

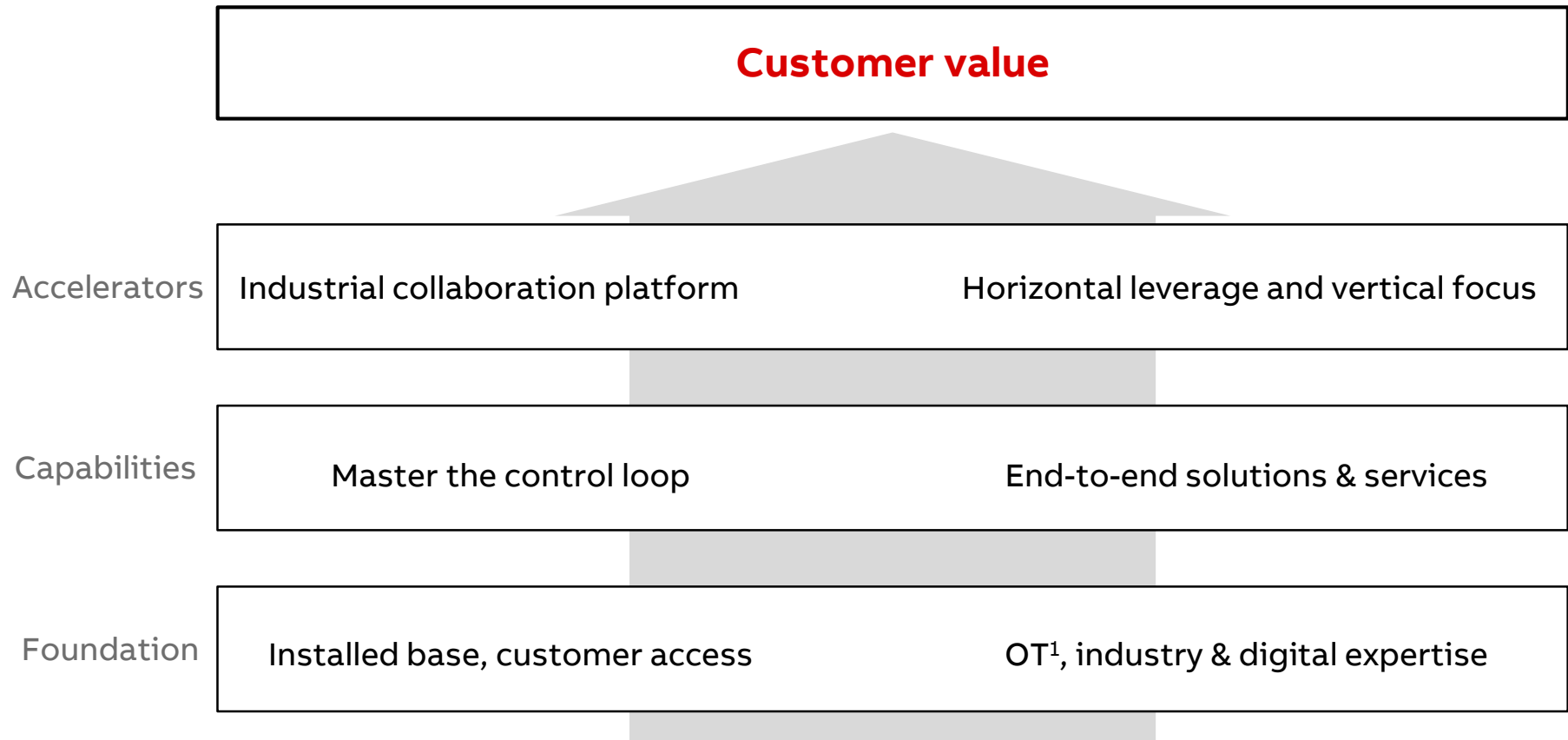
ABB LTD, CAPITAL MARKETS DAY, OCTOBER 4, 2016

