







New business models



Speed



Flexibility



Quality



Efficiency



Powerful automation platforms and industrial software already provide first-level benefits



Product design CAD and simulation Production planning

CAM and simulation

Production
MOM / MES,
automation,
and Edge/loT

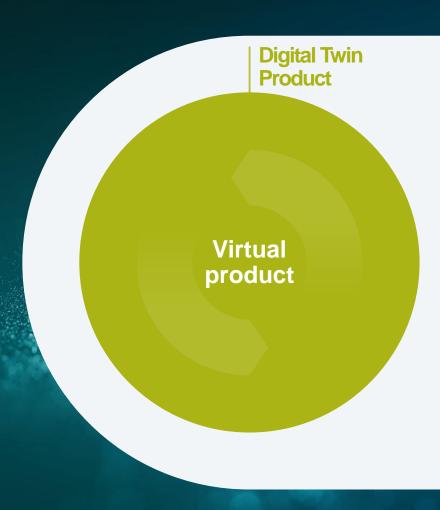
Product loT Maximum benefit of Digital Enterprise is leveraged only through integration of the entire value chain



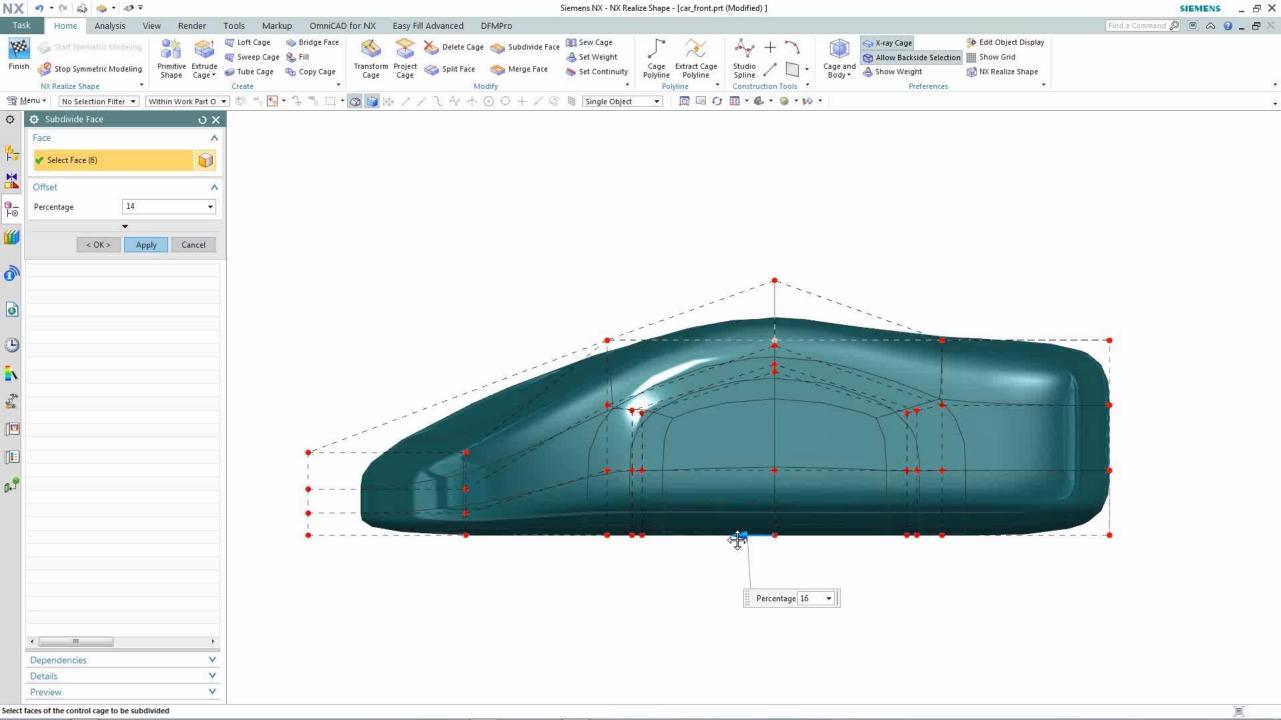
Seamless integration bigital Enterprise

The Digital Twin of the product reduces time to market



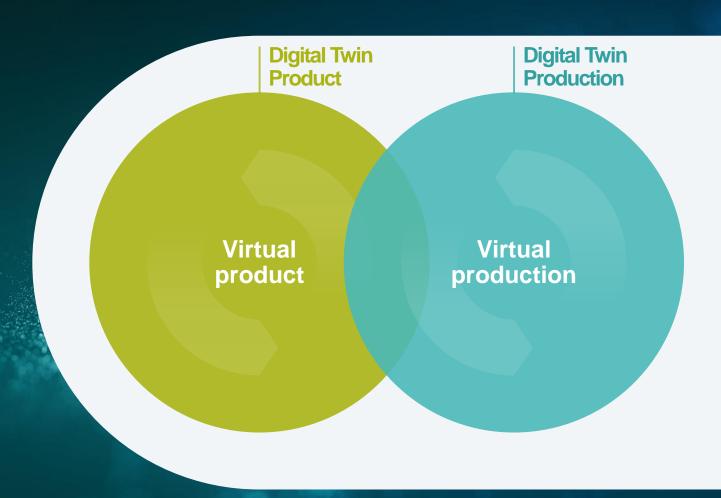


Design, simulate, and verify products digitally, including mechanics and multi-physics, electronics and management of software

