



17.2.2021, JANI VALTARI, DISTRIBUTION SOLUTIONS

Value from data – case ABB

[Datalousforumi](https://www.datalousforumi.fi)

— ABB Overview



Our purpose



We succeed by creating superior value.



We push the boundaries of technology to drive performance to new levels.









We energize the transformation of society and industry to achieve a more prosperous sustainable future.



ABB in Finland

Key figures

 <p>2.1 bn € Revenues (2020)</p>	 <p>~ 120 mn € Investment in research and development</p>	 <p>~ 5 000 Employees</p>
 <p>Production facilities are located in Helsinki, Vaasa, Porvoo, and Hamina</p>	 <p>~ 1/7 of personnel working in research and development</p>	 <p>~ 800 Summer inter</p>

ABB's research and development in Finland is strong

Investment ~ 120 mn € in 2020

Electrification #2

Low voltage switches (Vaasa)
Power distribution products and solutions (Vaasa)
Protection relays for distribution networks (Vaasa)



Process Automation #2

Paper machine drives
Process industry electrifications (Vaasa)
Collaborative Production Management (CPM)
Energy management system (CPM+)
Azipod®
EMIMA™ - energy management system



Motion #1

Induction machines, synchronous machines
Diesel generators
Wind generators
Wind converters
Low voltage frequency converters
Low voltage motors, motors for explosive atmospheres (Vaasa)