Quantum leap in digital

Guido Jouret, Chief Digital Officer

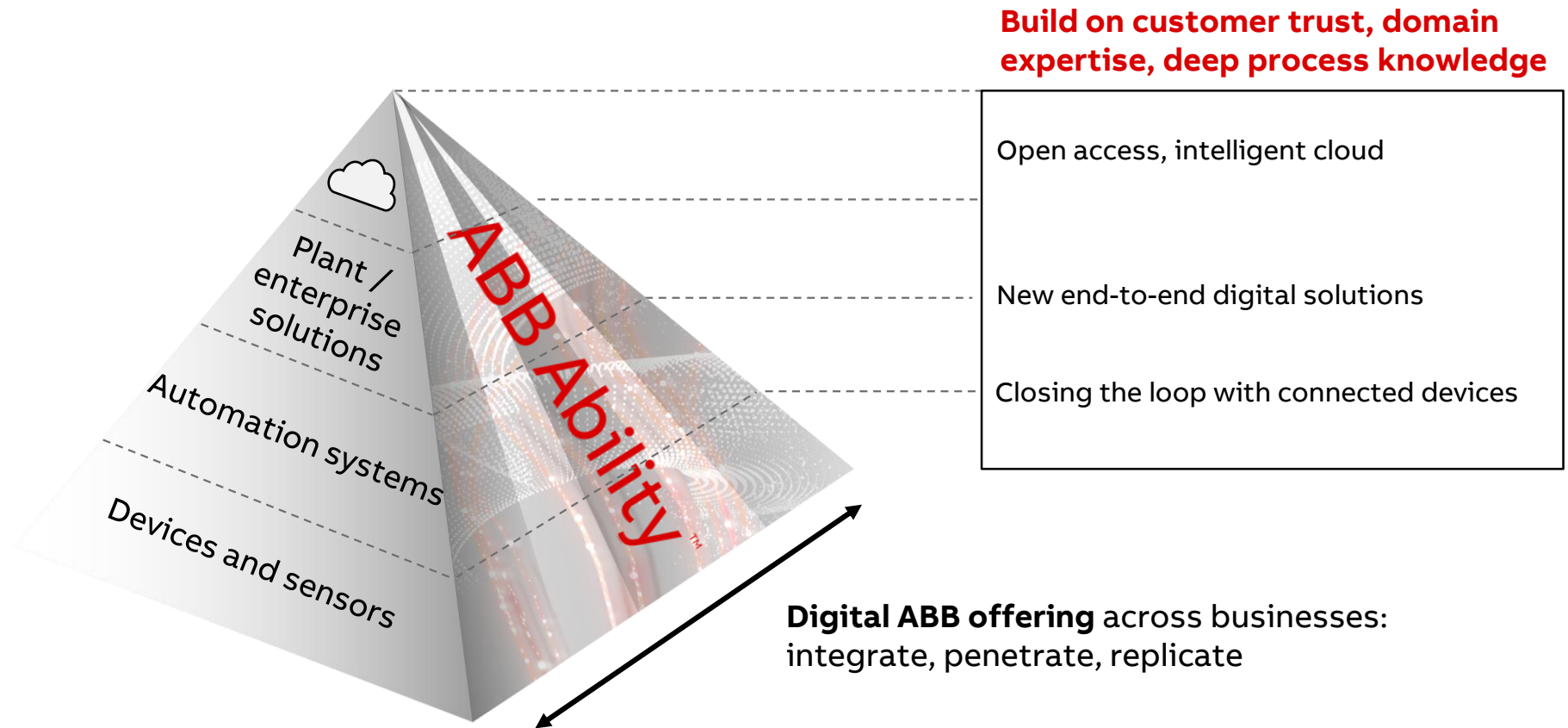


What it needs to create customer value through digital



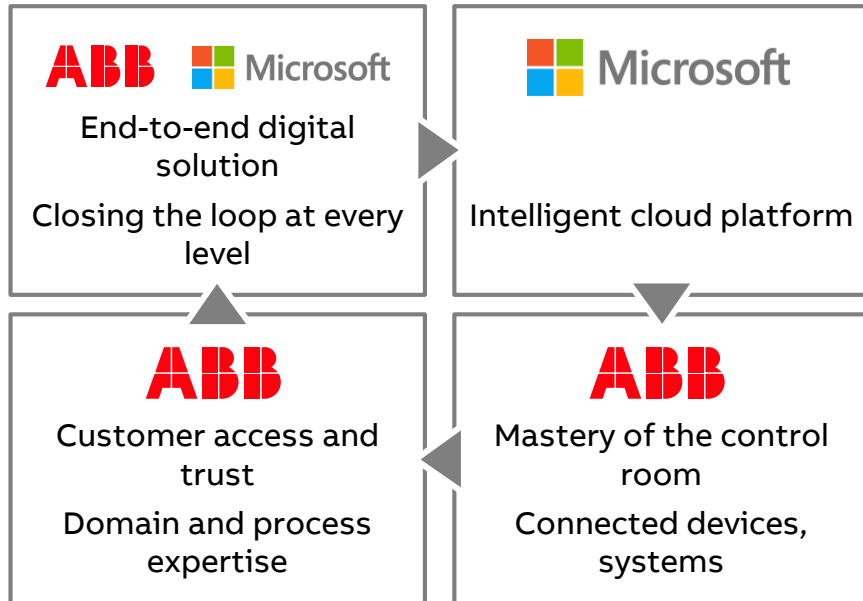
Unlocking the ABB potential in digital

ABB Ability™: creating one common offering for digital end-to-end solutions



Far-reaching partnership with Microsoft

Developing next-generation digital solutions



Customer benefits

Integrated digital platform –
from device to system to cloud

Combined strength –
each partner leading in its respective area

Together building the world's largest industrial cloud platform

ABB's end-markets are at the beginning of digitalization

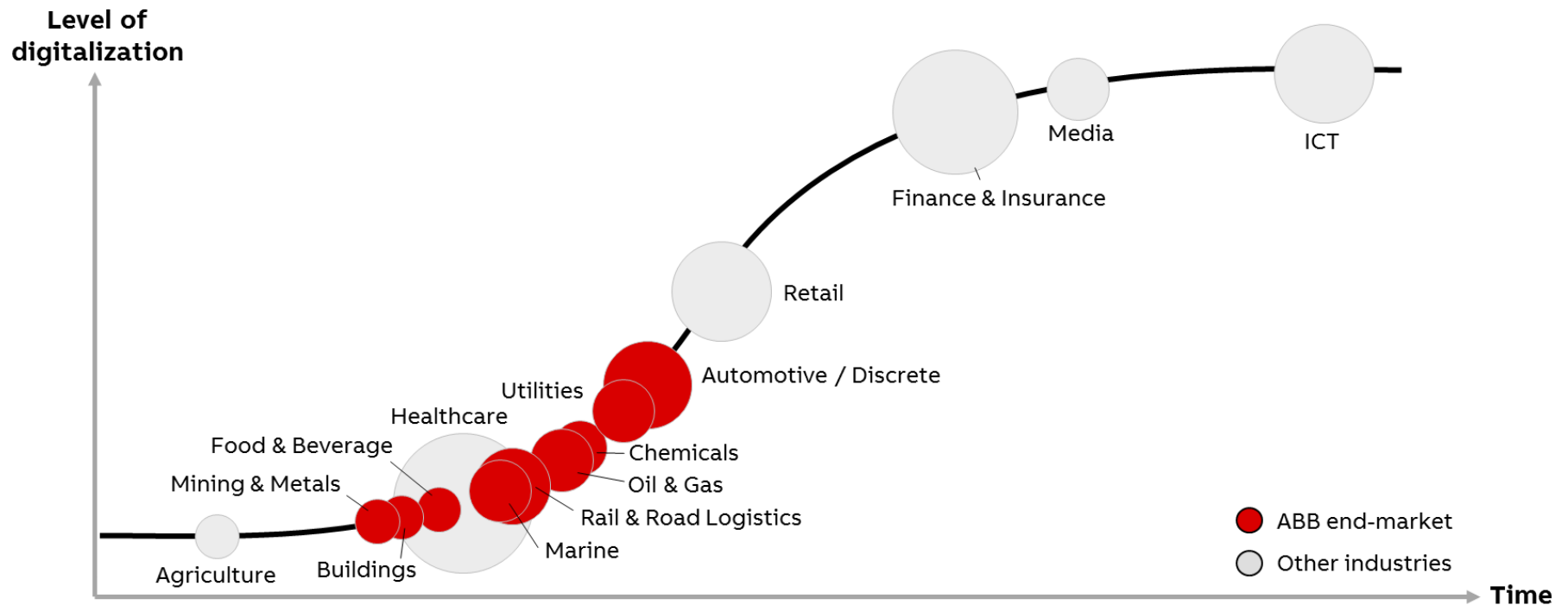


ABB already delivers unique digital value to customers

Examples of customer value creation with available solutions

Utilities

Asset Health Center

Customer benefit: reduction in outage time, less maintenance

Mining

Underground

Customer benefit: more uptime, lower energy consumption

Automotive

Robotics

Customer benefit: faster planning, less downtime

Marine

Integrated Operations

Customer benefit: fuel savings, less maintenance and repair, less administration

Building

Automation

Customer benefit: lower energy consumptions, more comfort

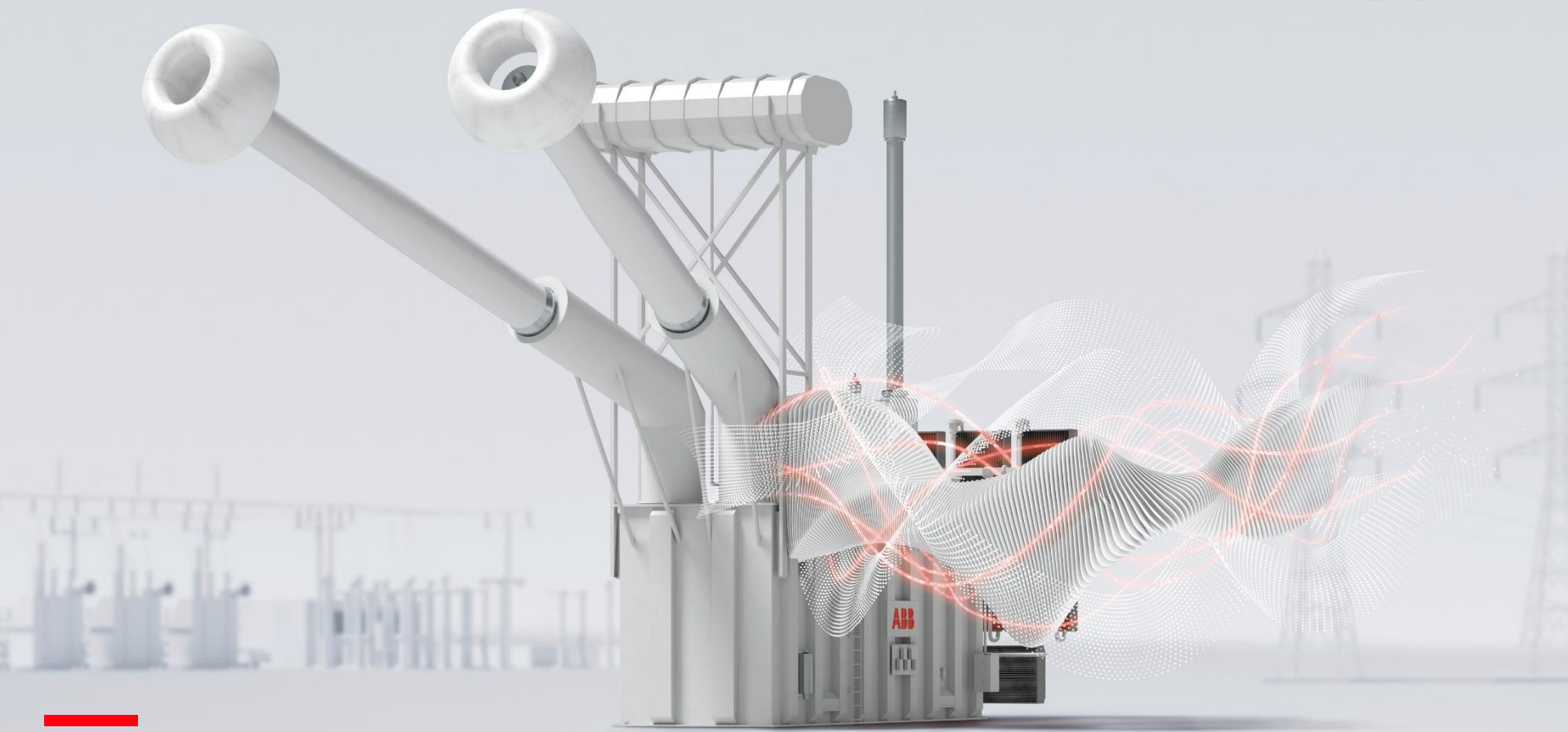


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Digital solutions for transmission & distribution

ABB's end-to-end asset management

Massimo Danieli, Managing Director of Business Unit Power Grid Automation

ABB has a huge opportunity to leverage the energy revolution

Relevance

\$80 bn annual costs from power interruptions to US electricity consumers¹

> 95% of electricity goes through substations²

\$160 bn annual OPEX and \$180 bn CAPEX spending in the utility industry (transmission & distribution)³

Challenges

In mature economies a significant portion of power grid assets have reached the design lifespan

