



ABB Ability™ Electrical Distribution Control System

Understanding Power



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” or similar expressions.

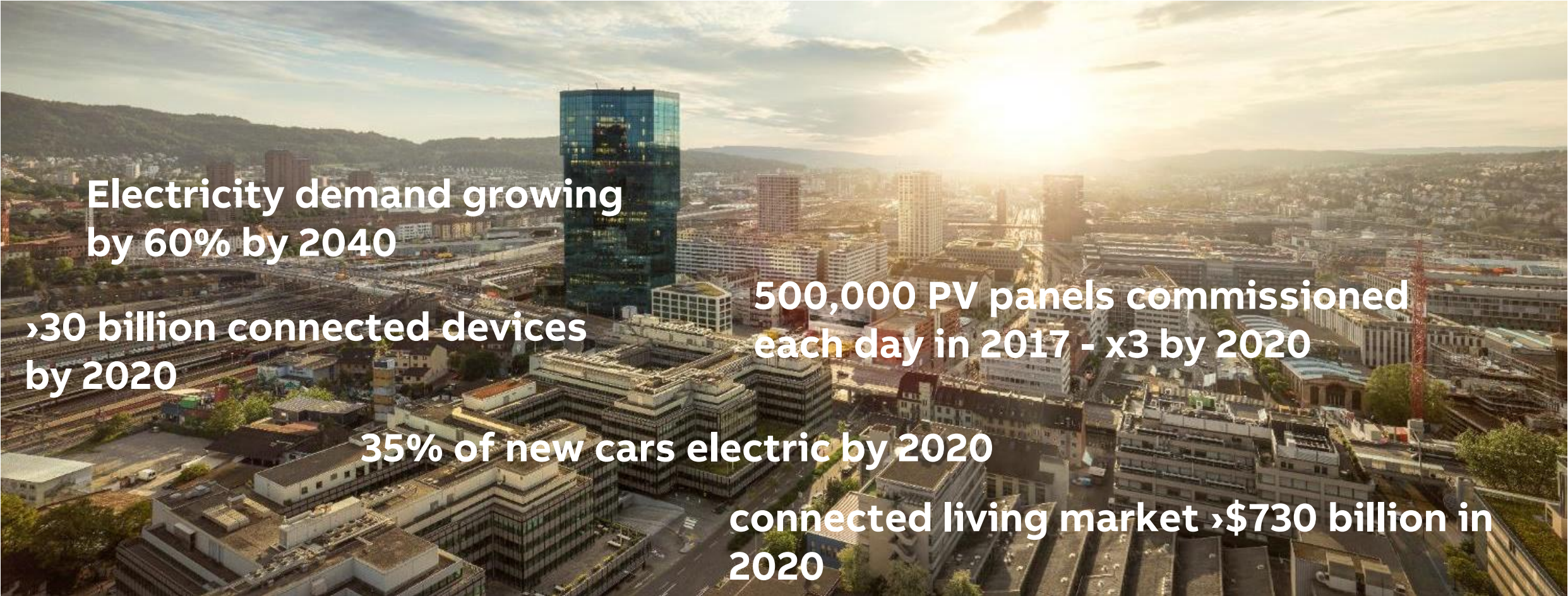
There are numerous risks and uncertainties, many of which are beyond our control, that could cause our actual results to differ materially from the forward-looking information and statements made in this presentation and which could affect our ability to achieve any or all of our stated targets. The 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