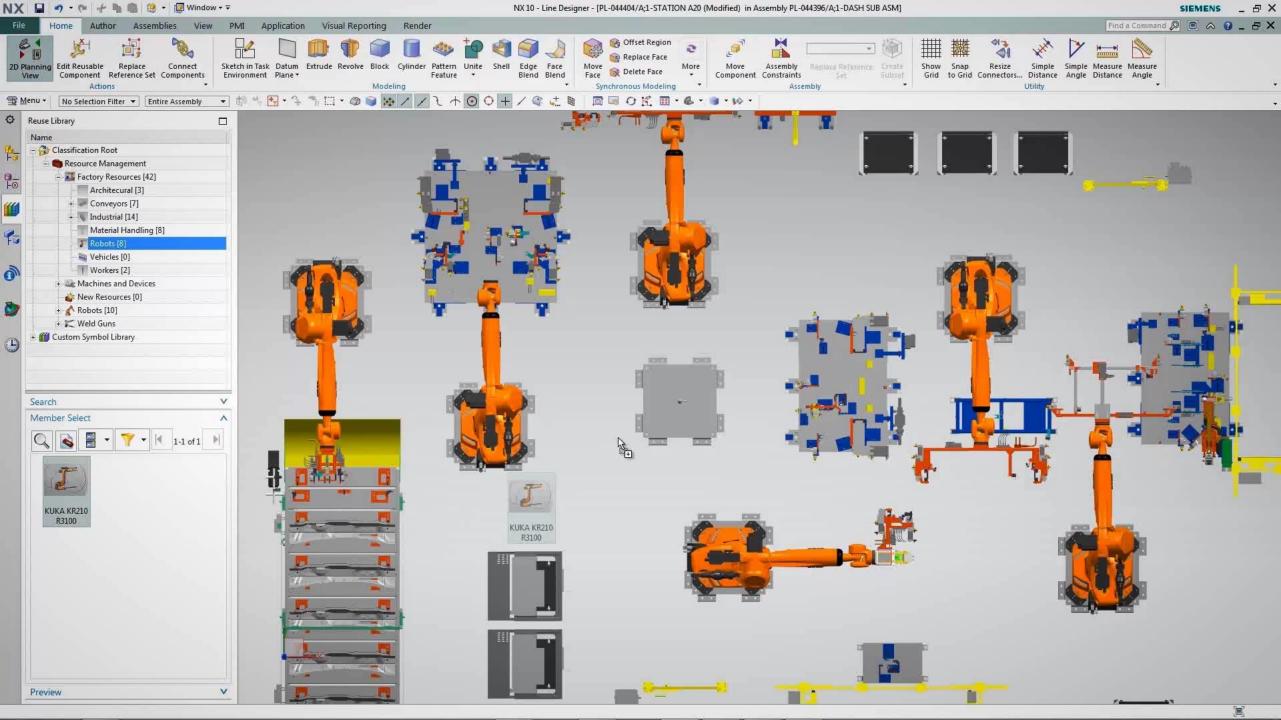


The Digital Twin of the production accelerates planning, setup, and optimization



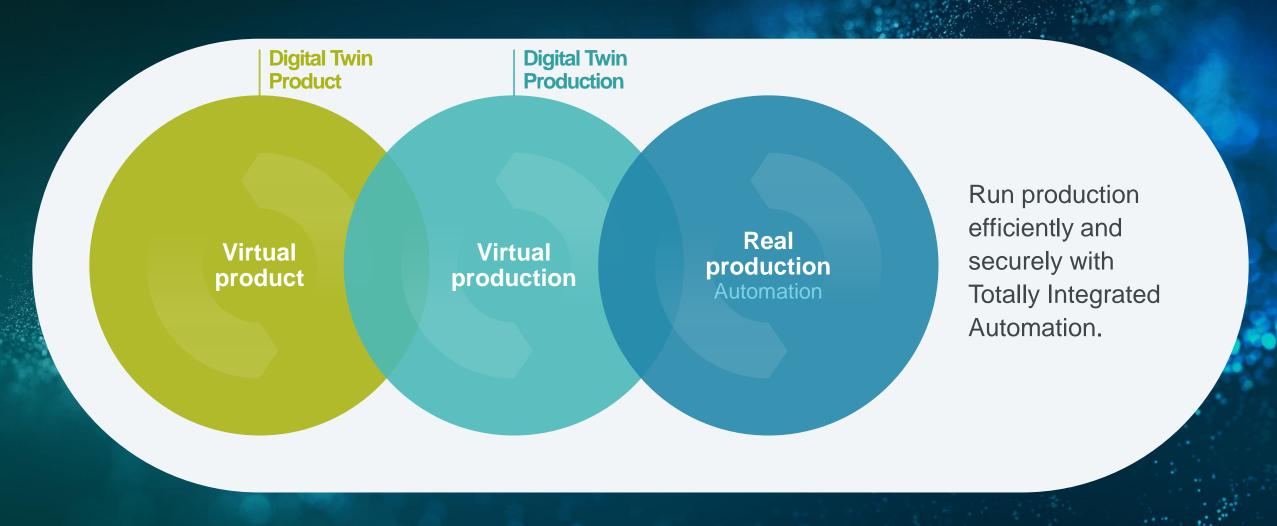


Plan, simulate, predict and optimize production digitally with PLC code generation and virtual commissioning.