Critical substation assets have isolated condition monitoring systems, if any

Renewable energy needs flexible transmission



ABB unlocks significant customer value through digital

Bridging the gap between the physical and digital worlds

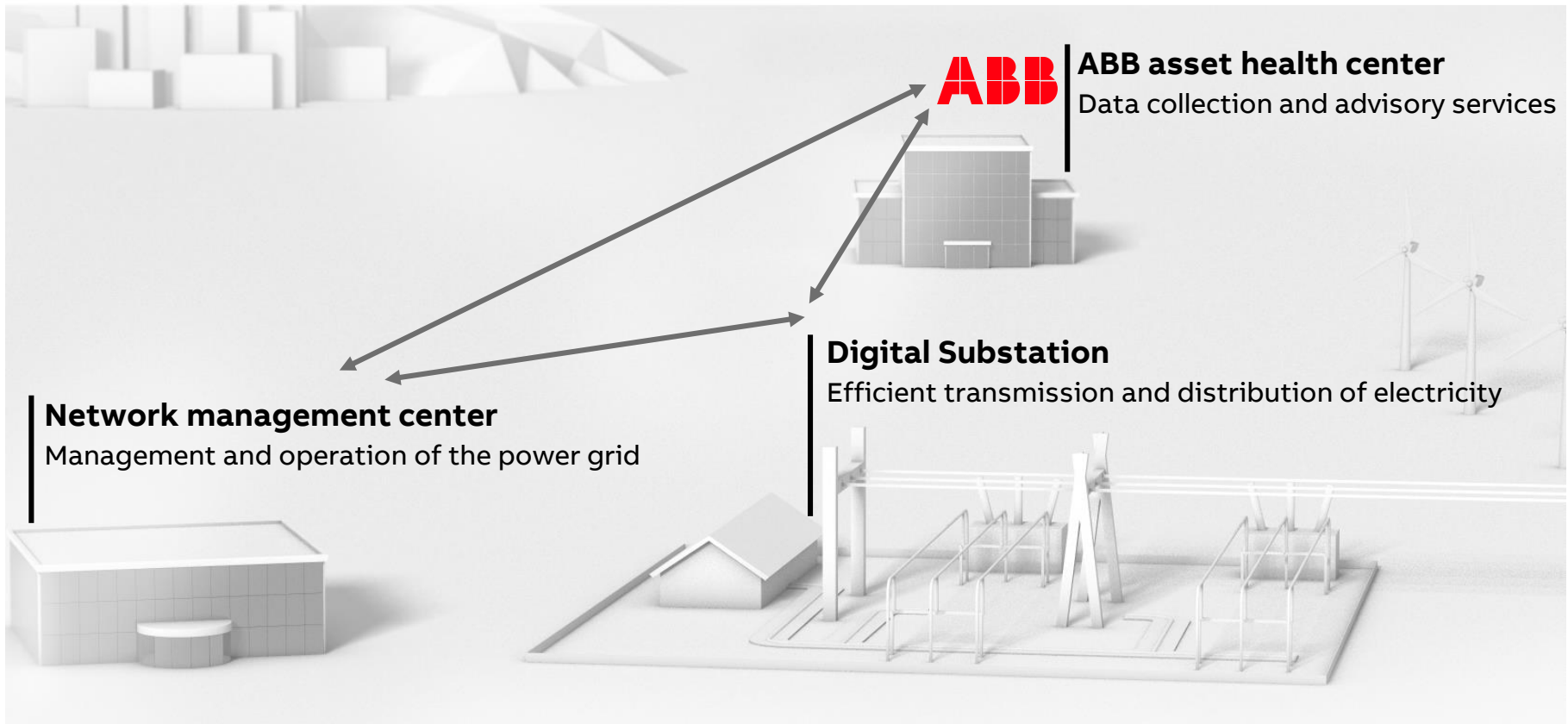


ABB unlocks significant customer value through digital

Higher efficiency in operation and maintenance

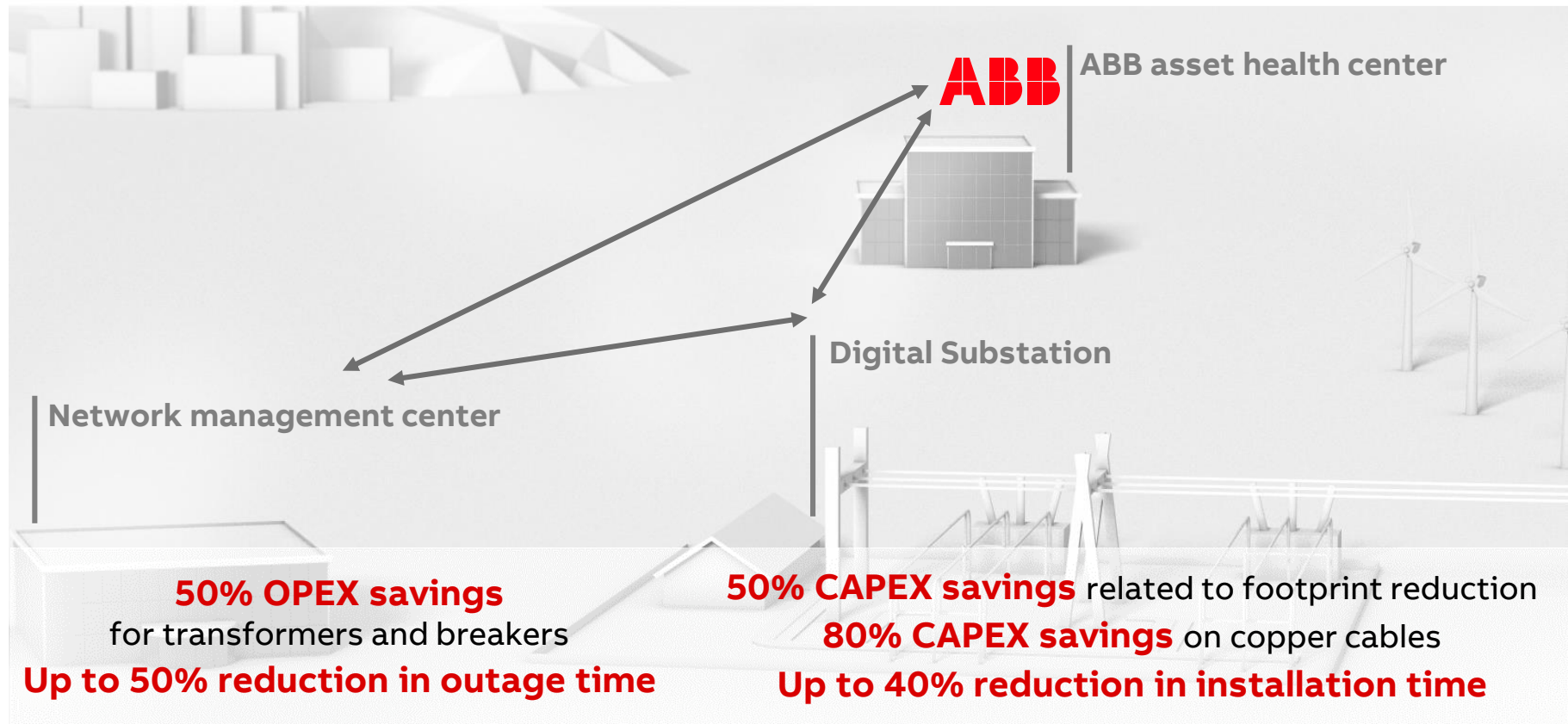


ABB unlocks significant customer value through digital

Resulting in \$360,000 annual savings per substation

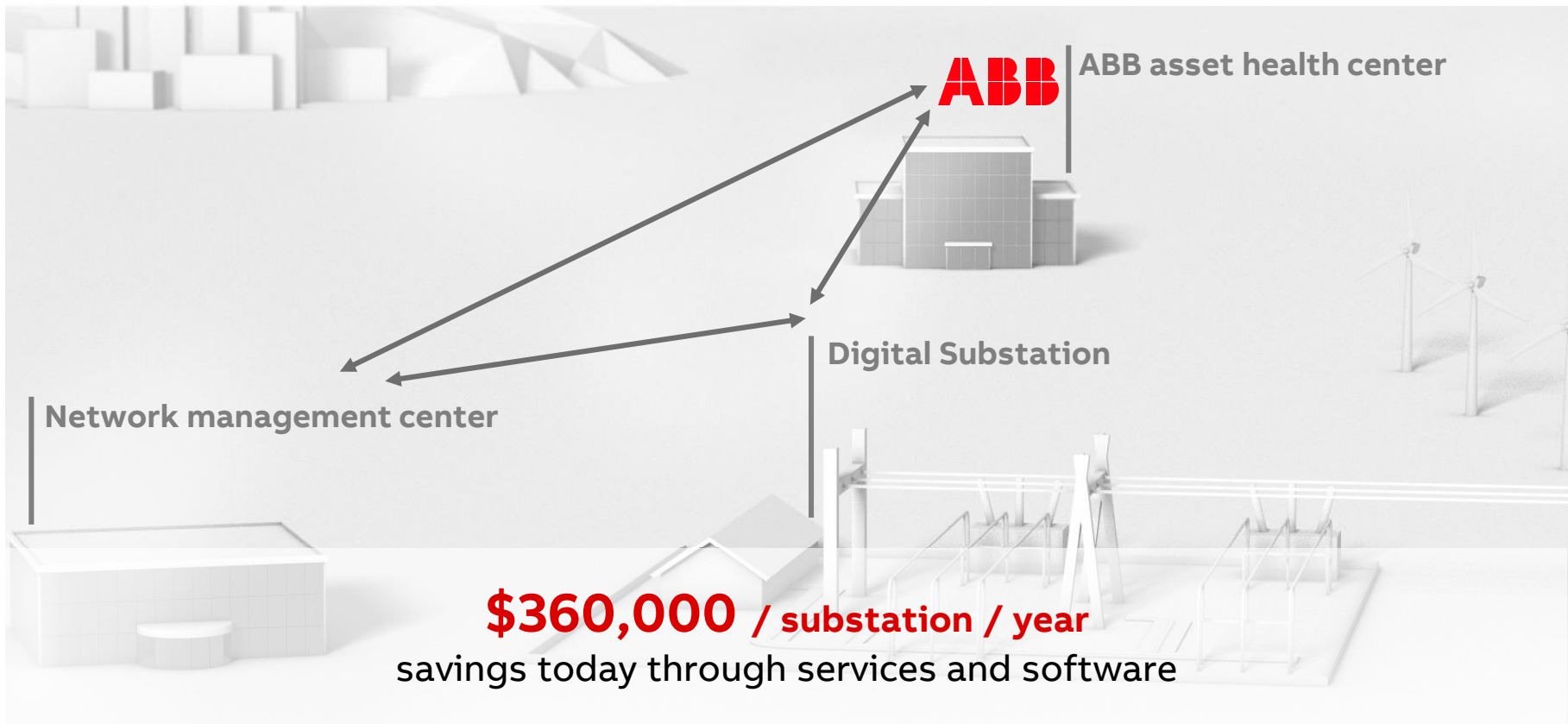


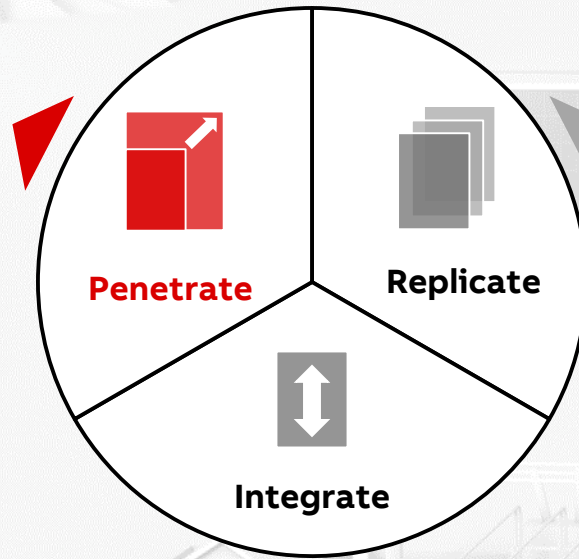
ABB unlocks significant customer value through digital

\$23 bn in potential customer savings throughout the transmission and distribution market

\$23 bn

yearly saving potential
through services and software

\$360,000 / substation/ year
x
65,000 substations¹



Replicate risk-based fleet
maintenance approach in
other ABB markets

Integrate and pull-through
ABB and third-party offerings

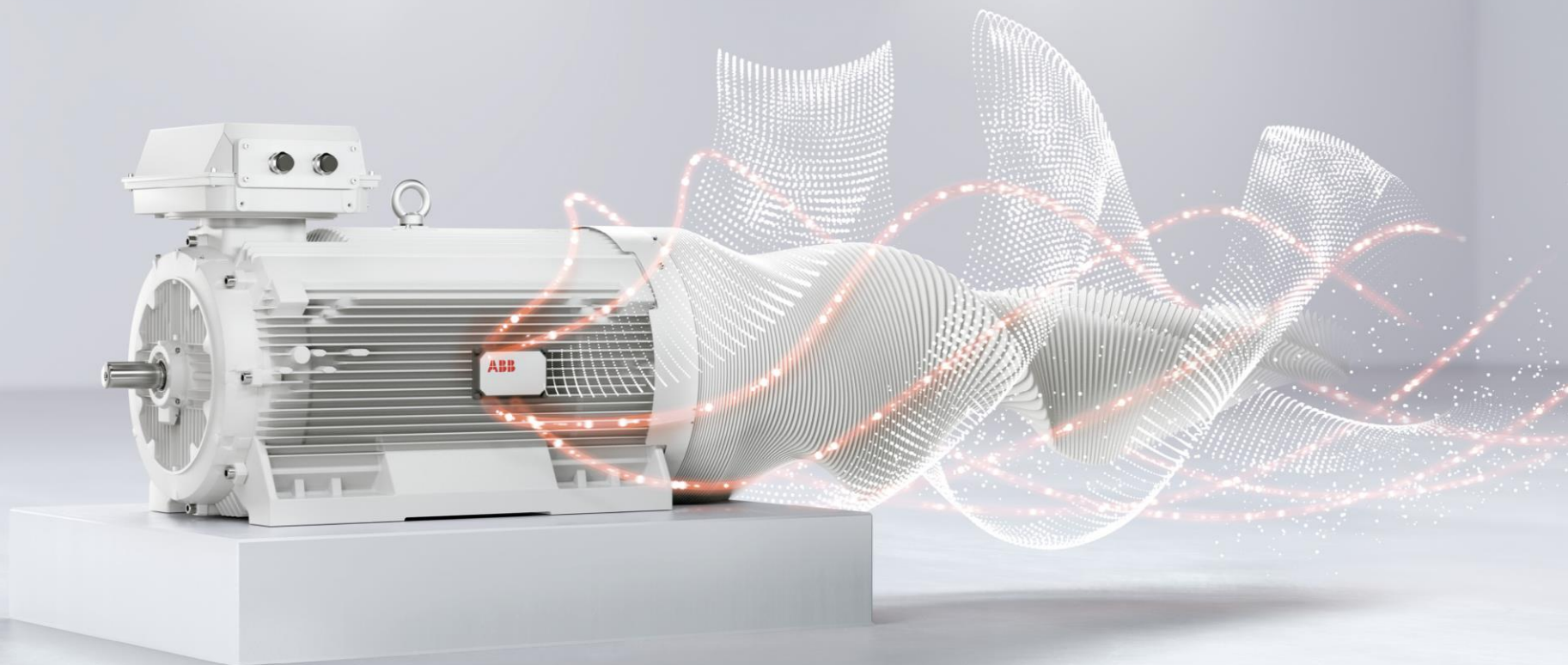


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Digital solutions for underground mining

ABB's integrated mining offering

Clive Colbert, Global Product Group Manager – Service Business Unit Process Industries

ABB has a huge opportunity to connect existing islands of information in underground mining

Relevance

18 tons of minerals and metals are produced annually per person in developed countries¹

>7,5 mn people working in underground facilities²

\$230 bn annual OPEX and \$60 bn annual CAPEX spending in the underground mining industry³

Challenges

Declining ore grades, deeper and more complex underground mines in more remote locations

Inefficient utilization of mobile machines

High energy consumption



ABB unlocks significant customer value through digital

From the ventilation system to the cloud – ABB remote control center closes the loop