Responding to a changing world



Electricity demand growing
by 60% by 2040

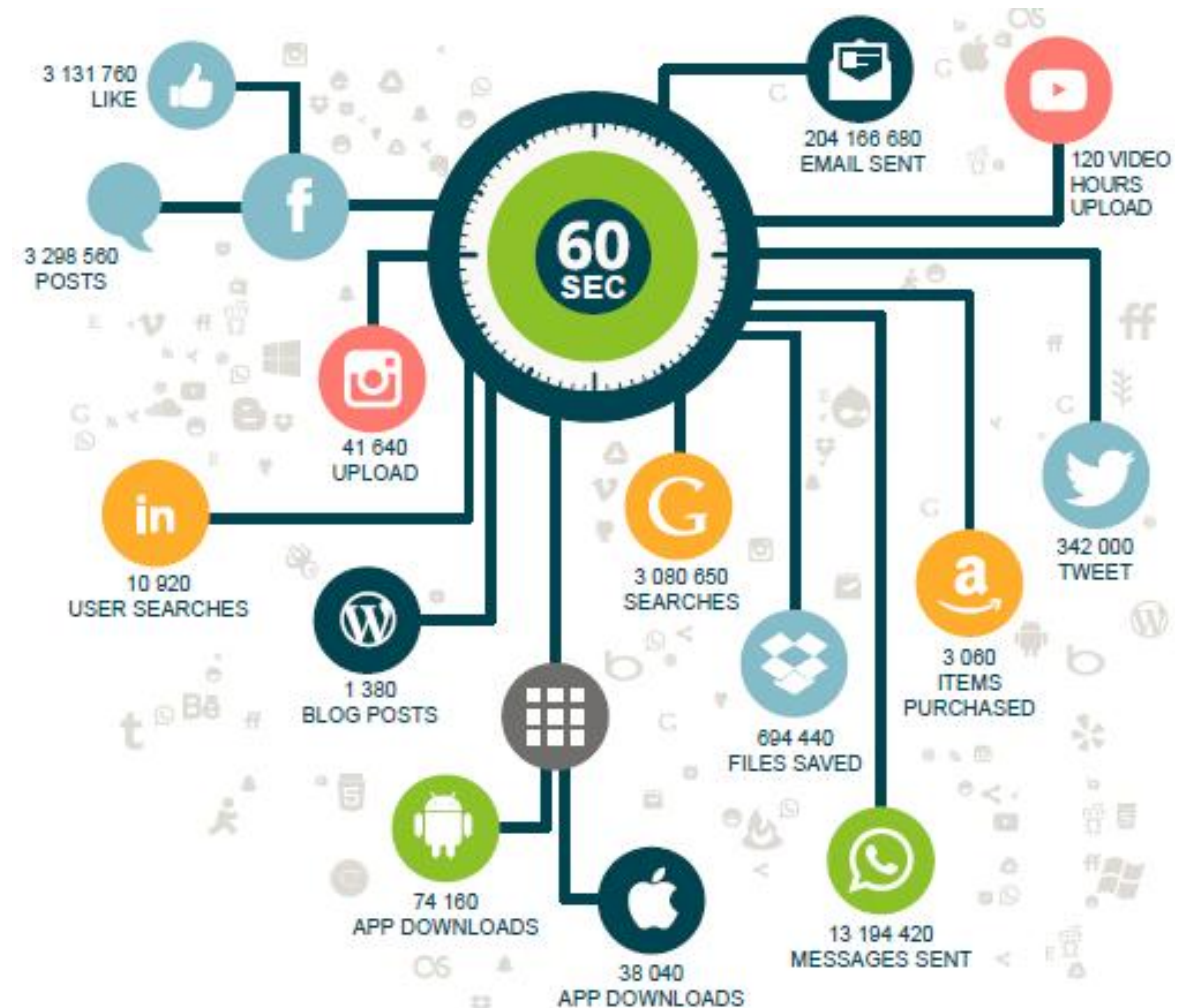
>30 billion connected devices
by 2020

500,000 PV panels commissioned
each day in 2017 - x3 by 2020

35% of new cars electric by 2020

connected living market >\$730 billion in
2020

Expanding horizons



Massive value migration

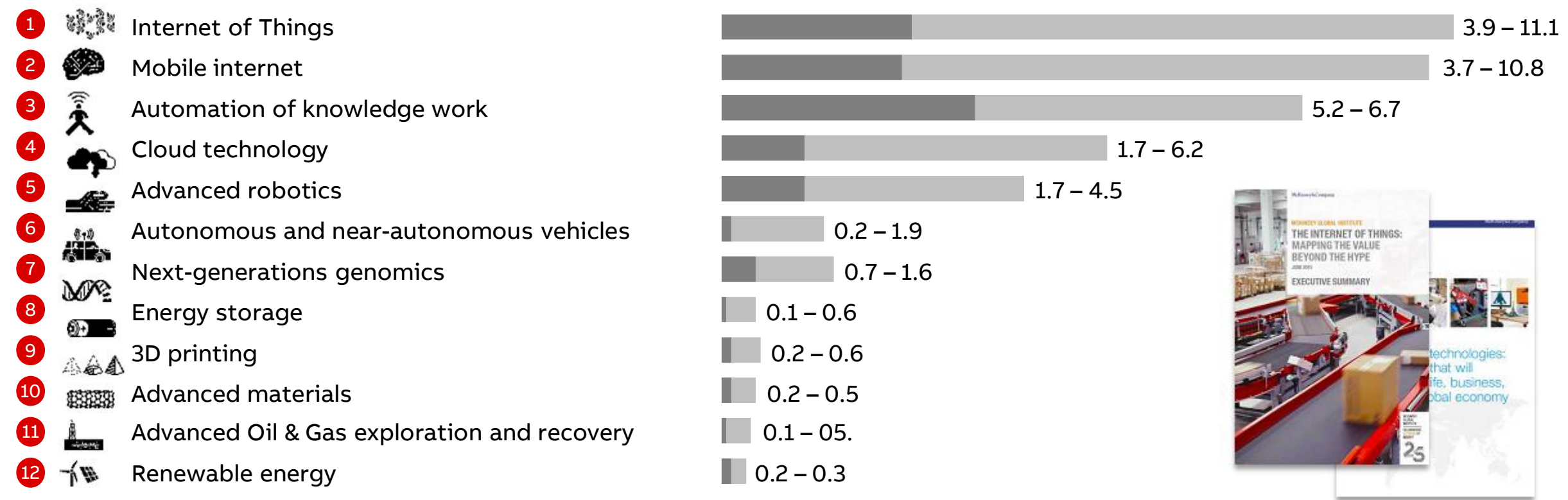
A \$4 – 11 trillion digital opportunity by 2025