Holistic automation portfolio increases productivity on the shop floor

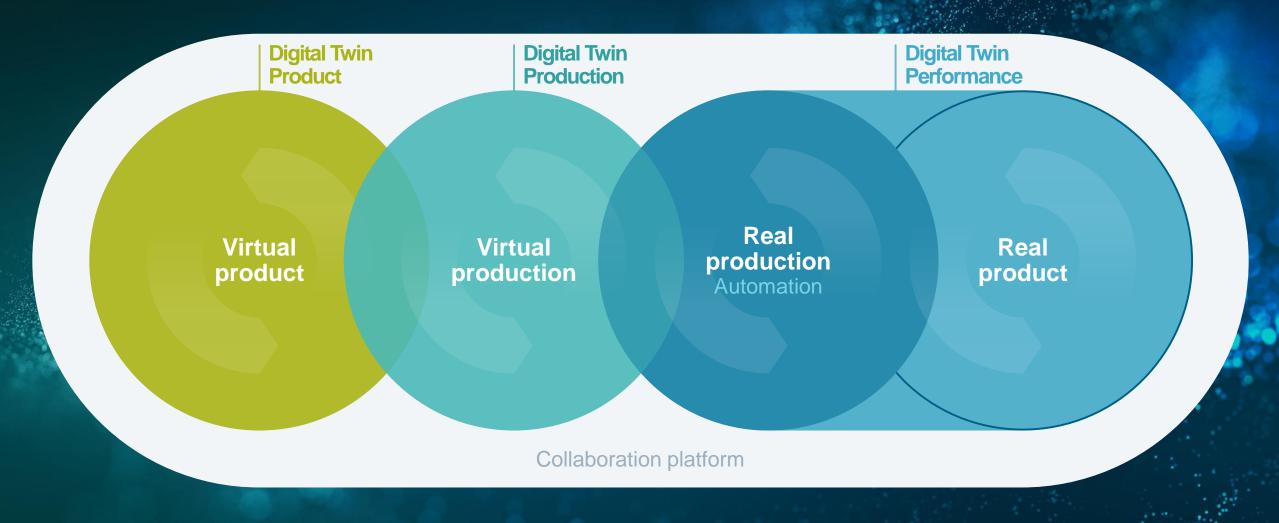


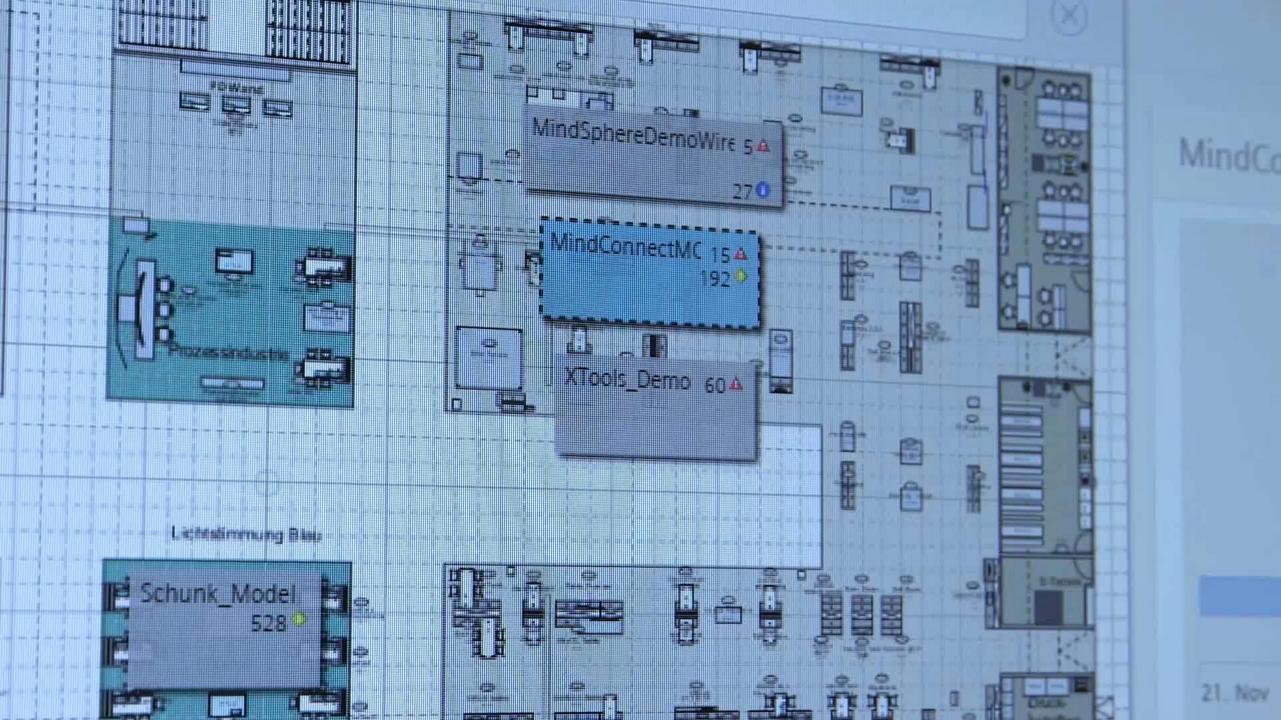




The Digital Twin of the performance enables continuous analysis of both product and production

