ABB China: Pioneering technology leader and digital champion

Lars Eckerlein, Chief Financial Officer, ABB (China) Ltd.
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", "framing 2018" 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
- such other factors as may be discussed from time to time in ABB Ltd’s filings with the U.S. Securities and Exchange Commission, including its Annual Reports on Form 20-F. Although ABB Ltd believes that its expectations reflected in any such forward-looking statement are based upon reasonable assumptions, it can give no assurance that those expectations will be achieved.

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

Important notice
Streamlined and strengthened digital-first portfolio

Two clear value propositions

- Bringing electricity from any power plant to any plug
- Automating industries from natural resources to finished products

Partner of choice for:

Power Grids
- a stronger, smarter and greener grid

Electrification Products
- electrification of all consumption points

Industrial Automation
- perfection in automation

Robotics and Motion
- robotics and intelligent motion solutions

#1 motion
#2 robotics
Attractive markets: Energy and Fourth Industrial Revolutions

The Energy Revolution

Utilities

Transport & Infrastructure

Industry

The Fourth Industrial Revolution

©ABB
May 24, 2018 | Slide 4
China market
New drivers in new era bring new opportunities

Energy structure evolution
- Smart grid
- UHVDC/AC
- Microgrids / integration of renewables
- Energy storage

Industry upgrade and productivity improvement
- China manufacturing 2025
- Industrial robots
- Energy efficiency
- Environment protection

Regional development and urbanization
- Smart home and green building
- E-mobility
- Data center electrification

Belt and Road initiative
- Infrastructure connectivity (grid, roads, railways, airports, ports, logistic centers)
- Mining and metal
- Oil & Gas

Digital is a key enabler of China’s future economic growth
ABB: over 111 years in China

Localized value chain drives steady business growth

Truly a local company
• ~2,000 R&D professionals
• >90% of sales from locally-made products, solutions and services

Continuously expanding footprint in China
• 40 entities and 17 service centers
• ~18,000 people across 140+ cities
• E-business covers 670+ cities/towns
• Accumulated investment ~16 bn CNY

Made in China, for the world
• Exports account for ~20% of orders received in China

Customer segments 2017

Approximate share in %

- Industry 40%
- Utilities 37%
- Transport & infrastructure 23%
ABB Ability™ – making a quantum leap in digital

Power Grids
- ABB Ability™ Control & Protection System
  - Digital grid upgrades

Electrification Products
- ABB Ability™ Connected Solutions
  - EV fast-charging solutions

210+ ABB Ability™ solutions
- Utilities solutions
- Industry solutions
- Transportation & Infrastructure solutions

Industrial Automation
- ABB Ability™ Collaborative Operations
  - 15 centers launched globally

Robotics and Motion
- ABB Ability™ Connected Services
  - >7,000 connected robots globally
Penetration

Writing next chapter in electrical history

Changji-Guquan, the world’s first ±1100kV UHVDC project will set a new world record in terms of voltage level, transmission capacity and distance.

Developed in close collaboration with State Grid Corporation of China, the ±1100 kV UHVDC transformer and key components have passed stringent tests.

The project enables the integration and transmission of remote renewables on a much larger scale with lower losses, and inflicts less environmental impact.
Penetration

Industrial services step into a new era: remote, smart and digital

**Strong service capacity accelerate value creation**

- **1,500+** service experts dedicated to offering comprehensive services of partnership to improve asset performance
- **17** comprehensive service centers to provide rapid response and professional services
- **200+** service stations & certificated service facilities covering all key areas nationwide
- **400+** service offerings to meet customer needs in asset lifecycle management, upgrade and tailor-made services

**ABB Ability™ Cloud Service**

ABB remote service centers are providing cloud-based real-time monitoring and technical support for users of ABB equipment such as drives, MV & HV products and robots
# Innovation

New technologies enhancing competitiveness

## Key innovations

<table>
<thead>
<tr>
<th>Strong grid solutions</th>
<th>Automation solutions</th>
<th>EV and smart LV/MV solutions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000kV Gas-insulated lines (GIL)</td>
<td>ACS530/ACS860</td>
<td>Terra 63Z DC fast charger</td>
</tr>
<tr>
<td>±1100kV UHVDC converter transformer</td>
<td>HDS Servo Motor</td>
<td>ABB Ability™ Electrical Distribution Control System</td>
</tr>
<tr>
<td></td>
<td>Symphony Plus HR Series Modular Power System IV</td>
<td>MNS Digital Switchgear</td>
</tr>
<tr>
<td></td>
<td>Select I/O</td>
<td>ABB i-bus® KNX PEONIA sensor</td>
</tr>
</tbody>
</table>
Innovation

New business model driving transformation

E-business sales approach

50,000+ products from 4 divisions

Orders: +89% yoy\(^1\)