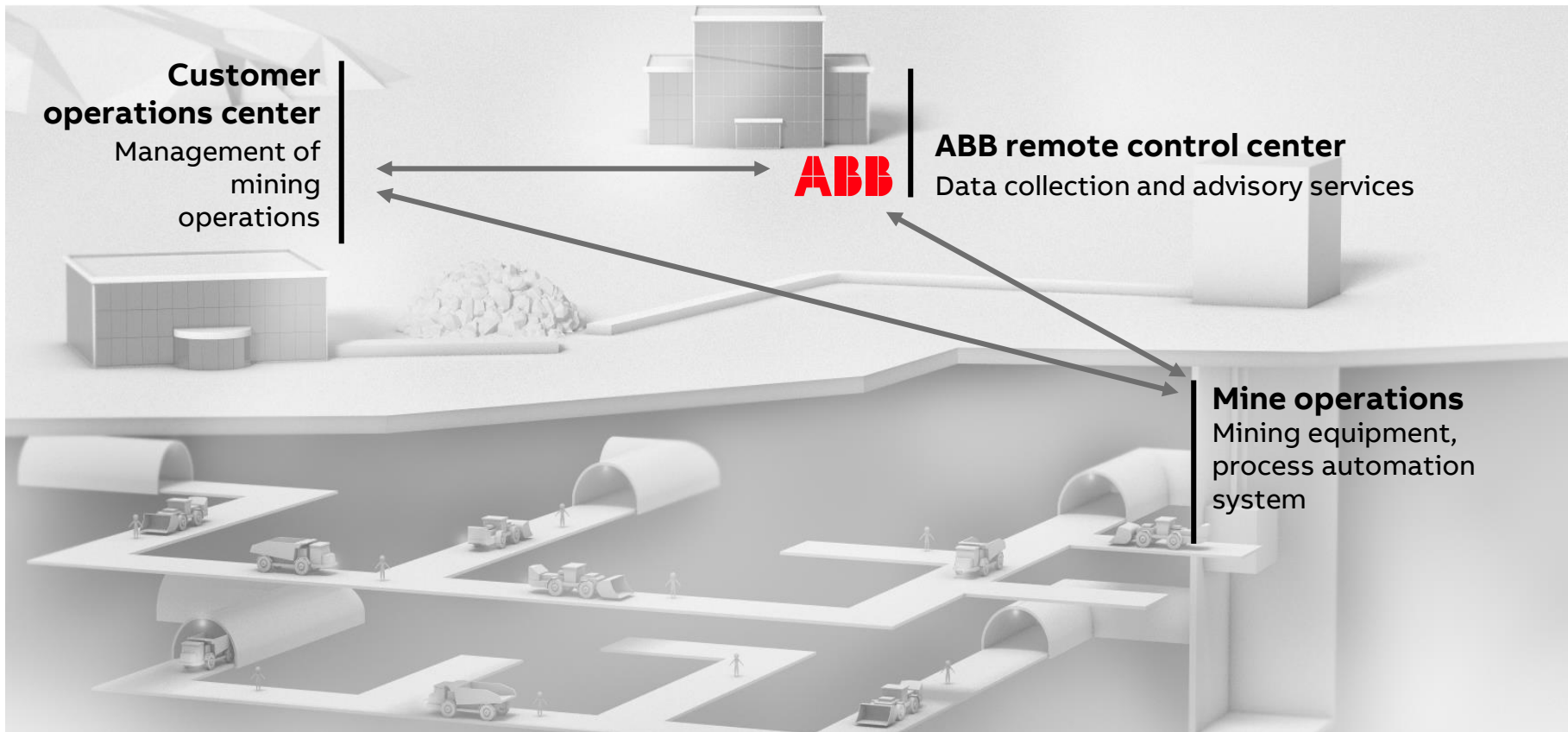


ABB unlocks significant customer value through digital

Optimizing mining processes in real-time

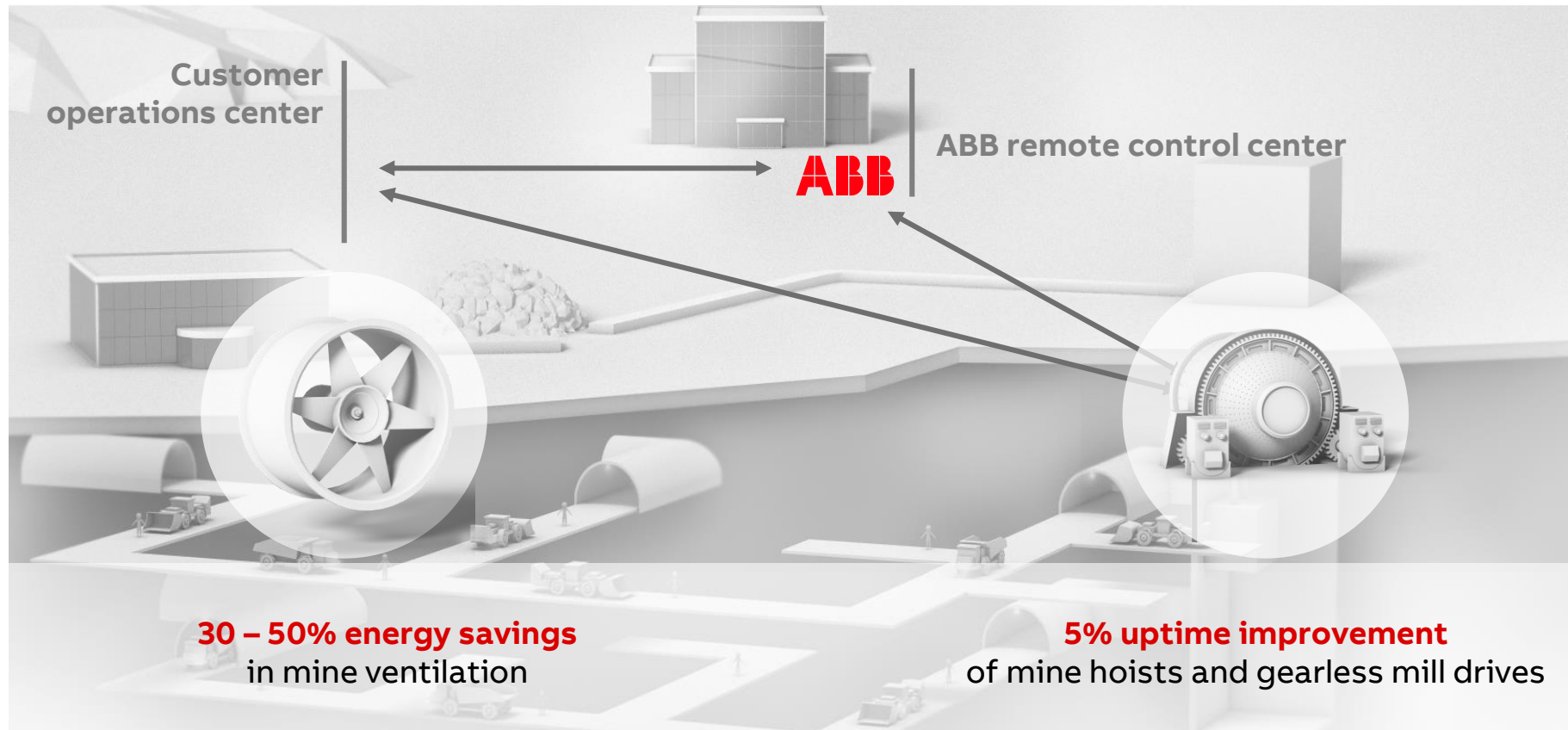


ABB unlocks significant customer value through digital

Resulting in \$5 mn annual savings per underground mine

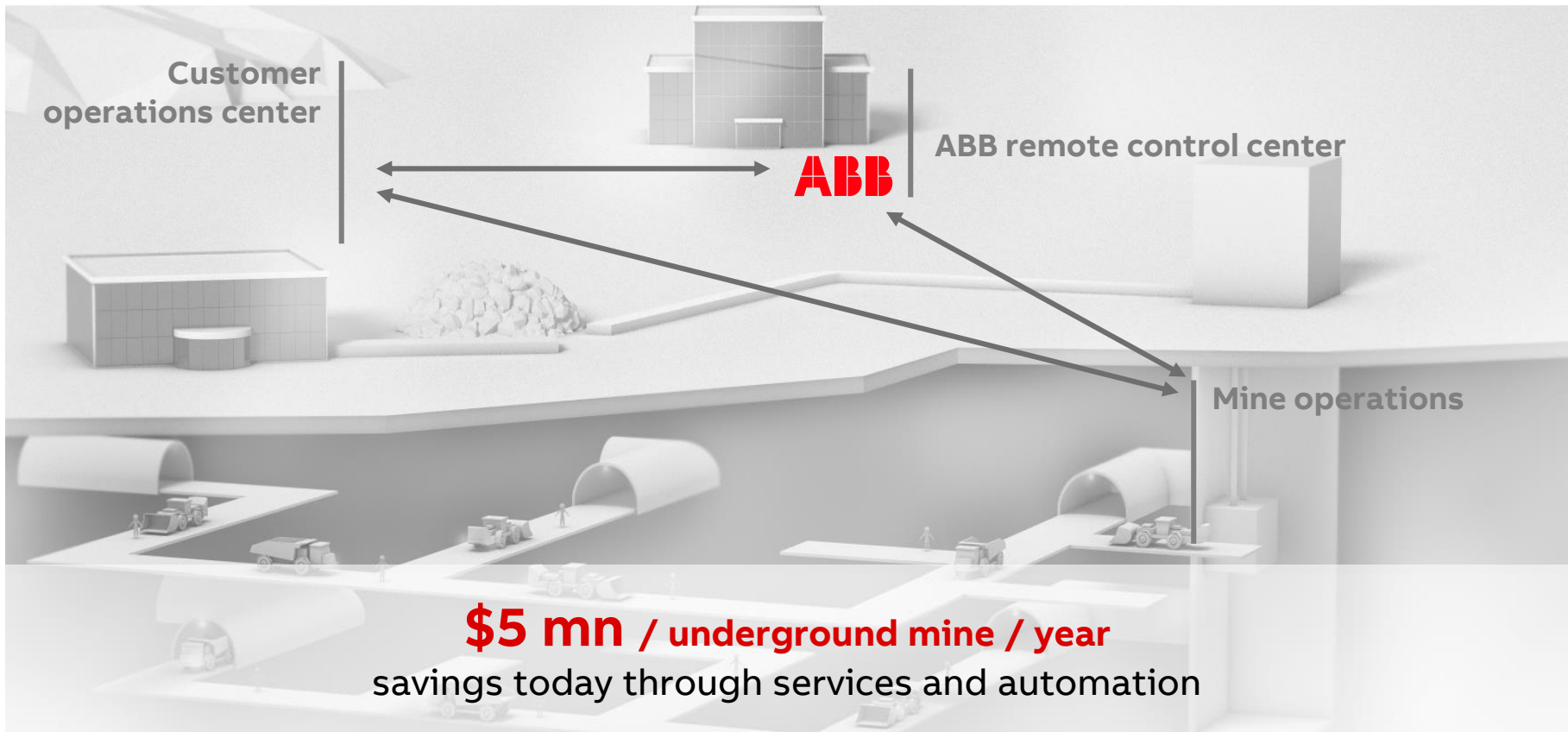
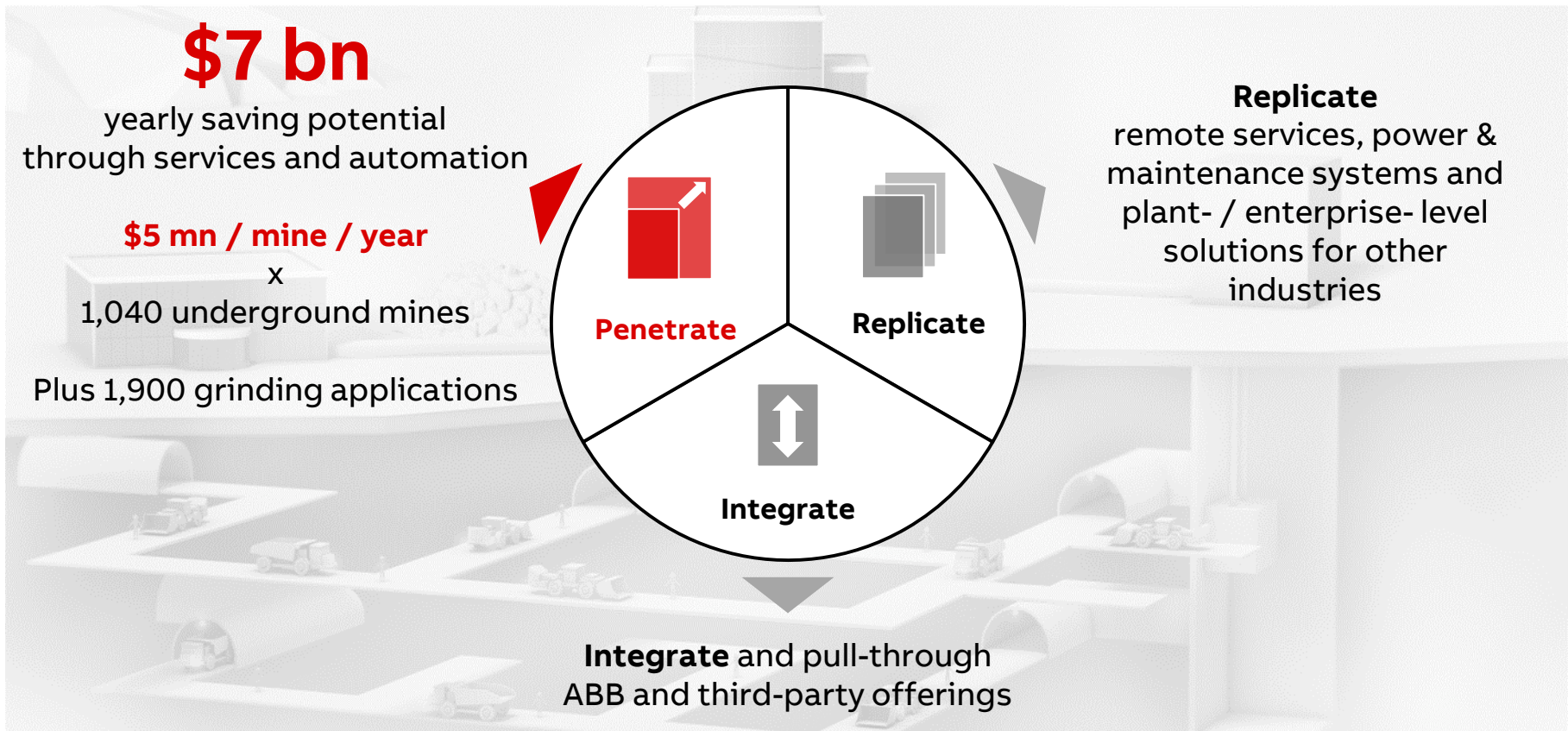


ABB unlocks significant customer value through digital

\$7 bn in potential customer savings across the underground mining market



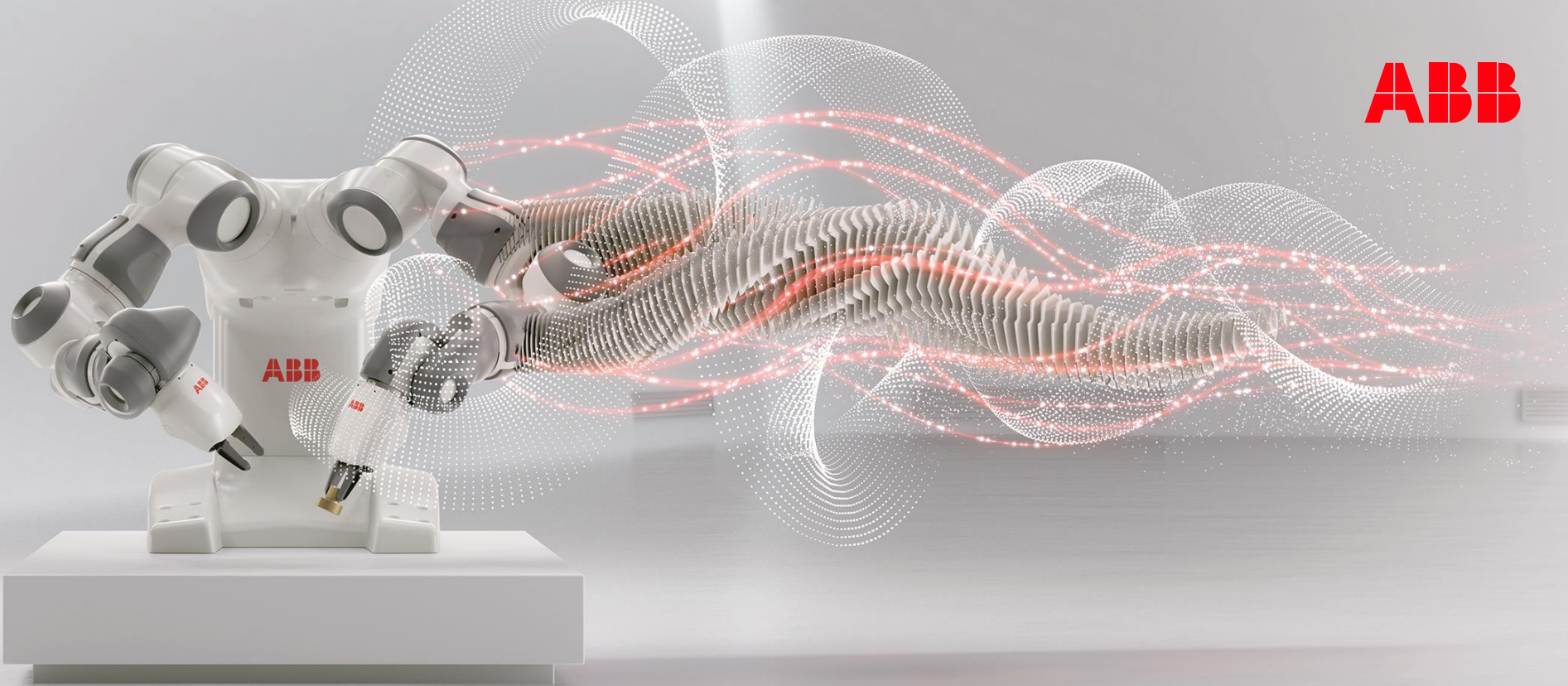


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Digital solutions for automotive robotics

