Driving innovative solutions for Smarter Buildings

Tarak Mehta, President, Electrification Products
Agenda

Market drivers for Smart Buildings

ABB and Smart Buildings
Mega trends shape the future of buildings

Urbanization
70% of the world’s population will live in cities by 2050
UN study

Digitalization
By 2020, 33bn+ internet-connected devices will be used worldwide
Strategy Analytics study

Integration of renewables
The solar market will grow to 150 GW in 2025
Frost&Sullivan

New sources of consumption
EVs will represent over 55% of the market by 2040
Bloomberg
Smarter Buildings deliver performance – both financially and in terms of quality of life
Buildings are an attractive $90+ billion market

Market estimate 2017 ($bn)

- Residential buildings electrical distribution: 23
- Residential buildings automation: 10
- C&I buildings electrical distribution: 30
- C&I buildings automation: 27

Opportunities in both electrical distribution and building automation

Source: ABB Strategy team analysis, BCG project for ABB
Smart buildings opportunity

Building complexity pyramid

- **High**: 60 - 70%
- **Medium**: 10 - 15%
- **Low**: 0 - 5%

Smart technologies penetration

- **Digital capabilities create growth**

Growth enablers

- Government regulations
- Computing costs go down
- IoT-enabled & cloud technologies
- OpEx savings pressure
- Soft factors

Customers

- Large mixed developments, skyscrapers, campuses
- Mid-size offices, hotels, retail, healthcare
- Small commerce, branches
Agenda

Market drivers for Smart Buildings

ABB and Smart Buildings
# ABB: a global pioneering technology leader with >130 years of history

## What (Offering)

<table>
<thead>
<tr>
<th>Pioneering technology</th>
<th>Products</th>
<th>Systems</th>
<th>Services &amp; software</th>
</tr>
</thead>
</table>

## For whom (Customers)

<table>
<thead>
<tr>
<th></th>
<th>Utilities</th>
<th>Industry</th>
<th>Transport &amp; Infrastructure¹</th>
</tr>
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</table>

## Where (Geographies)

<table>
<thead>
<tr>
<th>Globaly</th>
<th>Asia, Middle East, Africa</th>
<th>Americas</th>
<th>Europe</th>
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</table>

- ~$34bn² revenue
- ~100 countries
- ~135,000² employees

¹Excluding GE IS acquisition full-year results; ²incl. Buildings
ABB Electrification Products at a glance

- ~43,000 employees
- $10.1 bn\(^1\) in revenues
- $1.5 bn\(^1\) Op. EBITA
- GE Industrial Solutions
  - ~14,000 employees
  - $2.7 bn in revenues

- Present in +100 countries
- Manufacturing sites 100+
- Delivering 1.5+ million products a day
Today, we are helping buildings across various segments

- Biological House, Denmark
- Skalski Offices, Poland
- Chateau de Ferrierès, Paris
- Schauland office, Germany
- Igloo Hotel, Finland
- Volante Tower, Dubai
Smart homes & buildings are a reality today

Homes & buildings ecosystem
Integrated 3rd party products and services

End-to-end solution with solar, storage, home & buildings automation and e-mobility
Shaping a sustainable future for the capital of Sweden
Stockholm, Sweden

Royal Seaport Project

- Grid management
- Smart metering and energy storage management
- Smart home/building integration
- Integration of EV charging network
- Demand-Response to align production and consumption

A comprehensive solution from one source
ABB Ability™ enables buildings to unlock value

Digital solutions enable:
- System optimization
- Grid reliability
- Energy services
- New business models
- Savings
ABB Ability™ in a strong position within first two years of brand

Brand performance

- Aided awareness
  - ABB Ability™: 23
  - MindSphere: 14
  - EcoStruxure: 10
  - Predix: 10
  - Lumada: 7

- Usage
  - ABB Ability™: 43
  - MindSphere: 40
  - EcoStruxure: 34
  - Predix: 31
  - Lumada: 28

Image profile

- Stands for extensive industry expertise
- Provides unmatched digital competence
- Offers cloud connectivity
- Protects customer data
- Ensures cyber security
- Guarantees data ownership

Ipsos, Brand Reputation Study 2017; global data

1Base: All respondents: n=1,976; 2,3,4,5 Base: Aware of respective digitally connected offering: ABB Ability: n=478, Sap HANA: n=281, MindSphere: n=242, EcoStruxure: n=210, Predix: n=190, Lumada: n=143; Remark: GE and Schneider not assessed in all divisions

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Smart Buildings growth is based on digital innovation and channel partnerships

- Intelligent functionality
- Reduced costs for technology
- Digital customer experience

Residential Buildings – current focus

Residential to commercial | Ecosystem integration | Market access

Mechanical contractors
System Integrators
Electrical contractors

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