Orders from 676 cities or towns, 88% without ABB office

A dedicated, lean, agile team tuned for e-biz dynamics

Digital Marketing Center

Online service 8:00-24:00
Working time 8:00-24:00
Smallest order < 5 CNY
Biggest order > 300,000 CNY
Daily inquiries 200+

Contact us

©ABB
May 24, 2018 | Slide 11
Expansion

Explore business opportunities from Belt and Road Initiative

Lahore Orange Line Metro Train Project, Pakistan
DC yard equipment & Live tank breakers
Electrification solutions
Dubai Hassyan Clean Coal Power Generation Project, UAE
Transformers, Symphony Plus
Paper machine project of Ittihad Paper Mill, UAE
Drive system & AMI motors
Coal-fired power plant, Bangladesh
GIS solutions

Sinoma cement project, Philippines
Substation
Transmission project, Indonesia
Transformers
Long Son Cement, Vietnam
Freelance DCS
High-capacity metro train project, Australia
Traction motors
ABB Ability™ smart sensor for motors

Adding new capacities to existing equipment of Baowu Steel

ABB gives old motors of Baowu Steel Group the benefits of the Industrial Internet of Things with a wireless, pocket-sized sensor

The sensors are attached to low-voltage motors, transmitting data through bluetooth, together with cloud-based applications

Significantly boosts productivity and efficiency by optimizing performance and predicting maintenance
**ABB Ability™ Connected Services for robotics**

Secured uptime and optimized performance for Volvo factory in Chengdu

The 270 ABB robots installed at **Volvo’s factory**, Chengdu, Sichuan province, are linked to **ABB Ability™ Connected Services**

Conducting remote monitoring and fast fault detection, the connectivity helps avoid unplanned shutdown and increase equipment availability

Such service could cut shutdown rate by 20%, improve responding speed by 60%, prolonging the life of the robots
Xue Long II is China’s first domestically built polar research ice breaker, and will be the world’s first electric ship to embody a smart cabin.

Data is collected by smart sensors and transferred to ABB Ability™ Marine Remote Diagnostic System for real-time digital monitoring, offering assessment of asset health status and suggestions. With remote services, data can be transferred to the shore-based operation center, facilitating remote asset management and preventive maintenance.

ABB has also provided the ship with Azipod® VI propulsion to face even the most challenging ice conditions.
ABB Ability™ Power Management System

Ensuring reliability for Baidu data center

Baidu’s biggest data center – Baidu Cloud, Yangqu, Shanxi province – is now equipped with the ABB Ability™ Power Management System (PMS)

ABB Ability™ PMS helps ensure maximum reliability and uptime by monitoring the real-time condition of power supply and distribution, as well as analysing the health of electric equipment.

Management tools installed inside the system help customers efficiently operate the industry-level monitoring platform, lifting the reliability of data centers.
ABB Ability™ Electrical Distribution Control System

Upgrading asset management for Nanjing Normal University

ABB Ability™ Electrical Distribution Control System is an innovative cloud-computing platform designed for monitoring, optimizing and controlling electrical system. Enables multi-user access and multi-device connections in an integrated plug & play architecture and optimizes the performance of the electrical system. Helps customers easily conduct daily equipment management through mobile APPs, realizing advanced digital monitoring and energy management.
ABB Ability™ Connected Services for electric vehicle charging

Ensuring efficient and intelligent charging for NIO

ABB provided Terra 63Z DC fast chargers for NIO House, together with ABB Ability™ Connected Services, guaranteeing the charging service for NIO's demo cars.

NIO House is NIO's first experience store worldwide, demonstrating NIO's latest products on-site.

The Terra 63Z DC fast chargers, having an output of 60kW and equipped with ABB Ability™ Connected Services, can remotely diagnose 90% of possible problems and solve 60% of exceptional cases, greatly improving the operating efficiency and uptime of charging piles.
Support China growth
Deeply engaged in local communities

**Educational support**
- Donated 15 million CNY cumulatively via ABB New Great Wall Fund, benefiting 2,000+ students from 45 schools
- Collaboration with universities to establish scholarships and joint labs

**CSR activity**
- Participation in anti-desertification program and organization of tree-planting
- Advocate for safe use of electricity
- Provision of help in nursing homes
- Donations to support the rebuilding of earthquake hit areas

**Talent development**
- Cultivation of innovation, holding ABB University Innovation Contest, attracting 6,000+ participants from 200+ universities and ABB Cup National Intelligent Technology Thesis Contest, with 6,500+ contestants and 3,000+ theses

**Government advisor**
- Advised on the development of Beijing, Shanghai, Guangdong and Chongqing, to support China’s economic transformation and upgrade and sustainable growth
ABB Formula E championship – a true game changer

The race to the future is on