ABB's engineering and operations offering

Per Vegard Nerseth, Managing Director of Business Unit Robotics

ABB has a huge opportunity to shape the automotive industry

Relevance

With >500,000 units, the automotive industry is the largest user of industrial robots¹

90 mn cars are produced annually²

\$860 bn annual OPEX and \$215 bn annual CAPEX spending in the automotive industry³

Challenges

Shorter launch cycles for car models

Insufficient shop-floor commissioning tools

\$1.3 mn is the average cost of one-hour maintenance delay in a car factory⁴



ABB unlocks significant customer value through digital

Optimizing the whole value chain: engineering , commissioning, operations and maintenance

Robot Studio



Connected Services

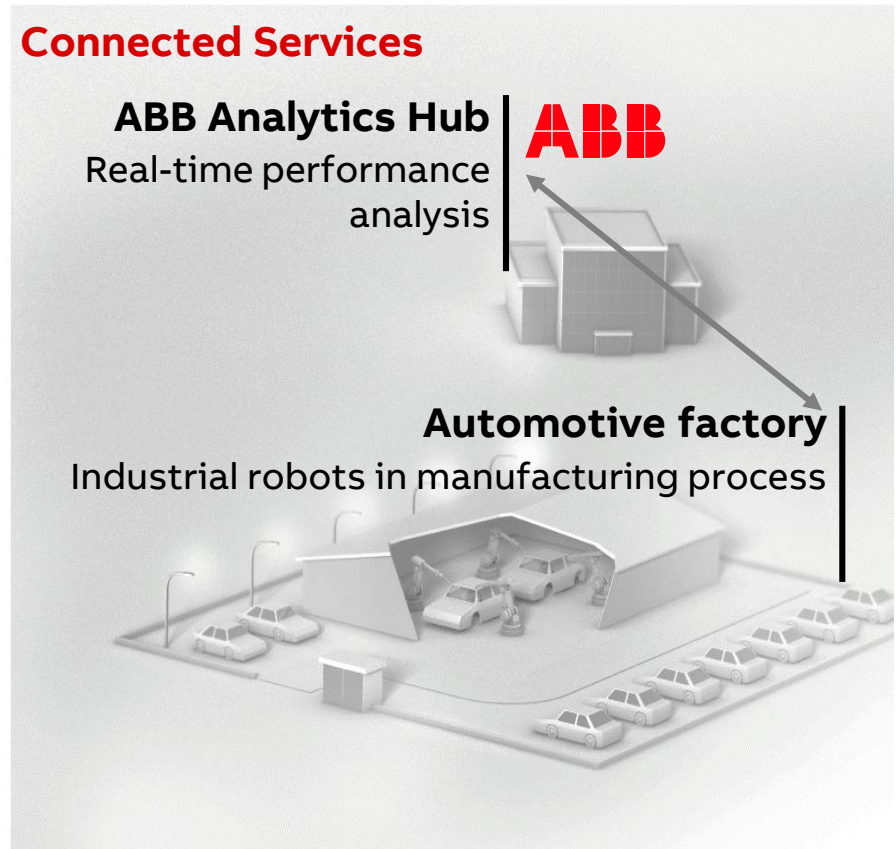


ABB unlocks significant customer value through digital

Robot Studio: engineering efficiency and faster ramp-up to full production volume