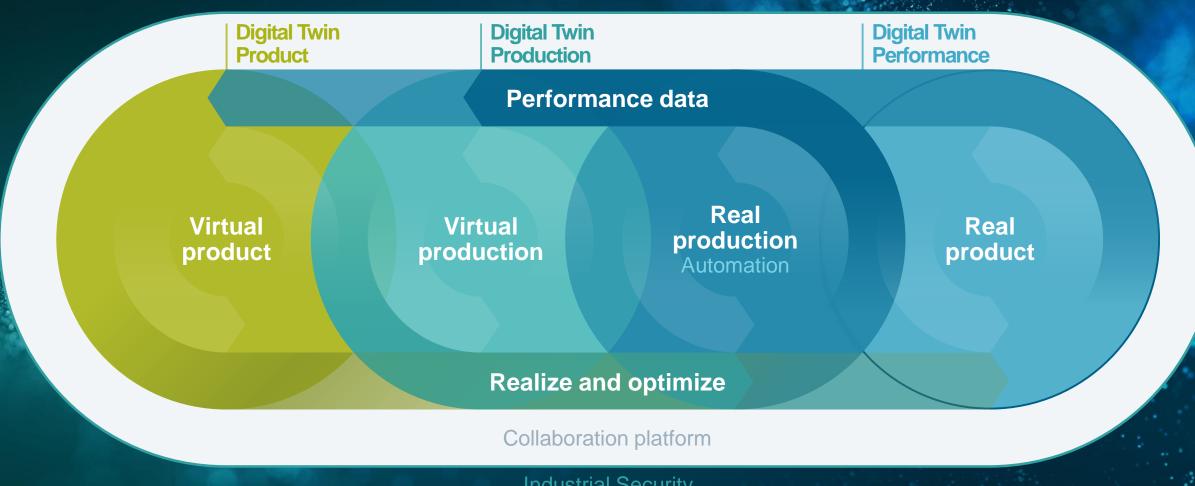






Feeding back insights enables continuous optimization the value chain





Industrial Security

More productivity and new business models for pump manufacturers with integrated technologies and digital twin



Digital Product Twin

Design of the structural base-frame and equipment support of a pump package with Solid Edge.



Digital Production Twin

Digitalization of production process for pumps with Manufacturing Operations Management (MOM) portfolio.



Digital Performance Twin

From pumps to pumping solutions for Grundfos' customer Danish Crown with a condition monitoring system based on MindSphere.



MindSphere, the operating system for the Internet of Things – enhanced through Edge and mendix



Applications

Powerful industry solutions with advanced analytics





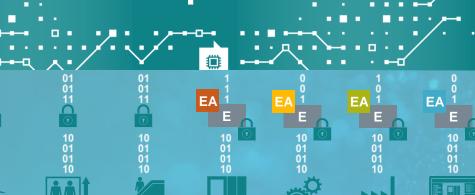
Open PaaS

Develop robust industrial IoT solutions faster with global scalability

Connectivity

Connect products, plants, systems, machines and enterprise applications

MindSphere



Edge Management

Edge Device Management, Edge App Management, and Edge App Store

Edge Apps

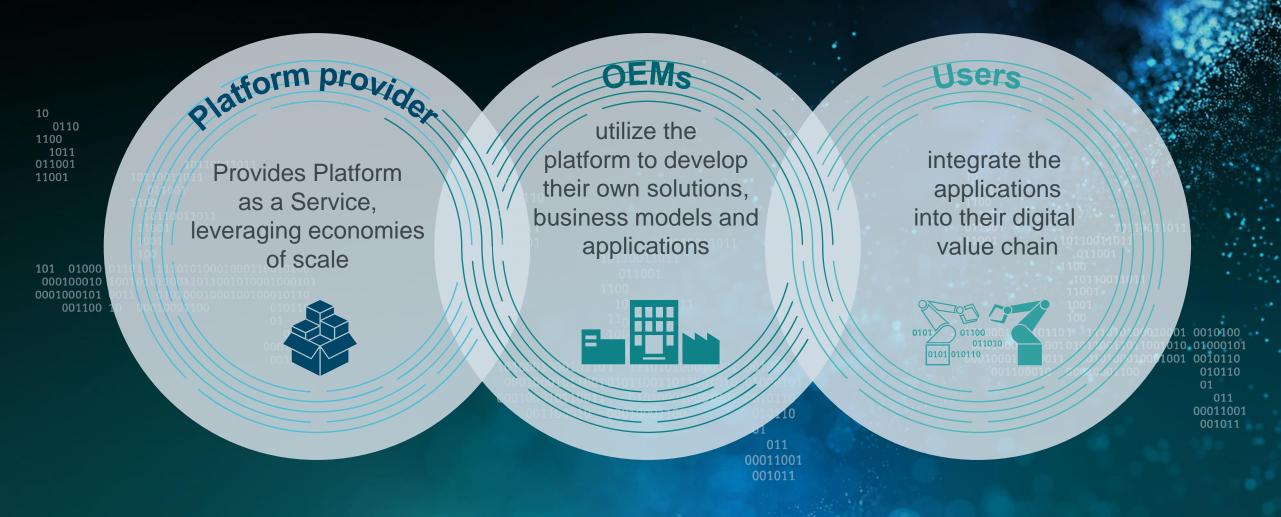
Siemens, partner (OEM), and 3rd-party Edge Apps