Range of sized potential economic impact

Low

High

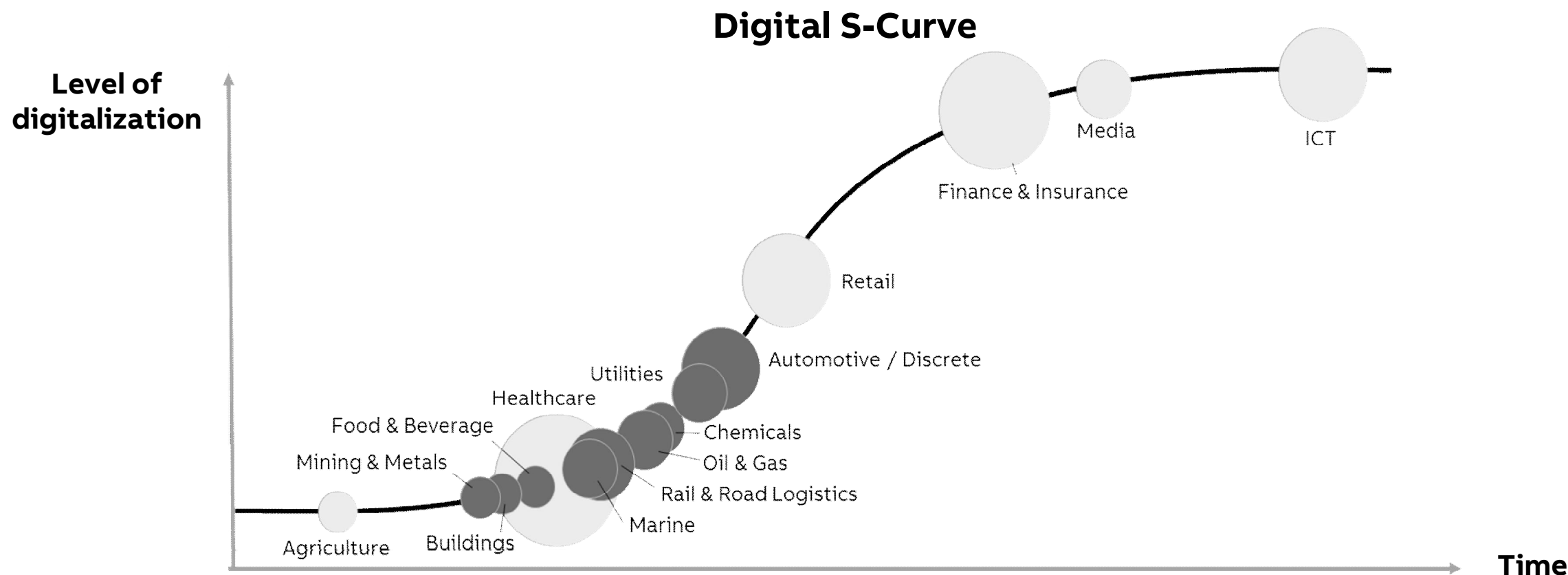
Disruptive technologies will have substantial impact by 2025 (economic impact of 12 most significant technologies, \$ trillions, annual)



¹Based on top-down estimate of potential net economic benefit, including consumer surplus
Sources: McKinsey Global Institute