Robot Studio

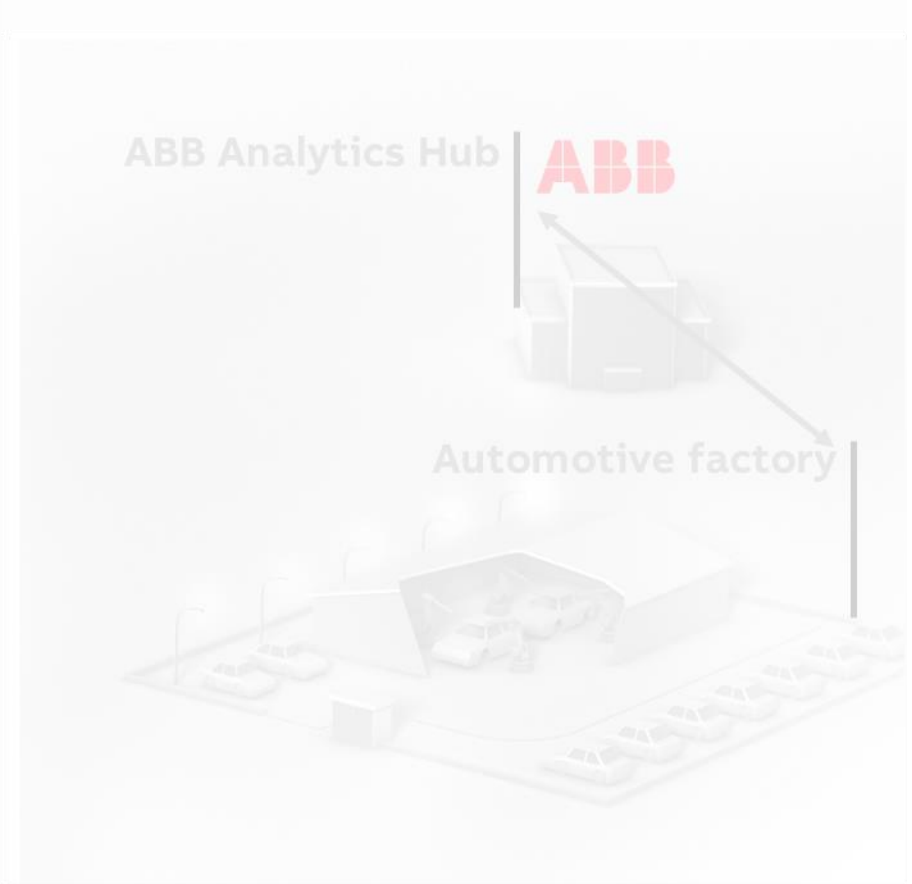


ABB unlocks significant customer value through digital

Connected Services: improved performance and reliability with less downtime



Connected Services

ABB Analytics Hub
Real-time performance
analysis

ABB

Automotive factory
Industrial robots in manufacturing process

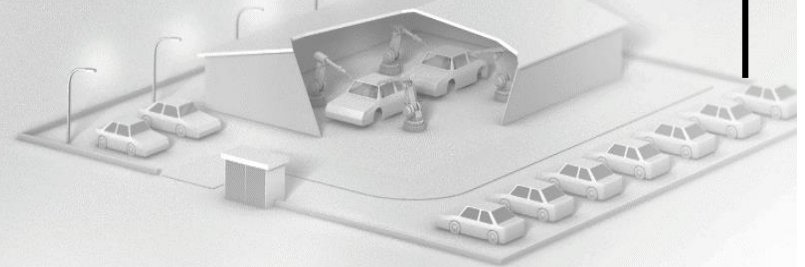


ABB unlocks significant customer value through digital

Optimizing planning and production

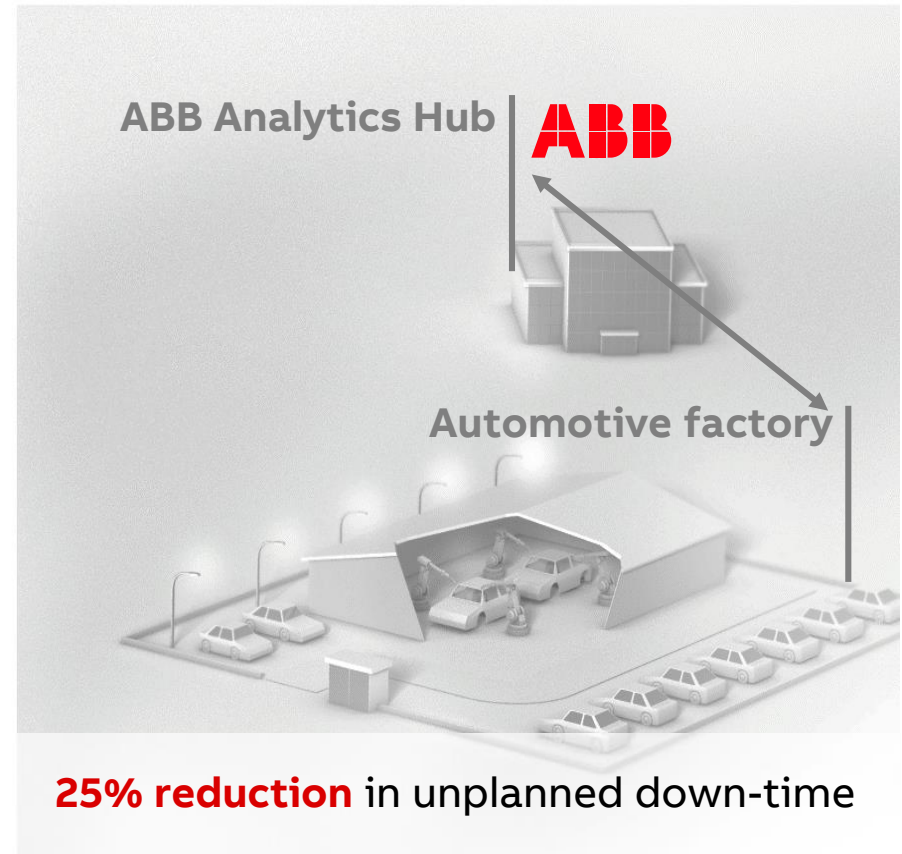


ABB unlocks significant customer value through digital

Resulting in \$19 mn annual savings per plant

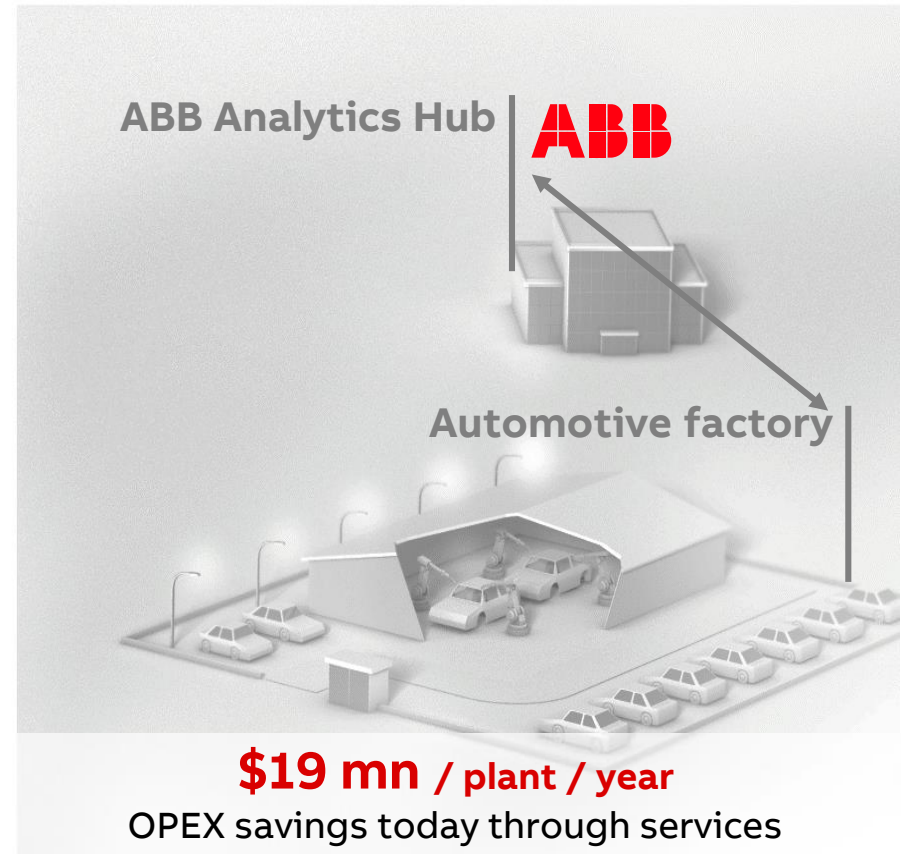
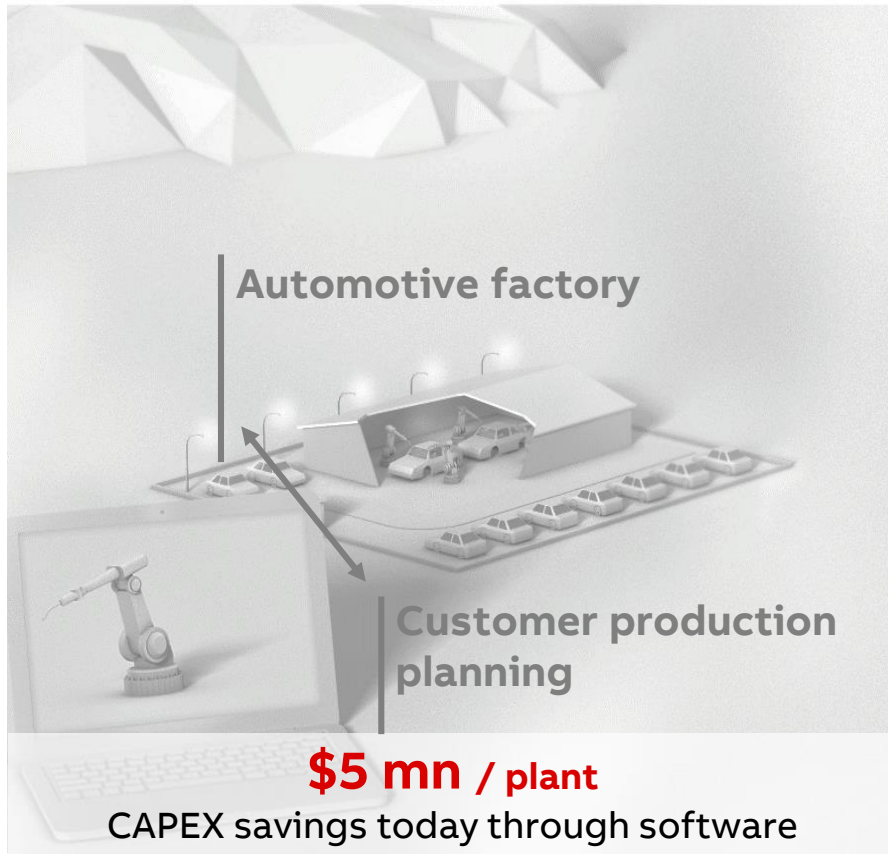


ABB unlocks significant customer value through digital

\$15 bn in potential customer savings across the market

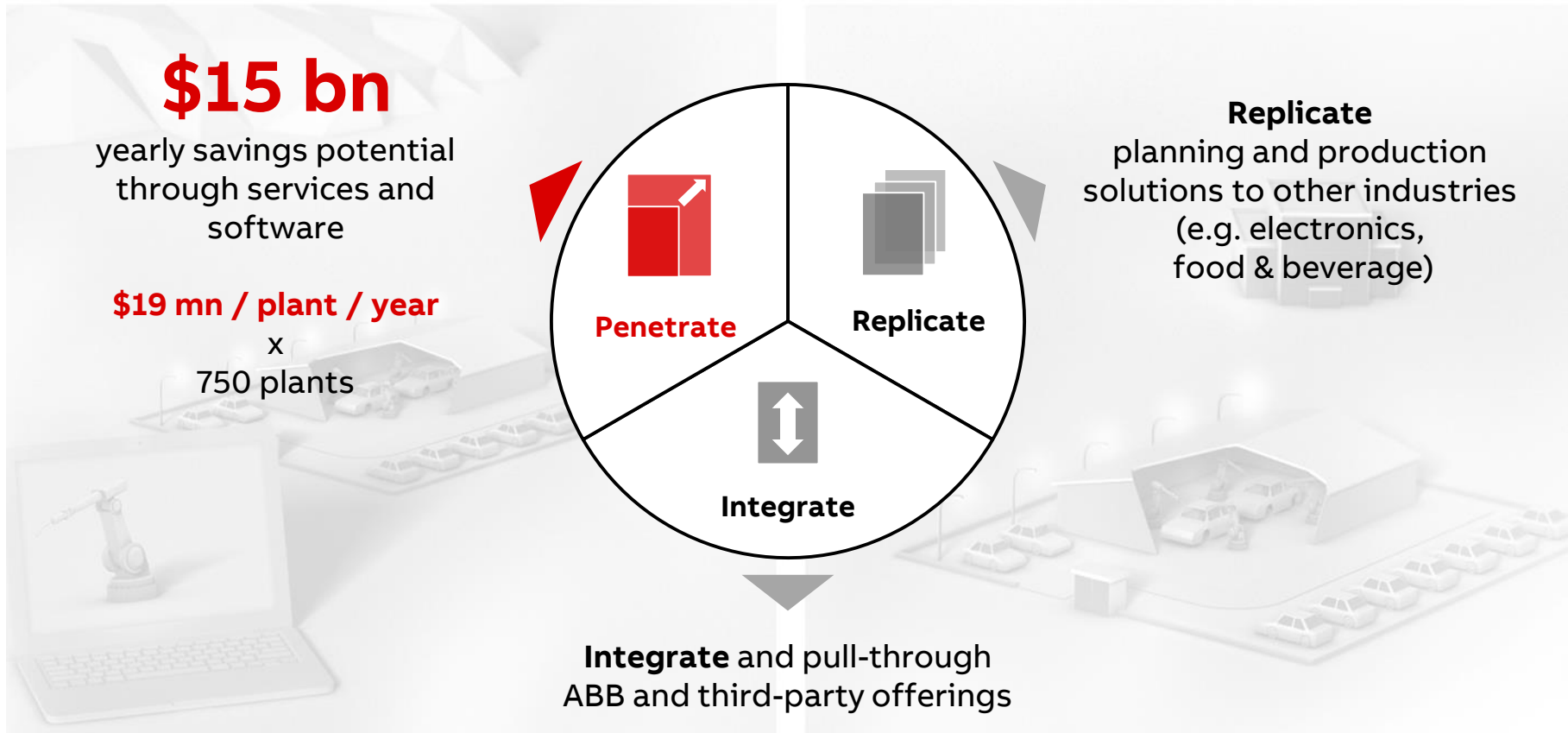


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Digital solutions for marine industry