Robotics & Discrete

Implementation of Robo



—

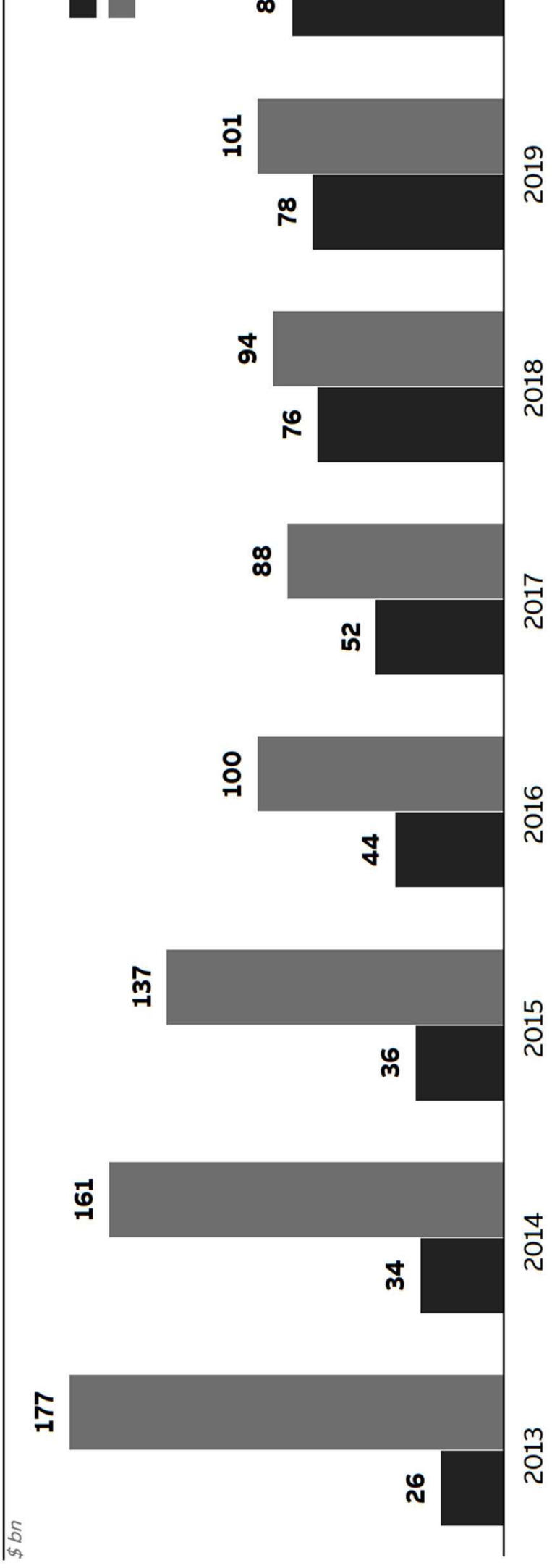
Value from data

Examples and future views

Data is the new oil

Big data drives data center investments

Capex spend of Big Data and Big Oil players



¹Big Data comprises: Microsoft, Amazon, Google, Facebook, Apple

²Big Oil comprises: BP, Chevron, ExxonMobil, Shell, Total, Eni

Source: Capital IQ

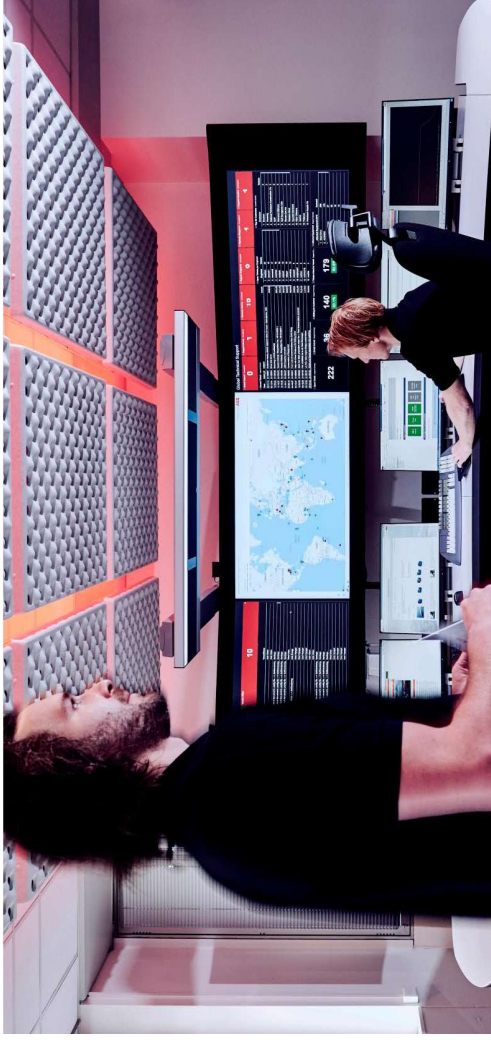
Data is the new oil

Examples and potentials

- Infrastructure view: Energize and Secure Data Centers
- 24/7 care – remote monitoring based on data
- Digital Twin – Optimize investments and operations
- Analyze and Secure electricity distribution

ABB Ability™ Collaborative Operations Centers - CoC

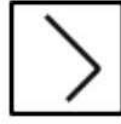
Digitally driven services for Marine and Ports Industry- 24/7 Care to customers



- Services from the 24/7 Care centers
- Urgent remote / technical support
- Troubleshooting and access to subject matter experts
- Cyber Security services and Advisory services
- Performance / Condition reports and analytics
- Service notes and bulletins



3 Level 1 centers
enabling 24/7 ontime
service



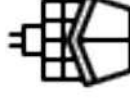
6288 tickets solved
in first year*



Average response
time for an urgent
technical inquiry is
less than 1 hour



Average response
time for a non-urgent
inquiry is
less than 12 hours



918 vessels
supported
globally



Footprint of **800 people**
in over **25 countries**
more than **40 locations**

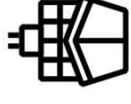
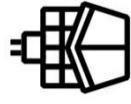
24/7 Care