Edge Devices

Secure, future-proof basis for running Industrial Edge applications

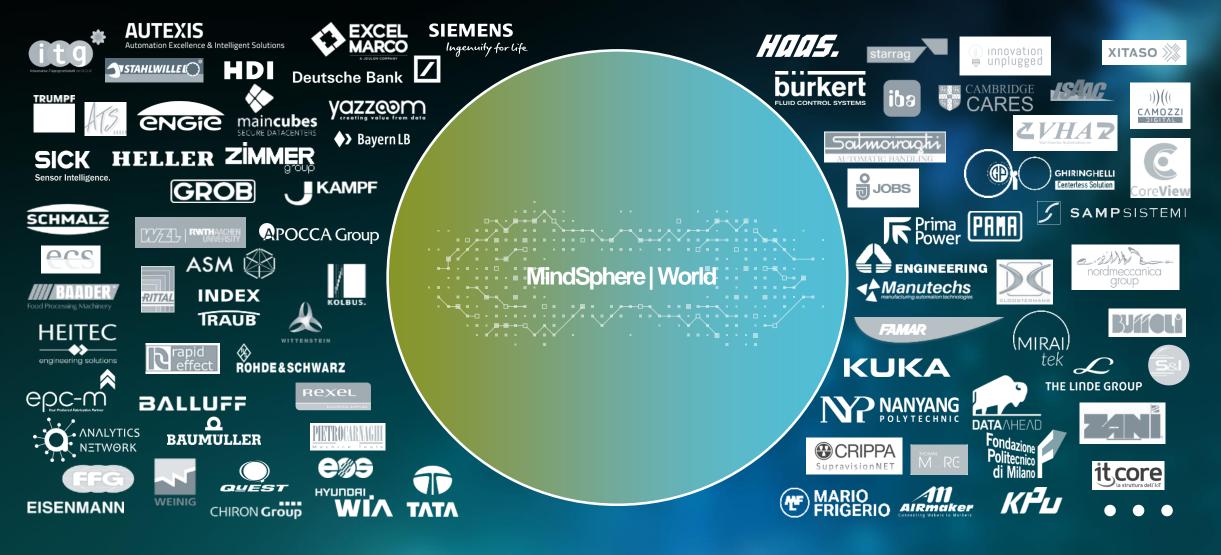
New types of collaboration – Vital to the digitalization breakthrough





MindSphere | World – currently over 120 member companies in Europe and Asia across a variety of industries