ABB Integrated Operations

Juha Koskela, Managing Director of Business Unit Marine and Ports

ABB has a huge opportunity to drive efficiency in marine industry

Relevance

Global fleet of more than 90,000 vessels at sea¹

Consuming >400 mn tons of fuel per year²

\$450 bn annual OPEX spending in marine industry³

Challenges

New environmental, energy-efficiency and safety regulations

Overcapacity, low freight rates, slow economic growth

Incomplete and disconnected operational information



ABB unlocks significant customer value through digital

From the propeller to the cloud – ABB Integrated Operations closes the loop

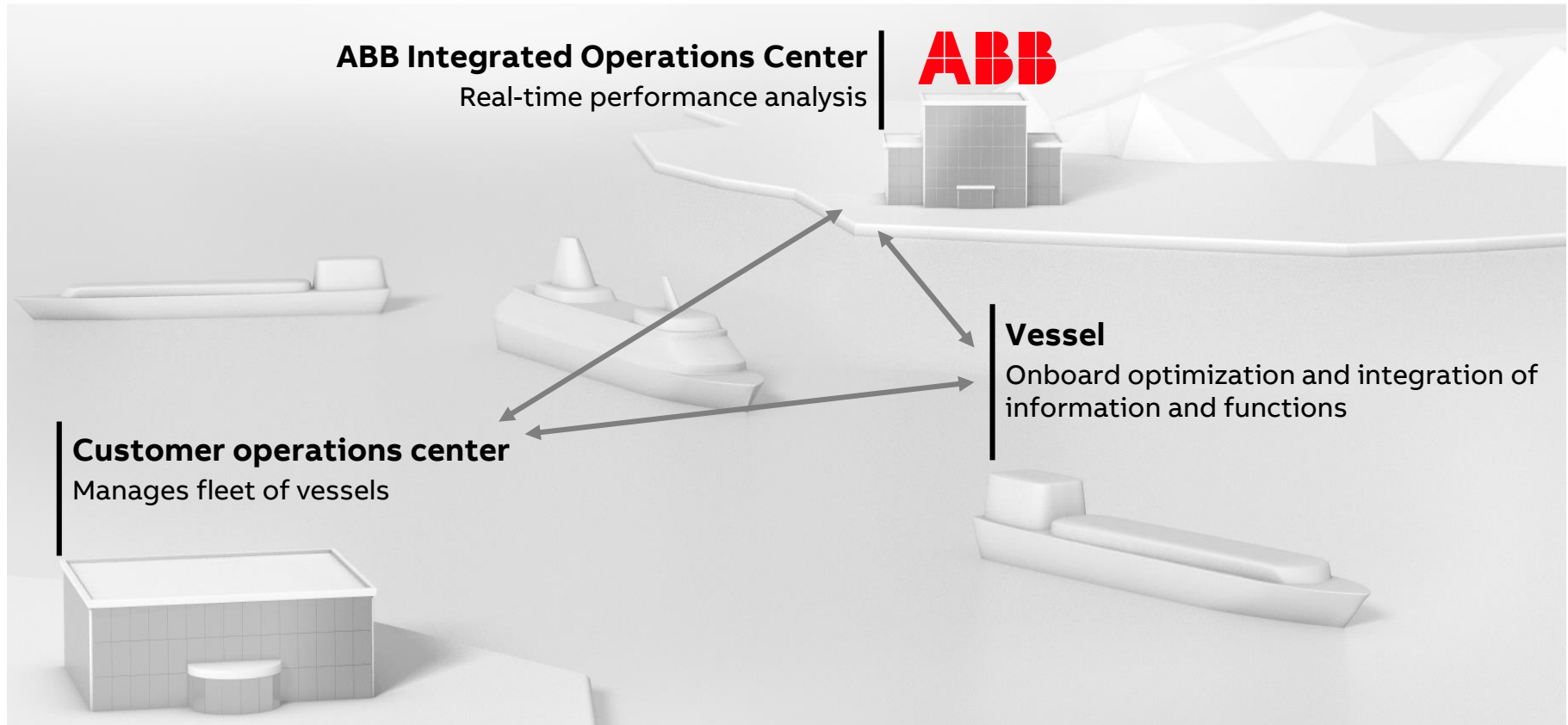


ABB unlocks significant customer value through digital

Higher productivity in overall operations and on the vessel

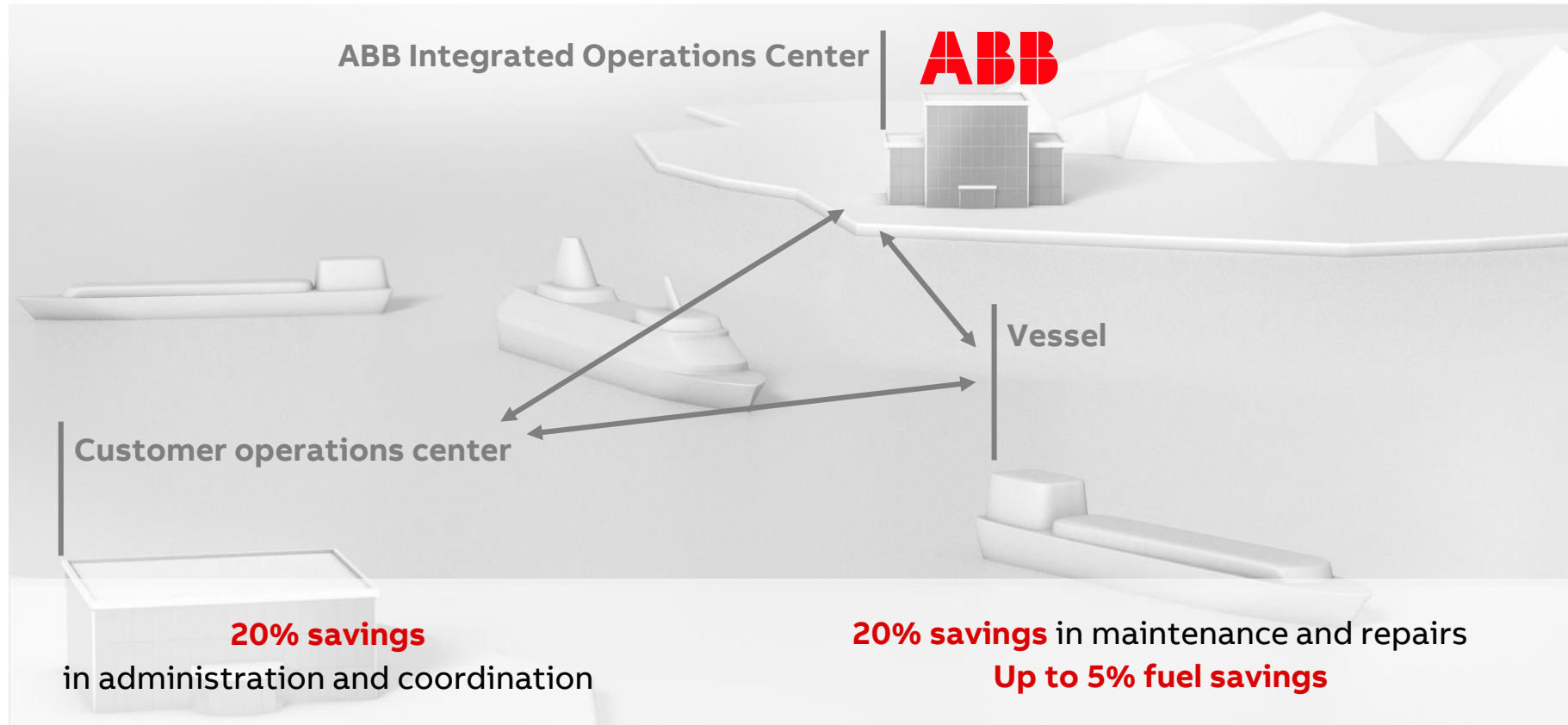


ABB unlocks significant customer value through digital

Resulting in \$350,000 savings per vessel

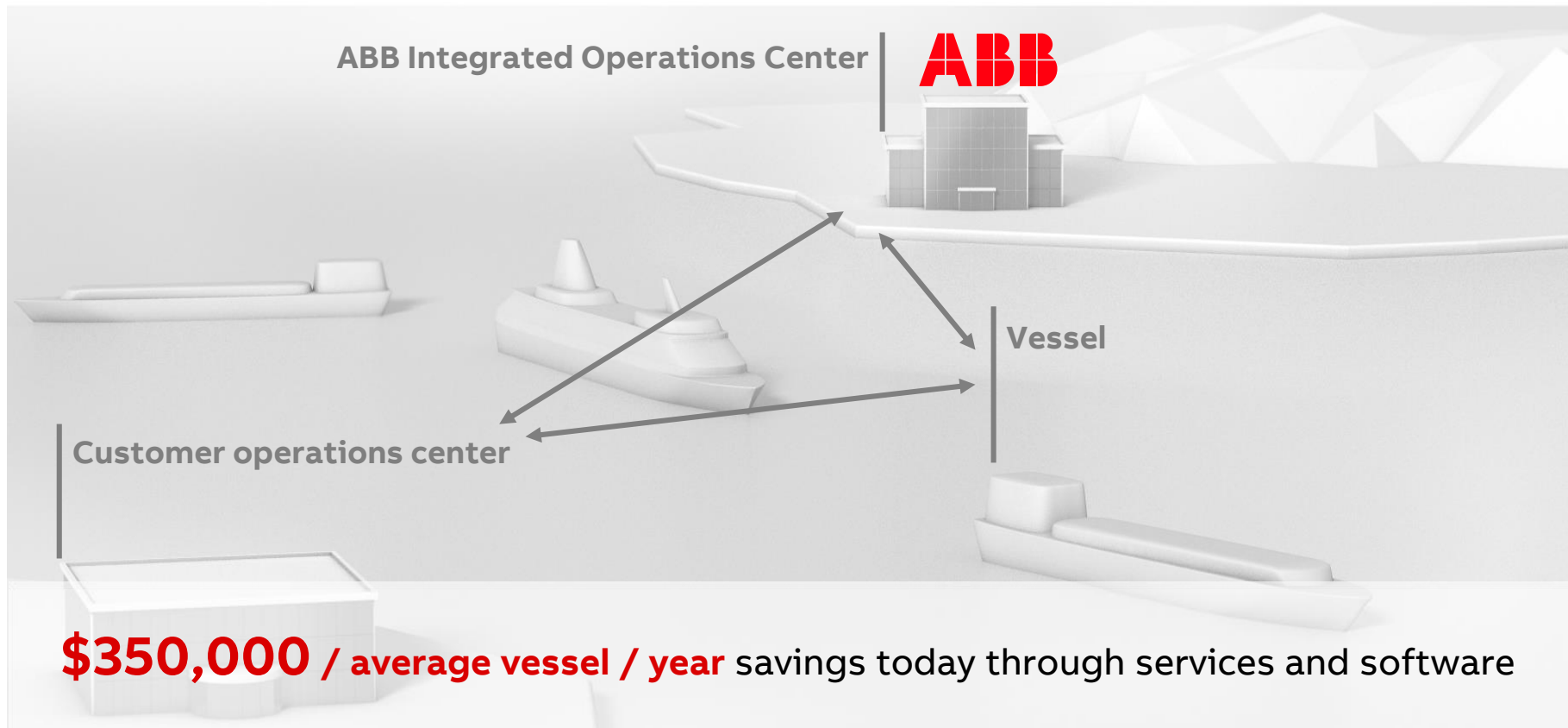


ABB unlocks significant customer value through digital

\$32 bn in potential customer savings across the market

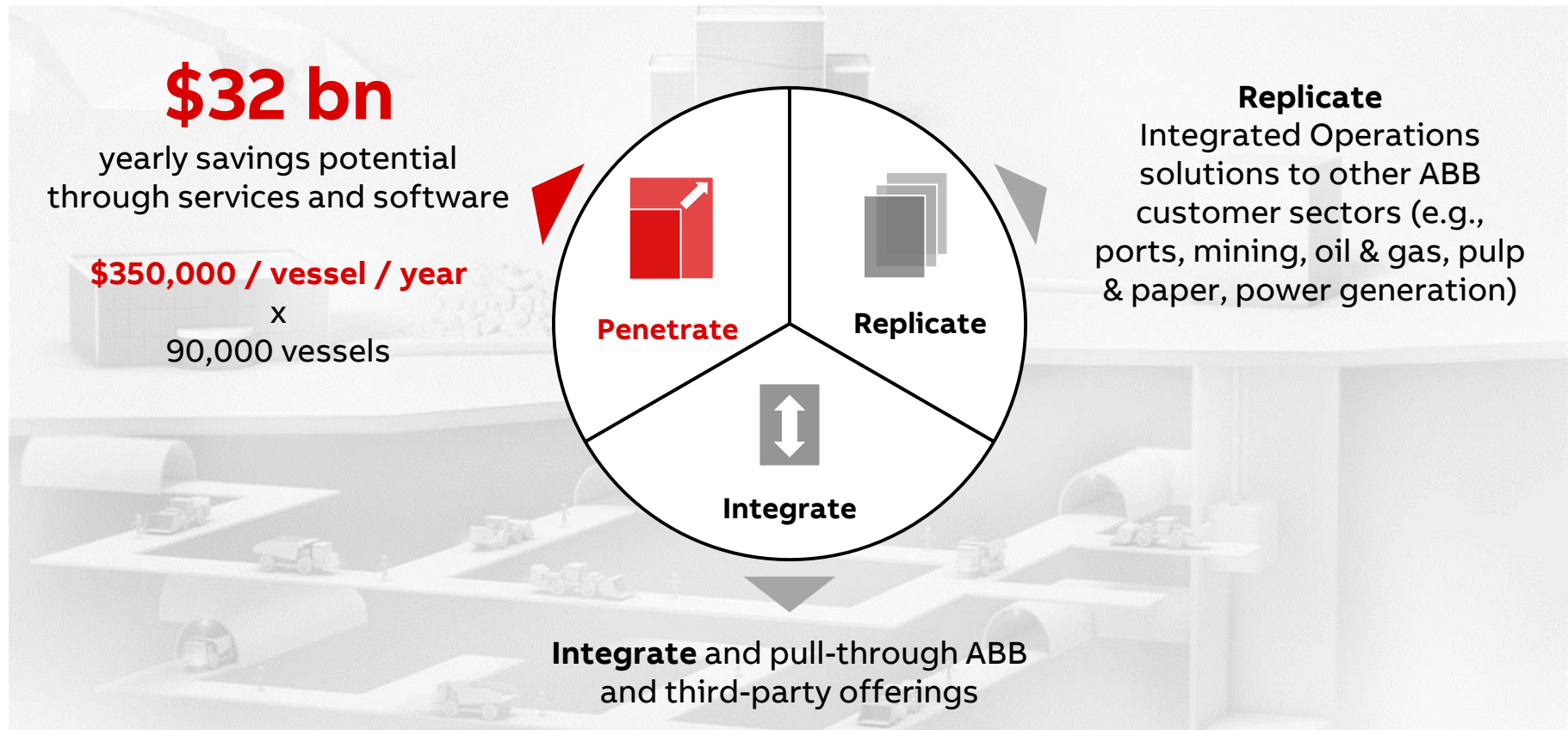




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Digital solutions for buildings

