth

- 10% order and 6.2% revenue growth\(^1\)
- \(~1,700\) application and system engineers
- Acquired AB Rotech, intrion

Relentless Execution

- Op. EBITA margin of 14.6%
- Op. excellence initiatives to support margin
- B&R integration ahead of plan

Business-led Collaboration

- Working on >100 concrete joint customer opportunities\(^2\)
- Started investment in new R&D campus in Austria
- Building state-of-the-art robot factory in China
- Continued to attract people to support growth

\(^1\) On comparable base
\(^2\) Mainly Robotics, Machine & Factory Automation, Drives

Note: all 2018 results numbers based on management estimates
Operating as a market maker in attractive markets
Creation of new automation applications ensures mid-term growth vs. short-term slow down

Global addressable market
in $ bn

Business exposure
% of revenues

Market growth drivers

High-growth segments (examples)

New machine and manufacturing concepts\(^1\)
~10%

Electronics
~10%

EV: cars and batteries
~10%

Logistics
~10%

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\(^1\) Across industry sectors

Note: all 2018 results numbers based on management estimates
Factory of the Future

- Digital factory optimization
- Integrated machine automation and robotics
Unique, comprehensive offering for our market

Strong base to further build on

1Includes mainly software-elements going beyond manufacturing (e.g., ERP, CRM)
Driving above-market growth medium term...

Medium term revenue development

Drivers for above market revenue growth

- Cross-selling to complementary customer base
- Emerging market and US penetration
- Strong segment and account focus
- Analytics and Artificial Intelligence
- New solutions through machine-robotics integration
- New segments, robot types and expansion in service robotics
- Expanding ABB Ability™ solution offering building on strong portfolio
- Portfolio and regional expansion for machine automation
- Partner eco-system – e.g. with Dassault

FY 2018

$3.6 bn

6% CAGR

Medium term
growth

Above-market
growth

Market growth

FY 2018\(^1\)
...at attractive op. EBITA margin

Operating EBITA margin

<table>
<thead>
<tr>
<th>FY 2018</th>
<th>Cost infl. /price pressure</th>
<th>Operational efficiency</th>
<th>Volume leverage</th>
<th>Portfolio/ mix</th>
<th>Operational transformation</th>
<th>Medium term</th>
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<td>14.6%</td>
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Details on key drivers

1. Portfolio/mix
   - Modularity and standardization
   - Engineering productivity through automation and Artificial Intelligence
   - Software and service share increase

2. Operational transformation
   - Sales efficiency, project and engineering execution excellence
   - ABB-OS™ savings, e.g. simpler organization
   - Integration cost synergies

\(^1\)numbers are recalculated/ management estimate for the new ABB structure
Creating value for customers and ABB

Writing the future of flexible manufacturing and smart machines

**Attractive growth**
- High-growth market: ~2x GDP
- Unique combination of robotics and machine automation
- Proven track record of double digit growth
- Innovative offering expansion, esp. ABB Ability™

**Stronger margins**
- Top-line growth drives increasing profits
- Modularity, standardization and software tools / AI accelerate scale
- Operational performance initiatives and lean ABB-OS™
- Completion of successful realization integration cost synergies

**Optimizing capital**
- Investing in the future: ABB Ability™ and new technologies
- Partnerships – e.g. with Dassault – for accelerated offering expansion and shared investments
- Assessing strategic acquisitions to expand offering

**Medium-term operational EBITA margin**
13 – 17%
Let’s write the future of flexible manufacturing and smart machines. Together.