Industrial markets primed to adopt digital technologies

Computing + connectivity + cloud + analytics set to unlock value



How ABB Ability™ solutions deliver value

Digitally connected products and services providing expertise

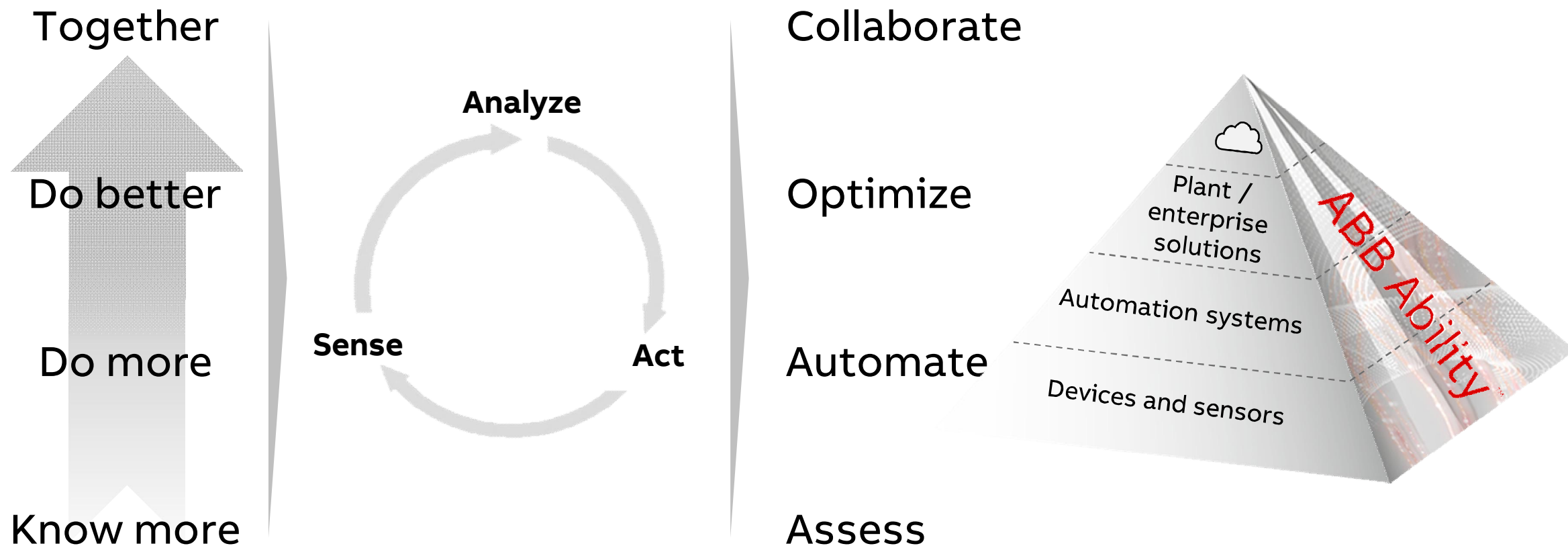


ABB in Digital

Uniquely qualified

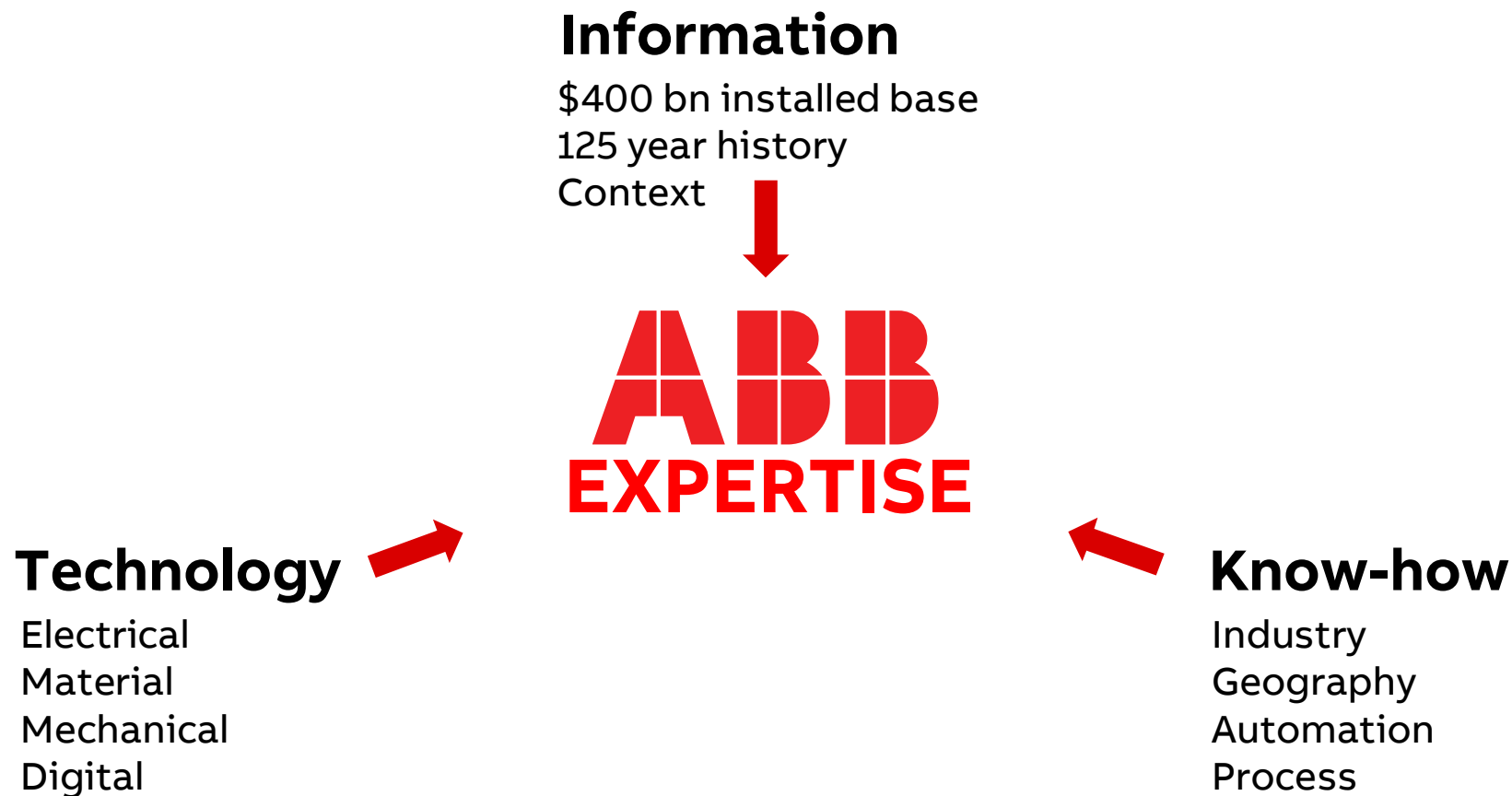


ABB Ability™ Electrical Distribution Control System

Cloud-based energy and asset management solution for the power distribution systems

Why?

