L. AMBROSI

L'impianto digitale del futuro

Genova Smart Week

ABB

La nostra visione sull'impianto digitale del futuro

https://www.youtube.com/watch?v=FibavRlDvuE
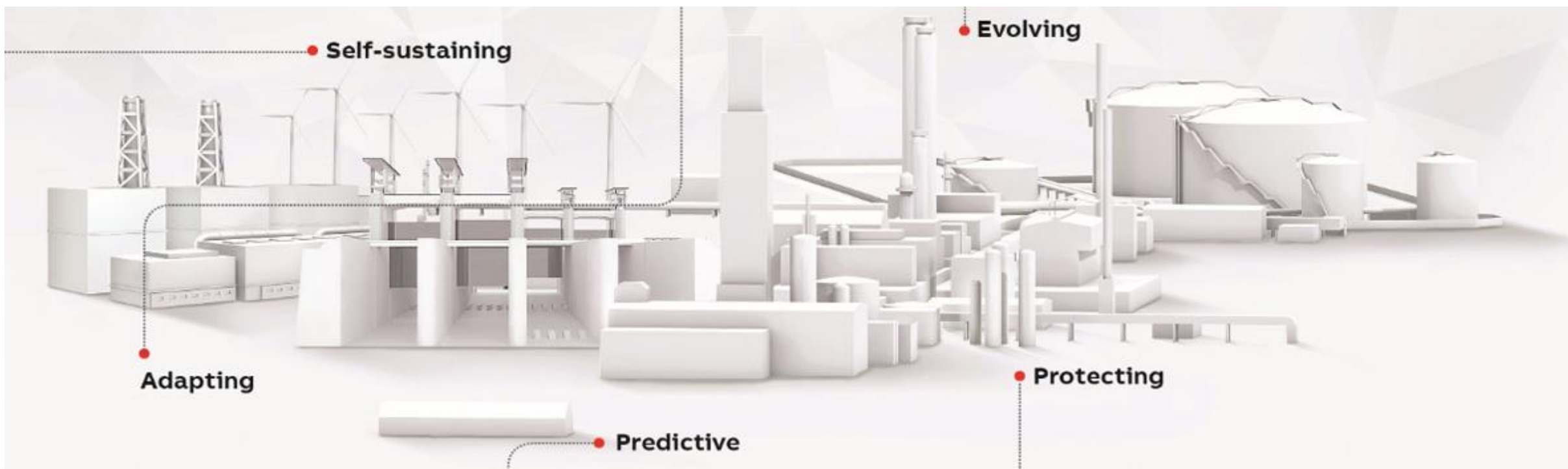
Use case: Utility combined cycle power generation with desalinization in Middle East

Monitoring equipment, plants and assets to enable improved operations and maintenance

- **Rising fuel costs** and increased demand for potable water are incentives to increase production efficiency as well as fuel efficiency
- **Complex combined power/desalination operator process**, prone to manual error, potential for introduction of operator bias and a great deal of manual logging which can lead to process disturbances
- **Hard to Plan Maintenance** Given the complexity of the process, maintenance activities are hard to forecast at the component level

ABB ability monitoring solutions

1 **Reduced fuel cost:** Through load optimization software, the customer obtained optimal set points for each turbine, as well as the optimal production levels of the hybrid desalination production facilities, resulting in fuel savings of 4% over the observation period

2 **Process optimization** in the desalination process set points resulted in 2% water production cost savings and additionally >1% boiler efficiency increase due to improved balance of lant process control

3 **Decreased operation & maintenance costs:** Through automation and data analytics, streamlining of workflows and maintenance management, the plant staff reduced daily work efforts by about 18 hours reducing burden on plant staff

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Smart Manufacturing: productivity increased by >50%

Dalmine ABB site: a case study about Industry 4.0

– «**Dalmine lean way**» a process started since 2008 providing:

- Capability of complexity management
- Adaptive
- Flexibility on production
- Quality improvements

ABB Ability™:

Manufacturing Execution System (MES)

Robots for smart vision control of products by a self-learning process

Robots for assembling and tending

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How we partner on digital: Pilots and lighthouse engagements
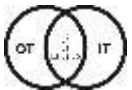
Digital engagement model

Step 1
Align to customer's
Key initiatives & strategic priorities

Step 2
Capture requirements,
From all stakeholders impacted

Step 3
Use operational architecture
to execute

Step 4
Build the business case

Dedicated digital team

Industrial Enterprise Customer Lead—Drives large pilots for fleet digital opportunities, coordinating with regional teams