ABB's connected, integrated control offering

Mike Mustapha, Managing Director of Business Unit Building Products

ABB has a huge opportunity to drive digitalization in buildings

Relevance

50% of the world's population live in cities,
70% in 2050¹

Buildings consume approximately 60% of the
world's electricity²

\$600 bn annual OPEX spending on buildings³

Challenges

Inefficient energy use

Interoperability of intelligent solutions

Increasing speed of innovation requires future-
proof platforms



ABB unlocks significant customer value through digital

Intelligent building functions controlled by communications protocols

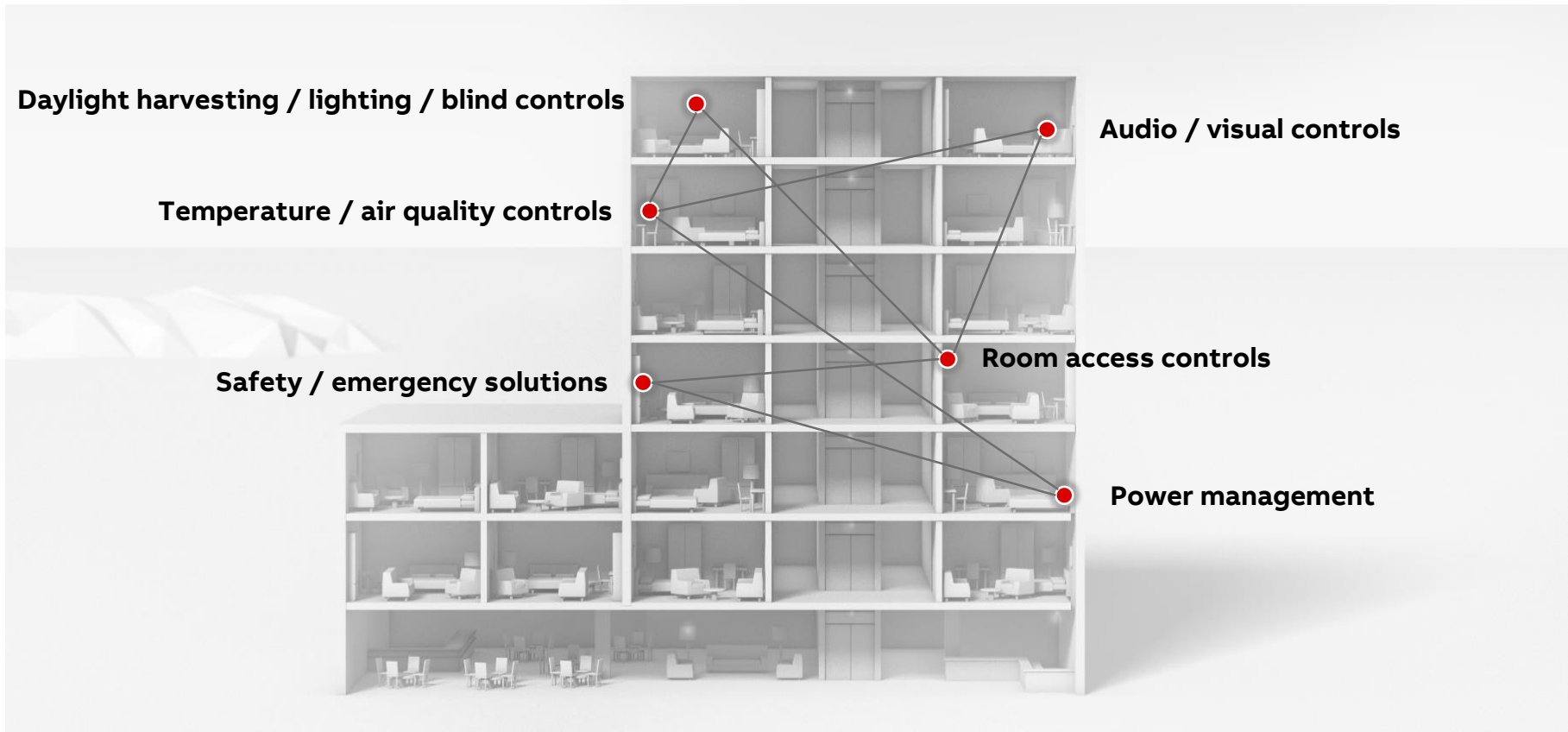


ABB unlocks significant customer value through digital

Making buildings smart with end-to-end solutions

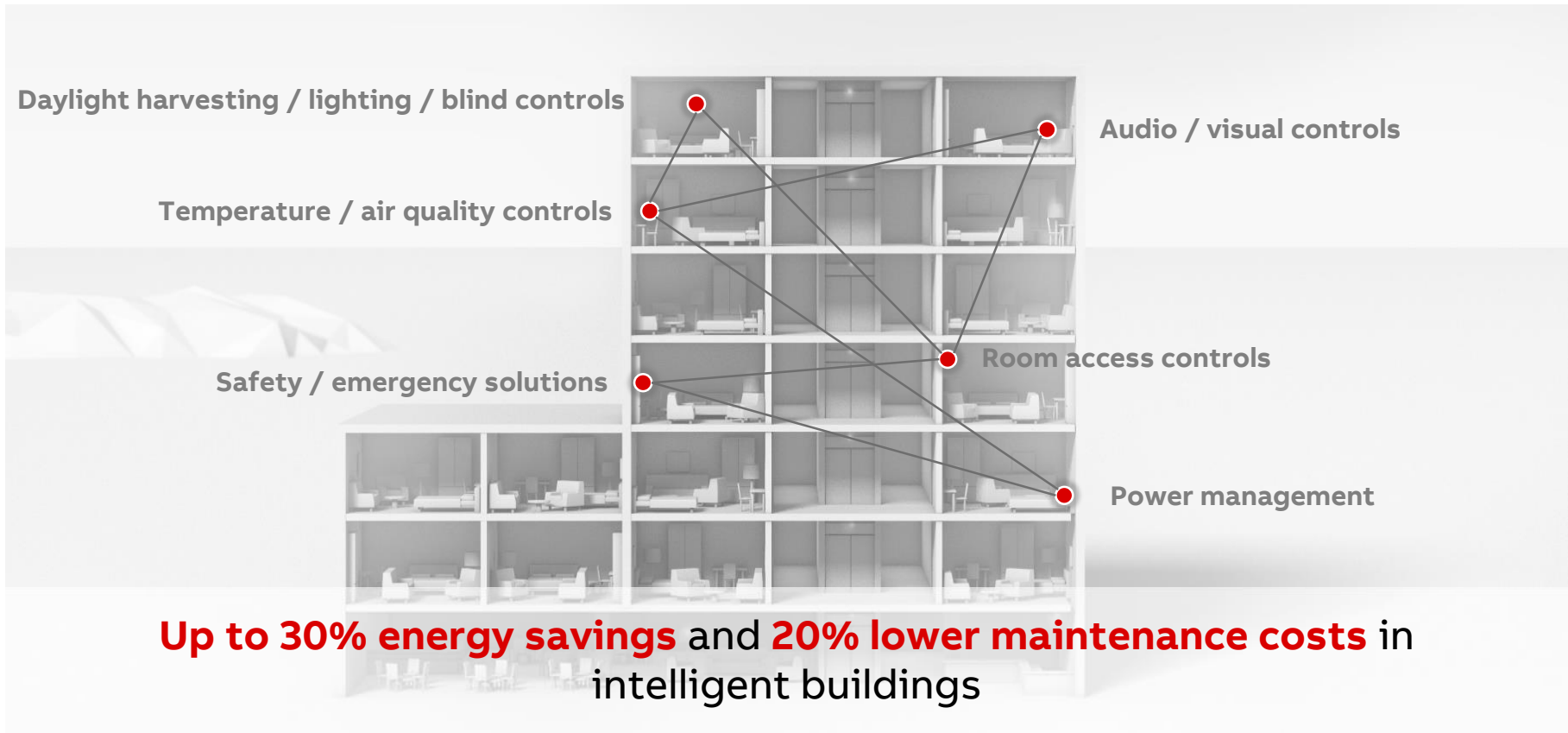


ABB unlocks significant customer value through digital

\$15 bn in potential customer savings throughout the hospitality buildings market

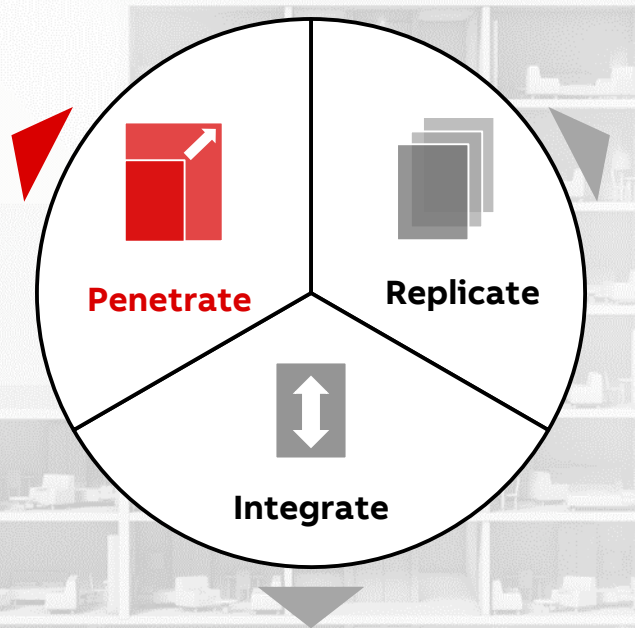
\$15 bn

yearly savings potential
through building control

\$2,500 / hotel room / year

x

5.8 mn rooms in 4/5 star hotels
(top 10 hotel chains)

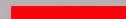
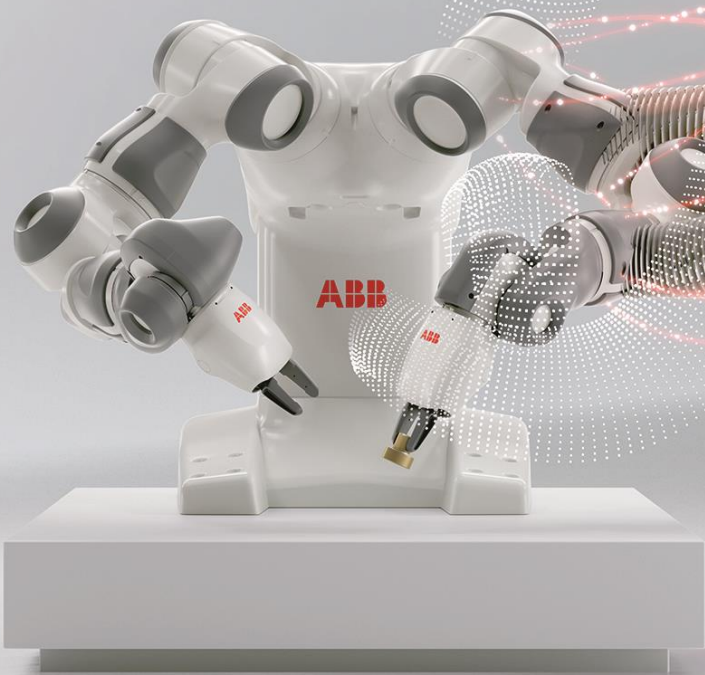


Replicate

smart building equipment
to shopping malls, airports,
offices, sport arenas, etc.

Integrate and pull-through
ABB and third-party offerings

ABB



Customer value creation and ABB opportunity to capture

Showcases in 5 markets: **\$90 bn** customer saving potential

ABB opportunity: **\$2 bn**

Full potential in 5 markets: **\$315 bn** customer saving potential

ABB opportunity: **\$6 bn**

Full potential across 15 ABB key markets: **\$988 bn** customer saving potential

ABB Ability™ to grow through digital

> \$20 bn

annual business opportunity to be captured

What's next: integrate, penetrate, replicate

Leverage digital services across all market verticals

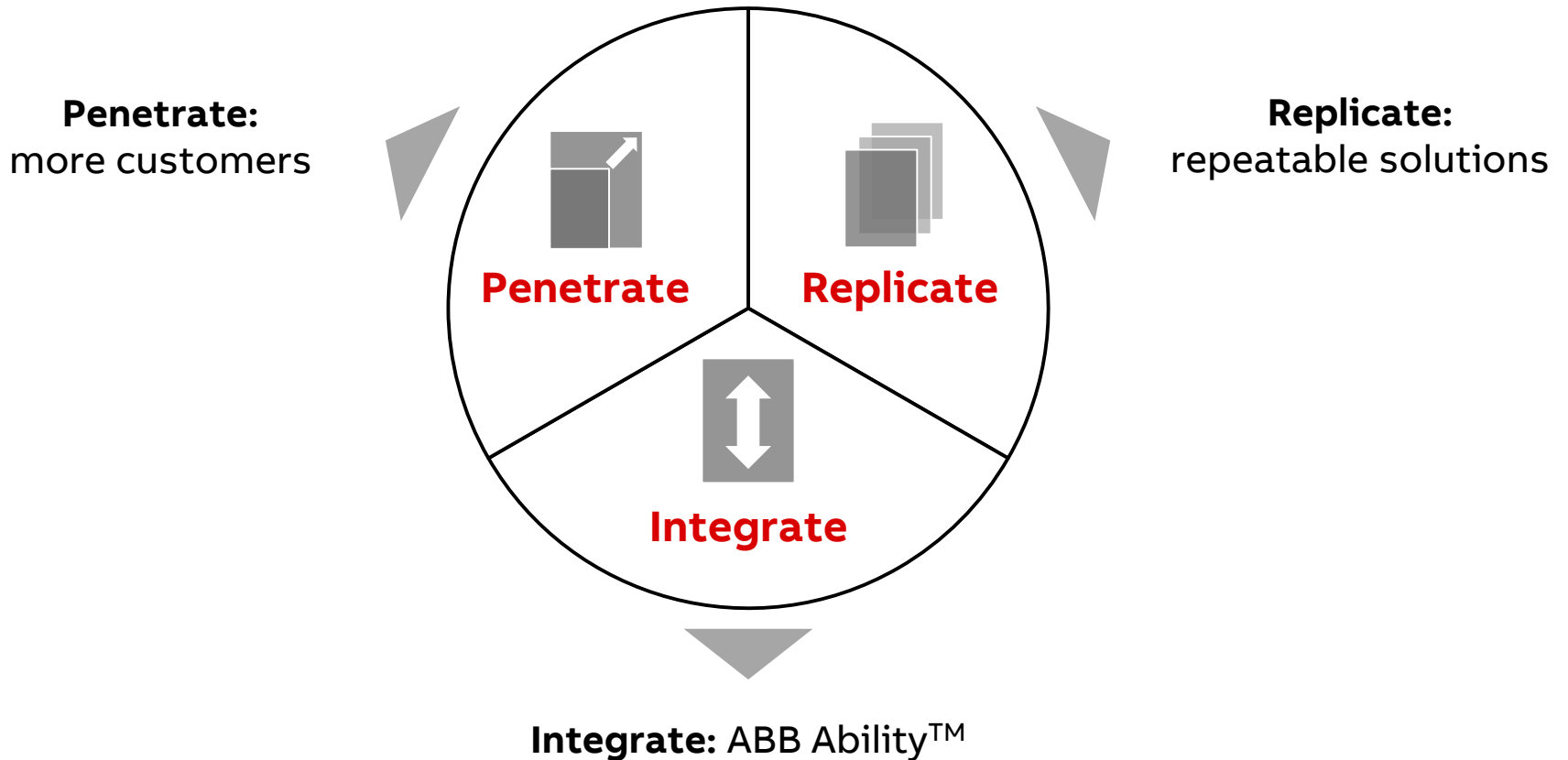




ABB Ability™

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ABB