Customers want to increase awareness on owned resources, improve performance and optimize their assets **to reduce total operating costs**

What?

ABB Ability™ Electrical Distribution Control System is a **cloud-based energy management and asset supervision solution** for buildings and industrial sites.

How?

It helps simplify facilities management, and **reduce energy and maintenance bills, enabling a 30% reduction on operating costs**



The power of understanding at your fingertips

ABB Ability™ Electrical Distribution Control System

How it works

Plug & Play Architecture

Leveraging the connectivity and sensing of ABB devices, we can model new outlines for innovation in the **low-voltage power distribution** business.

Emax 2 air circuit breaker, now becomes the smart hub by managing both **power and data flows**.

A **simple and integrated architecture** enabling truly plug & play approach.

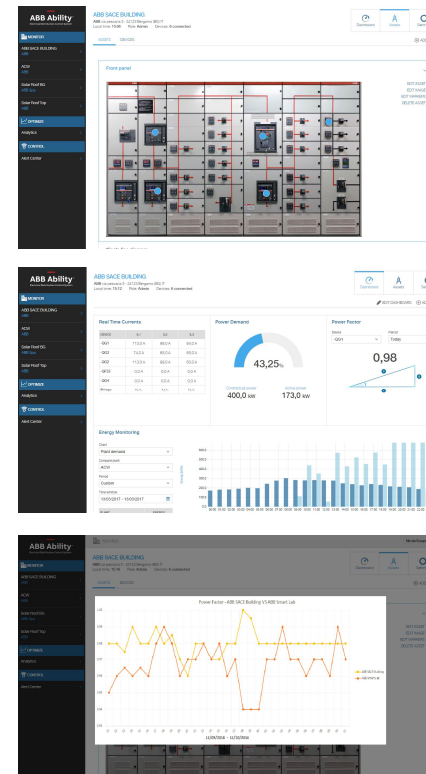
The evolution continues



ABB Ability™ Electrical Distribution Control System

Features and Benefits

Cloud-based Energy and Asset Management



Monitor

Discover plant performance, supervise the electrical system and allocate costs

Optimize

Analyze the relevant information, improve the use of your assets and take the right business decision

Control

Remotely implement an effective power management strategy to simply achieve energy savings

ABB Ability™ Electrical Distribution Control System

Case study

Italian water utility

ABB Ability™ Electrical Distribution Control System helps the **Consorzio di Bonifica Veronese** to remotely monitor and optimize two pumping stations and a hydroelectric power plant.

- **24'000 €** grants (Energy Efficiency Certificates)
- **30%** savings on operating costs
 - Optimization of personnel's tasks and costs
 - Downtime prevention
 - Removal of power quality penalties

Read the [press release](#)

Watch the [video](#)



ABB Ability™ Electrical Distribution Control System

Case study

Dubai solar power

ABB Ability™ Electrical Distribution Control System connects the ABB Dubai **312 kilowatt (kW) solar rooftop** part of the Shams Dubai initiative from **DEWA** Dubai Energy and Water Authority.

The installation is one of the largest of its kind in the region.

- **4%** savings on project's CAPEX
- **Better ROI estimation** on roof-projects thanks to data analytics
- Big Data to calculate **“customers’ solar potential”** and promote through app

Read the [press release](#)



ABB Ability™ Electrical Distribution Control System

The journey has just started

- **Broaden** the application range and features
- Expanding our capabilities around **advanced analytics** and simulation
- Lead operational efficiency to **reduce footprint** and **costs**
- Achieving risk-based **predictive maintenance** maturity to drive better resource optimization, reliability, safety and compliance
- **Big data** leading to better products