User Experience Lead - Captures customer cross stakeholder requirements/ success criteria, identifies required changes in customer business processes, supports development of pilot interfaces

Digital Architect - Develops service oriented architecture, works with customer ICS and IT leads to define data sources, secure architecture and reporting requirements
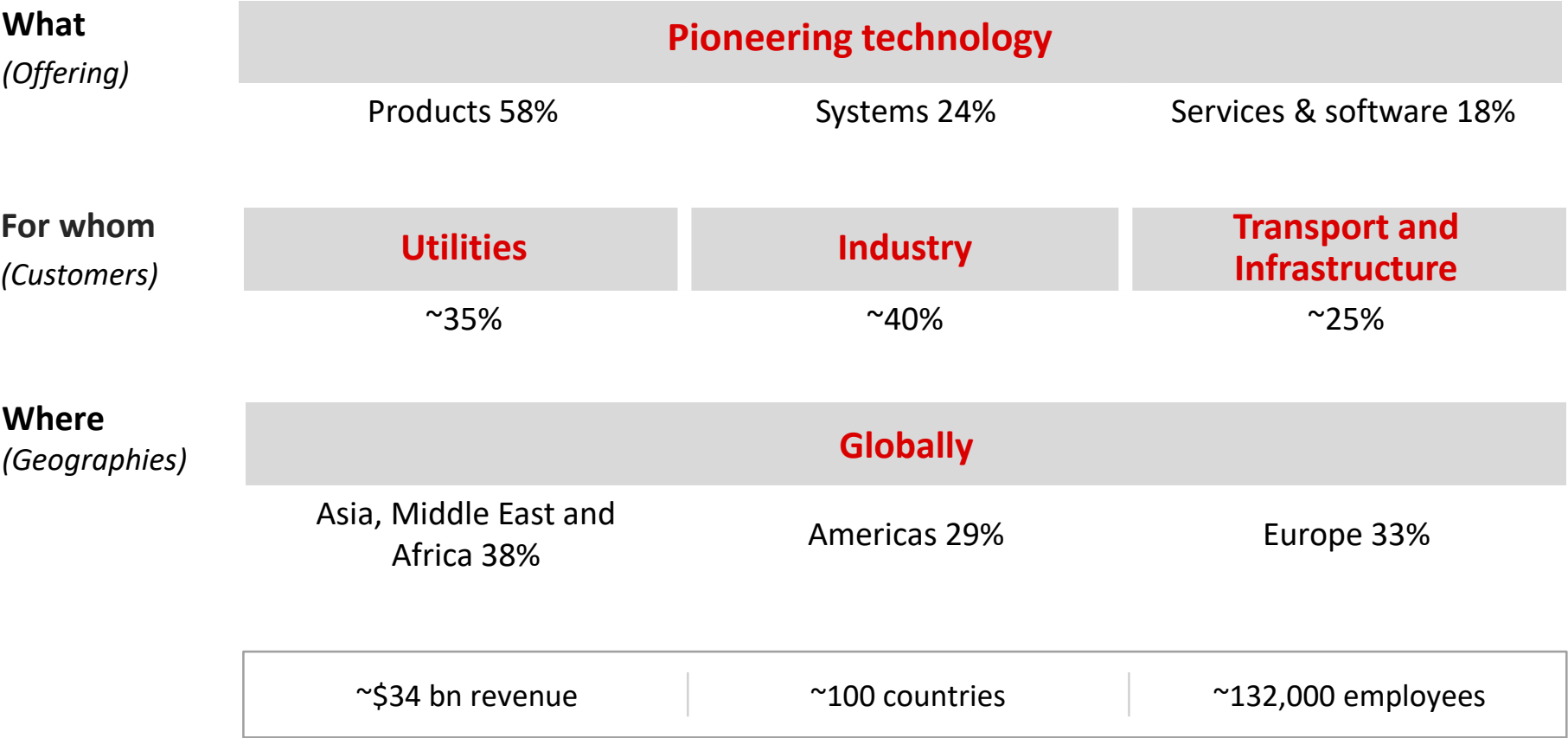
Pilot Execution

1 **Proof of Concept Workshop**
2 – 3 days focused on requirements, users and success criteria

2 **Design Review**
1 day ensuring user requirements & success criteria will be achieved in pilot & test

3 **Installation & Test**
Meet site requirements, Execute Test Plan and capture business case results

4 **Results review** presentation & plan scale to Fleet

Using digital solutions to drive outcomes; engaging to demonstrate tangible results that scale