Collaborative Operation Centers



Technical Support Level 1

24/7 Care Centers



24/7 organized from 3 regional centers



Center Americas
U.S / Miami



Center Europe
Norway, Oslo



Center Asia
Singapore

Escalation route based on complexity



Technical Support Level 2

Marine & Ports Subject Matter Experts



Azipod Center
Finland



Automation Center
Italy



Advisory SW Center
Netherlands



China Market Center
Shanghai



ABB Factory Support



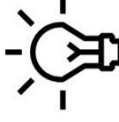
3rd Party Support



Local Service Centers



Warranty Managers



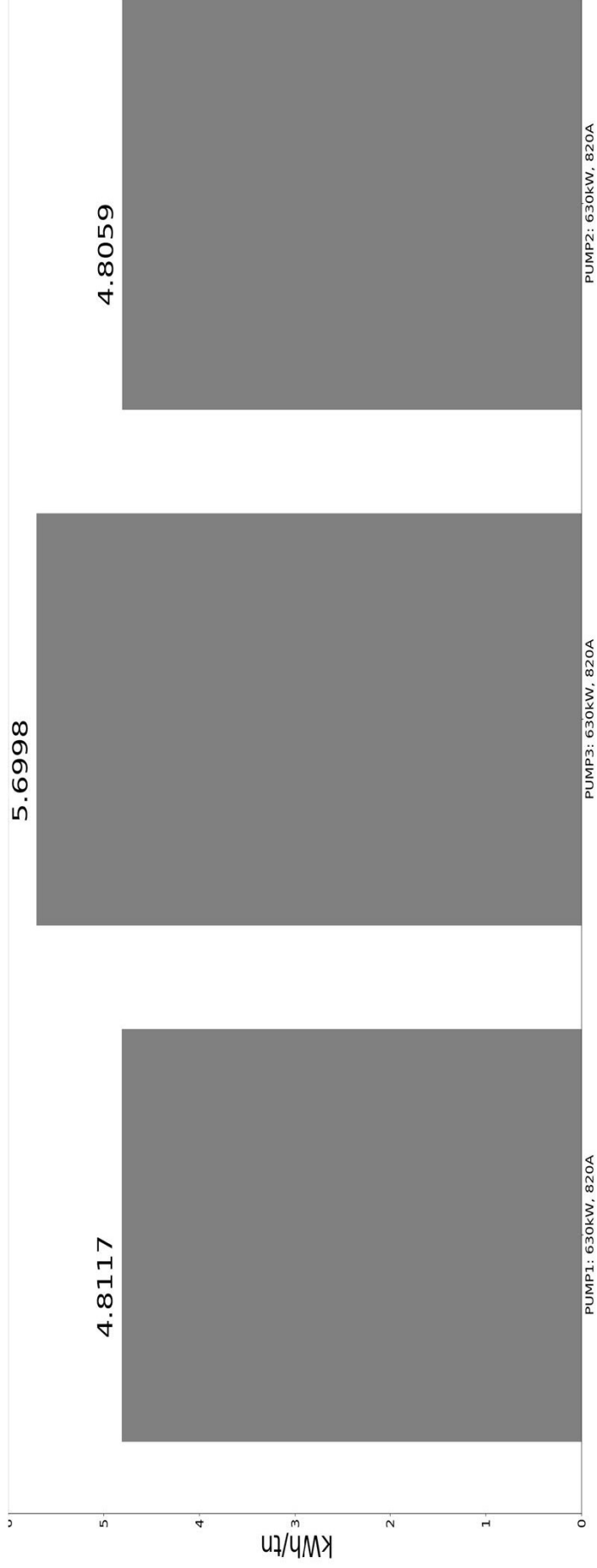
Marine R&D

Collaborative Digital Twin – Optimize Operating Costs

Three different pumps simulated with identical powertrains (630kW motor, 820A Drive)

Annual operation cost saving 23 710 EUR, **one pump, every year**

Energy consumption¹ kWh/tn



Operating Costs²: 127 590 EUR/year

151 140 EUR/year

127 430 EUR/year

¹ Corresponds to the whole year real operating environment.

² Calculation based on the actual annual amount of water pumped and constant energy price estimation of 40 EUR/MWh.

Improve electricity distribution network resilience with cloud computing

Backups, updates, data collection and analysis

The screenshot displays the ABB Ability™ Caruna software interface. The top navigation bar includes 'Application Information', 'Functions', 'Settings', and 'More'. The main content area is divided into several sections:

- Protection:** A schematic diagram showing electrical components like 'FINSPTOC' and 'DPHLPDOOC' connected to busbars (300, 306, 307).
- Phase currents:** Three graphs showing current (A) vs. time for phases 301, 306, and 307.
- Products:** A table listing product details for various units.
- Map:** A geographical map showing the location of the equipment in a rural area.

PLACE	PRODUCT	VERSION	IEC	EDITION	SERIAL	ORDER CODE	LICENSE	FIRMWARE AVAILABLE	UPDATE FIRMWARE AVAILABLE
N002	SSC600	G	1	1	1WHS000002	SBFJAEGNBAUBECZIG	1.0.0	No	<input checked="" type="checkbox"/> Selected for update
N002	SSC600	G	1	1	1WHS000002	SBADNBDCCBALAGCZIG	1.0.0	No	<input checked="" type="checkbox"/> Selected for update

How an ABB Ability™ pilot helped Caruna to make the network smarter

Web article | Zurich, Switzerland | 2019-01-11

ABB and Caruna, the largest utility company in Finland, are exploring new ways to solve future challenges through cloud based fleet software management services using ABB Ability™

Challenges, barriers, potential pit-falls, recommendations

- Business models need to adopt to different customer needs
- Investment, licensing, pay-per-use, value-based cost, profit sharing, ...
- Depends a lot on available data analytics resources on customer side
- Often takes time to find - The value of the data is not easy to determine, which party benefits the most
- Data quality and availability
- Data cleaning is often a major effort, do you have enough data and right kind of data?
- Ownership of the data, privacy aspects (anonymization) – especially in safety critical environments
- Know-how and education
- You need both domain experts and data scientists, in fruitful cooperation
- Emerging area, substantial technical risks
- Innovation funding – important in the beginning (e.g. AI/ML)
- Investment support – also new infrastructure often needed
- Important not to have any regulative blockers

Presenter



Jani Valtari, D.Sc. (Tech)
Technology Center Manager, Distribution Solutions – Finland

Email: jani.valtari@fi.abb.com



<https://www.linkedin.com/in/jani-valtari/>



ABB Distribution Automation
With a passion for innovation
Visit our new portal!



BA