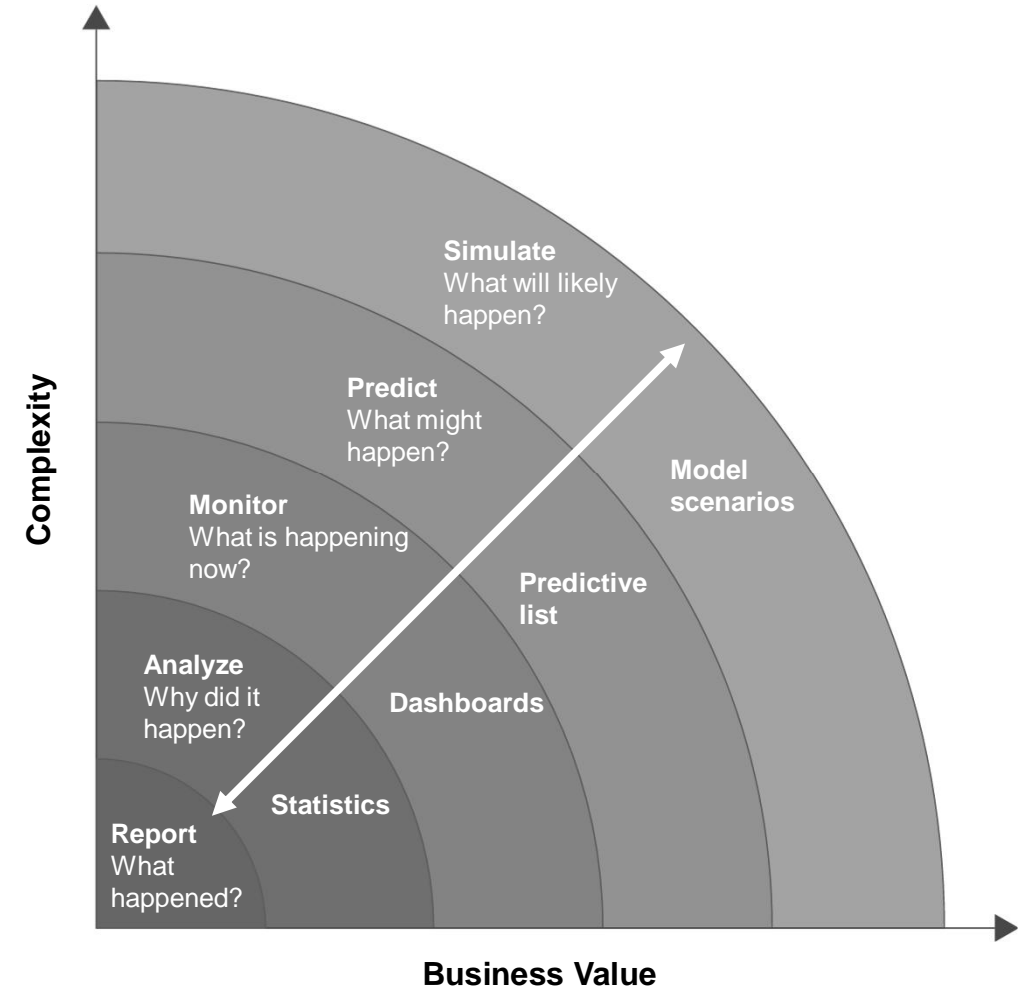


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Manage complexity

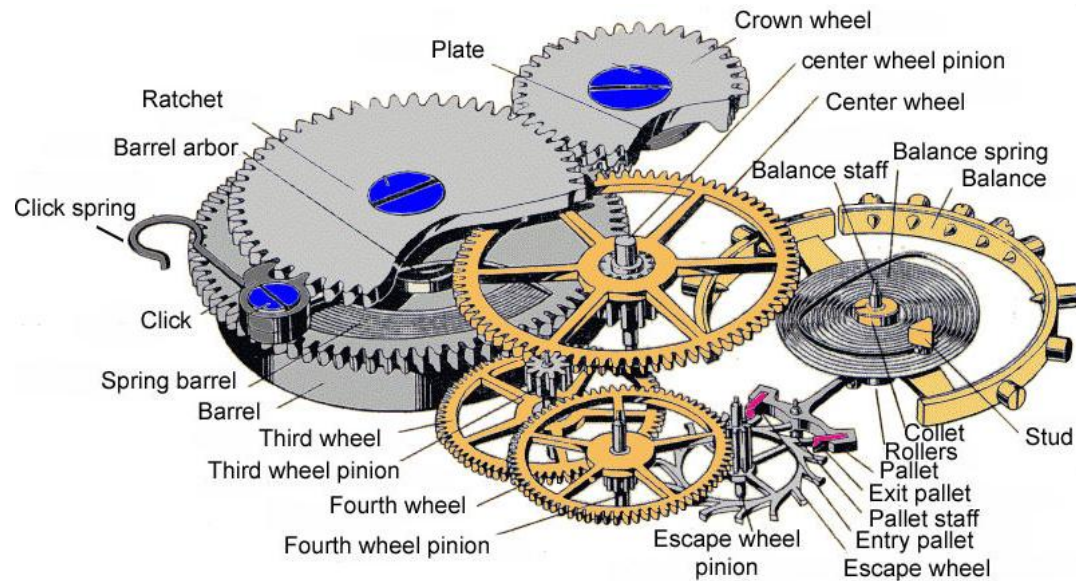


ABB Ability™ Electrical Distribution Control System

How it works

Embedded solution

Plug-in the **Ekip Com Hub** module on Emax 2 or Ekip UP and start Ekip Connect 3 wizard.

In **less than 10 minutes** the panel is connected to the cloud.

