

Thinking industry further! – Driving the Digital Enterprise to the next level

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of Siemens AG und CEO Digital Industries

Making industrial processes more flexible – greater customization with increased demands on productivity

Flexible production

Individualized products, variable batch sizes

Performance

Plant availability, changeover times, maintenance, cybersecurity

Lifecycle optimization

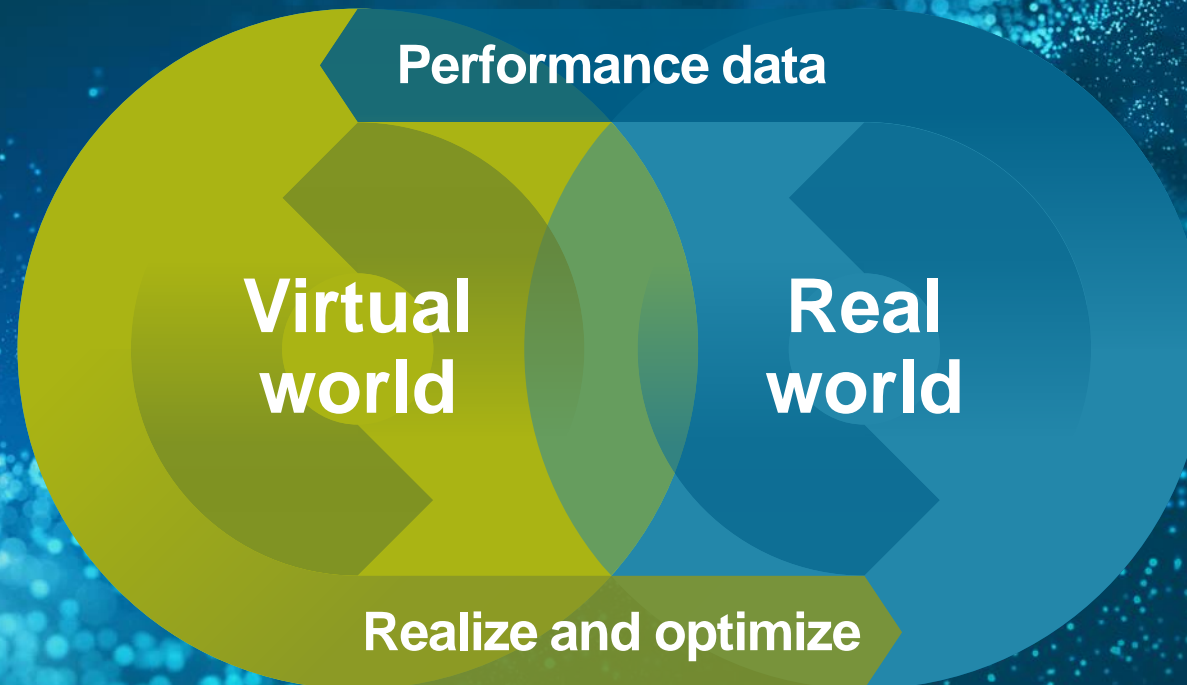
Lifecycle transparency, productivity, time-to-market, asset and cost optimization

Global collaboration

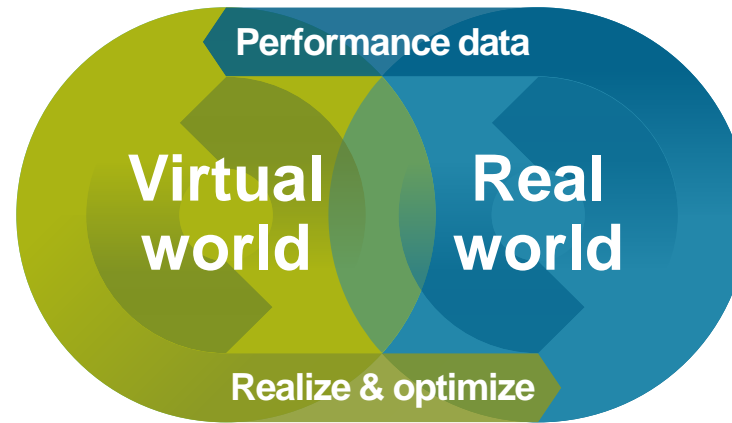
Connected, secure work, multi-users, real time collaboration

New business models

Integration of virtual and real worlds provides unique competitive advantage to customers



Digital Enterprise software platforms – Comprehensive, constantly expanding software portfolio



MindSphere

NX CAD	Teamcenter Manufacturing	NX Line Designer/MCD/ Automation Designer	Simatic IT	MindSphere Apps
Polarion			Camstar	Digital Lifecycle Service
Simcenter	NX CAM / Additive	Simit	WinCC/SCADA	Asset Performance Suite
Mentor Xpedition	Tecnomatix	TIA Portal	CNC Shop floor Mgt SW	
Mentor Capital	Mentor Valor	Simatic PCS7	Edge Apps	