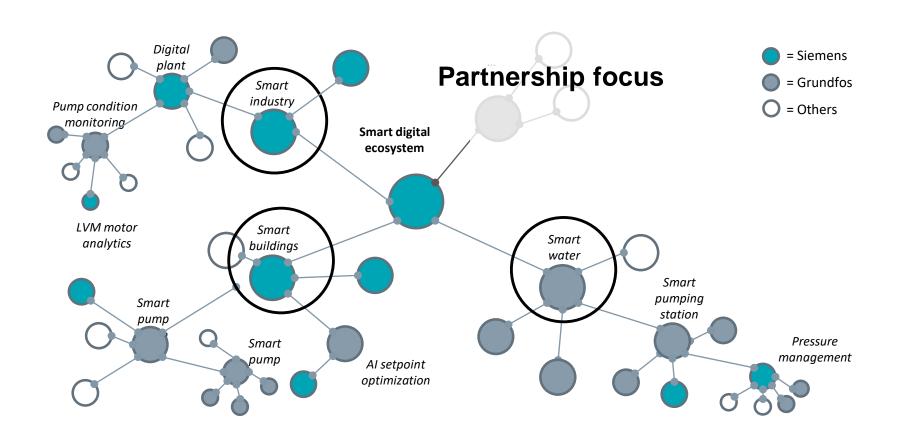
GUIDING STAR

Common market focus and scope

GRUNDFOS SIEMENS

Ingenuity for life

Complement players in a new Smart City Ecosystem play, with substantial domain expertise

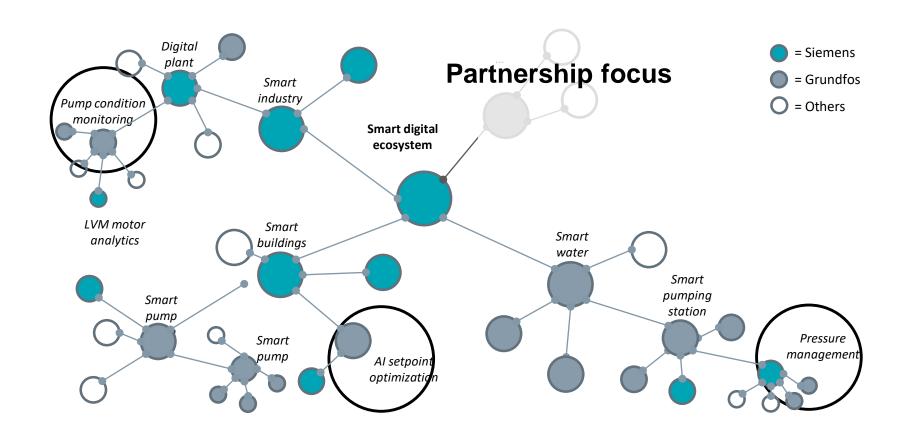


Common market focus and scope

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End-customer value and key objectives

Ingenuity for life

Strong synergies as both companies are steeped in engineering, understand the value of digitalization and the importance of focus on end-customer value.

| Smart Buildings | Smart Industry | Smart Water |
|---|---|----------------|
| Eco friendliness and Utilization | | |
| Sustainable consumption of natural resources ensuring a healthy environment | | |
| Efficiency | | Reduce leakage |
| Reduce resources (e.g. water and energy), time, efforts and maintenance. | | |
| | Flexibility and Productivity Secure growth by minimizing risks | |
| Resilience | | |
| Prepare, endure and recover from disruptions | | |
| Safety, Security and Comfort | | |
| For people, physical and digital assets | | |
| Digital enabled services | | |
| | | |

End-customer value

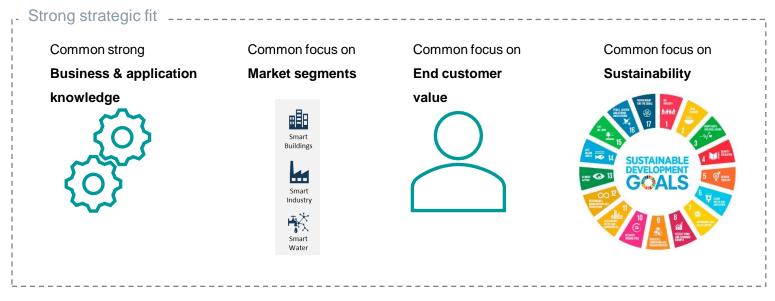




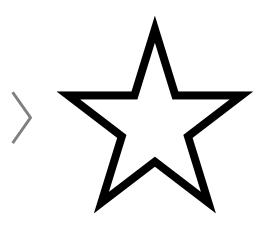
Grundfos/Siemens digital partnership

Ingenuity for life

Strong partnership build on complementariness within the scope and synergies in purpose and end-customer value.











Ingenuity for life

Smart City Infrastructure and focus

Horizontal and Vertical strength