Plug & play:

- ACBs
- MCCBs
- MCBs
- Energy and Power meters

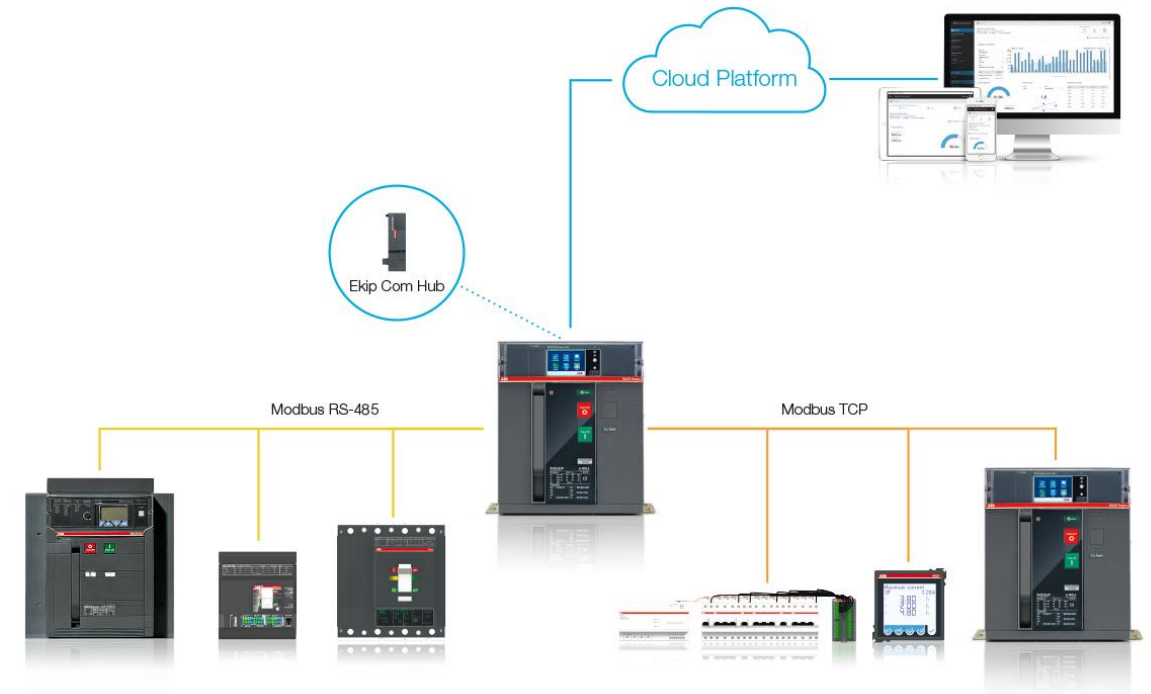


ABB Ability™ Electrical Distribution Control System

How it works

External solution

Connect devices to **Ekip E-Hub** DIN rail module.

Extended flexibility and application **from MV to sub-metering**.

Easy and fast configuration via Ekip Connect 3 wizard.

Plug & play:

- ACBs
- MCCBs
- MCBs
- Energy and Power meters
- Analog and Digital meters

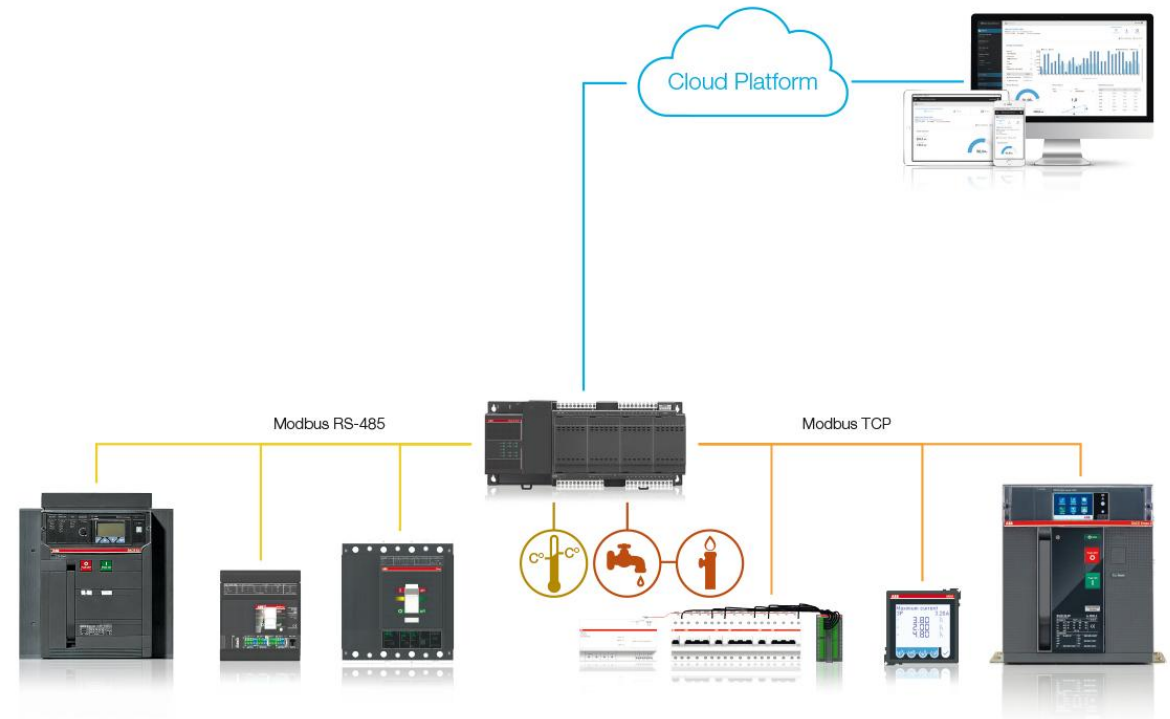


ABB Ability™ Electrical Distribution Control System

How it works

Cloud & Cybersecurity

Why cloud-computing

- **Innovation** and **security** as a standard
- **Scalability** as a drive for business advantage