ABB: the pioneering technology leader

What *(Offering)*	**Pioneering technology**		
	Products 58%	Systems 24%	Services & software 18%
For whom *(Customers)*	**Utilities**	**Industry**	**Transport and Infrastructure**
	~35%	~40%	~25%
Where *(Geographies)*	**Globally**		
	Asia, Middle East and Africa 38%	Americas 29%	Europe 33%

~$34 bn revenue	~100 countries	~132,000 employees

Power and automation in Italy for over a century

A strong local presence

150 years of collaboration with italian customers

50+ years of manufacturing activities in Italy

15 production sites

5,900 employees offering experience and skills in order to add value on the Italian market

ABB is recognized for setting the benchmark for digitalization with its distributed control system portfolio

ABB is named Frost & Sullivan's 2017 Company of the Year thanks to its visionary innovation embodied by its DCS offering and its impact on customer performance. The award recognizes ABB's digital leadership, not only when compared to other industrial automation suppliers, but also against non-industry peers. The award highlights how ABB meets customer needs for improved performance in tough market conditions, at a time when power and process industries' production assets have never been larger or more complex
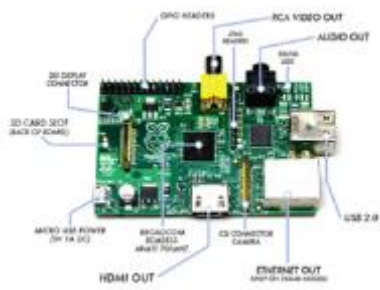
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Digital technologies are driving new innovation in industrial markets

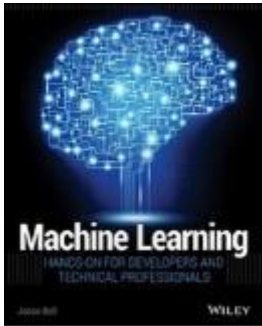Media is focused on B2C but the "killer app" is in B2B

Virtual/augmented reality

Software-defined machines

Machine learning

Time-sensitive networking

Big data

Inexpensive computing

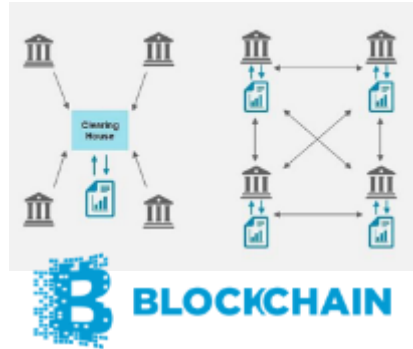**Cloud computing**

Cybersecurity

Connectivity

Blockchain

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What digital really means?

Digital is a way of *doing* things:

- Building foundational digital capabilities

- Creating value in core businesses
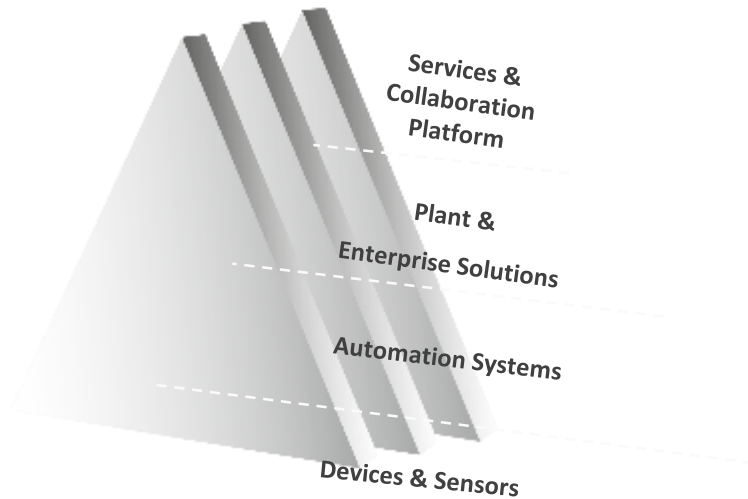
- Creating value at new frontiers

…to unlock growth now!

ABB Ability™ for Power and Water

ABB is a leading digital solutions provider

A well established offering used in many industry sectors

50 cloud-based services and advanced analytics

>6.000 solutions installed

>70.000 systems installed

>70.000.000 digitally enabled devices connected

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ABB Digital Strategy

ABB Ability™

Digital Solution for our Customers

Smart products and/or **integrated systems, advanced services** and new **business model**

Smart Manufacturing

Digital technologies, automation and robotics applied into ABB factories

Digital Partnerships

Partnership with **Microsoft (Azure** smart cloud platform) **and IBM Watson** (Artificial Intelligent)

People 4.0

Training plans to develop the new **digital competences**

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