Cybersecurity

- **Design and development:**
collaboration between ABB and Microsoft
- **Test, assessment and validation:**
ABB corporate research center and global IS, and specialized partner on IT security

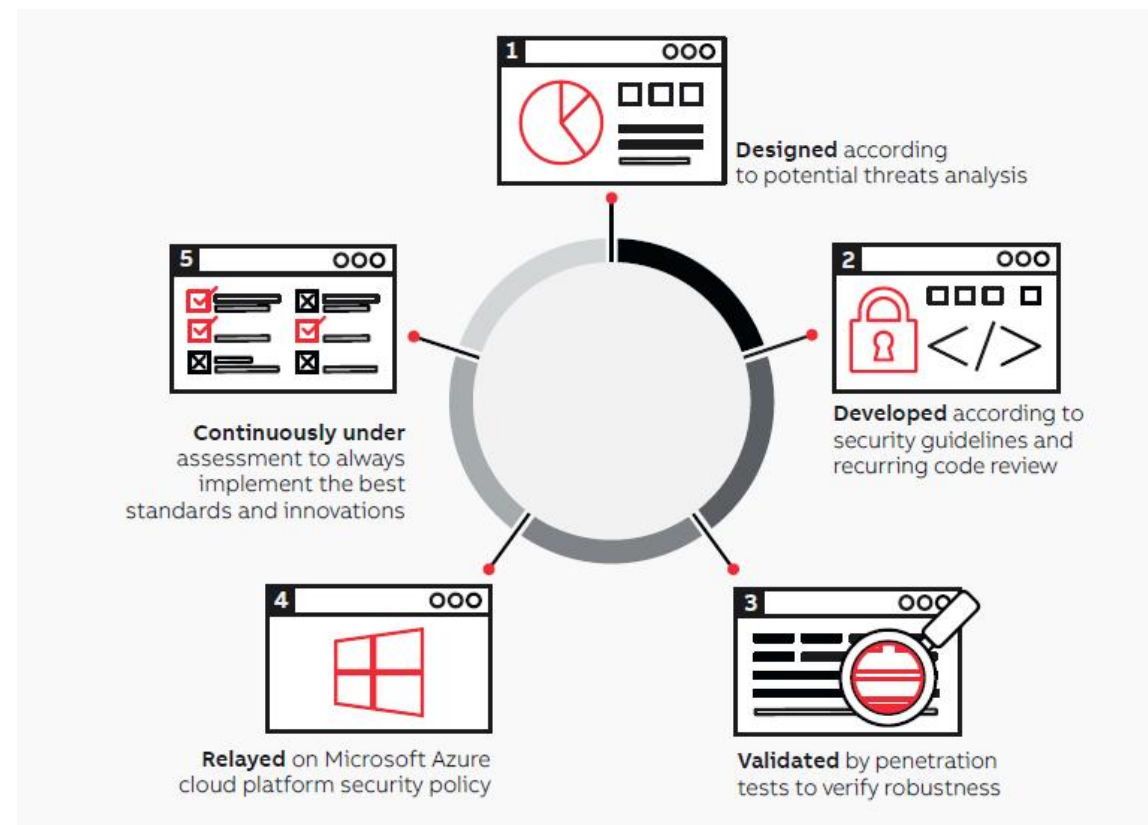


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Typical market

Building



Commercial Building, e.g. hotels, shopping malls, retailers and chain stores

Public facility



Public or institutional buildings related to the tertiary section, e.g. medical facility, sport and convention center, school

Industrial



Small-Mid size Industrial plant and Infrastructure

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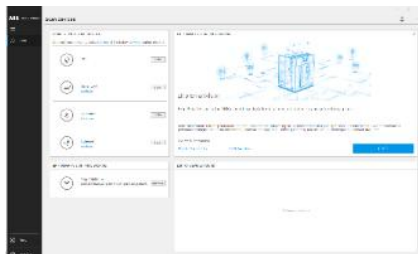
A simple shopping list

Hardware



- Ekip Com Hub
 - Emax 2 or Ekip UP embedded communication module for cloud-connectivity
- Ekip E-Hub
 - DIN-rail mounted communication module for cloud-connectivity

Commissioning tool



- Ekip Connect 3 Software available via free download

Services



- ABB Ability™ EDCS
 - subscription to monitor, optimize and control your systems
 - Each subscription is valid for one site, up to 15 users' access



ABB