Teamcenter, Comos, PlantSight

Digital Enterprise automation platforms

SIEMENS
Ingenuity for life



SIMATIC

Scalable industrial automation systems



SINUMERIK

Intelligent solutions for machine tools



SIMATIC PCS 7

Powerful, compact hardware



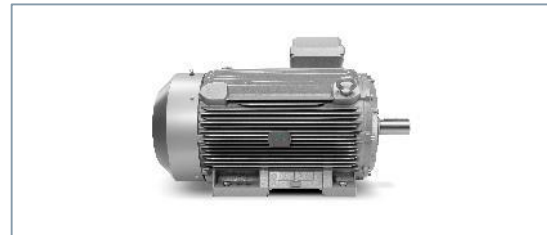
SIMOTION

High-end motion control system



SINAMICS

Frequency converter for every drive application



SIMOTICS

Highly efficient electric motors



SIRIUS

Modular industrial controls



SCALANCE

Reliable industrial communication



Hyundai goes digital with Siemens software



Digital Enterprise 2019

Thinking industry further!

Data
usage

Plat-
forms

Cutting-edge
technologies

Growing volumes of data in the digital transformation are opening up new productivity potential and greater flexibility



Data volume (in zettabytes¹)



Greater data **usage** via **algorithms** on suitable hardware

Data from design, engineering, production, performance

Industrie 1.0
Steam engine

Industrie 2.0
Conveyor belt

Industrie 3.0
Automation
Secure processes

Industrie 4.0

Digital Enterprise
End-to-end solutions

Thinking industry further!

¹ 1 zettabyte = 10²¹ bytes

² Picture Source: Licensed under the Creative Commons Attribution-Share Alike 3.0 Unported, 2.5 Generic, 2.0 Generic and 1.0 Generic license.

Thinking industry further!

Industrial Edge

Artificial intelligence

Autonomous production systems

Industrial 5G

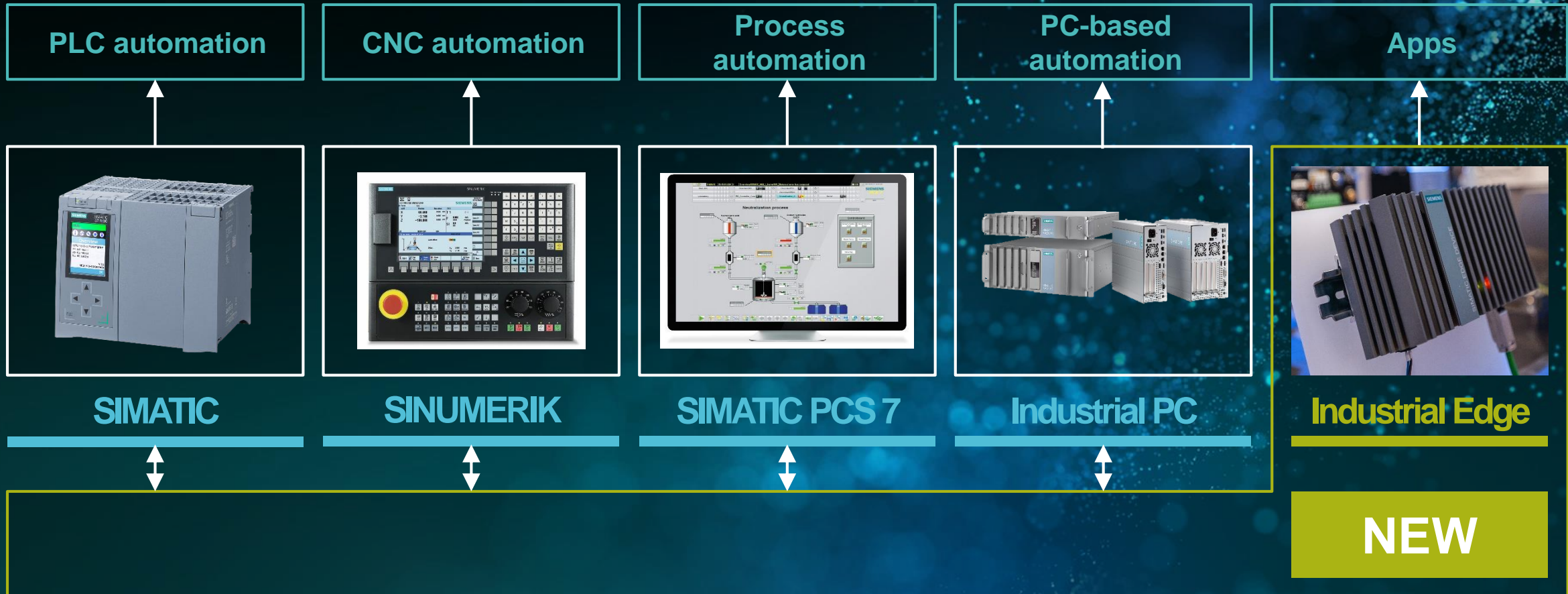
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Blockchain

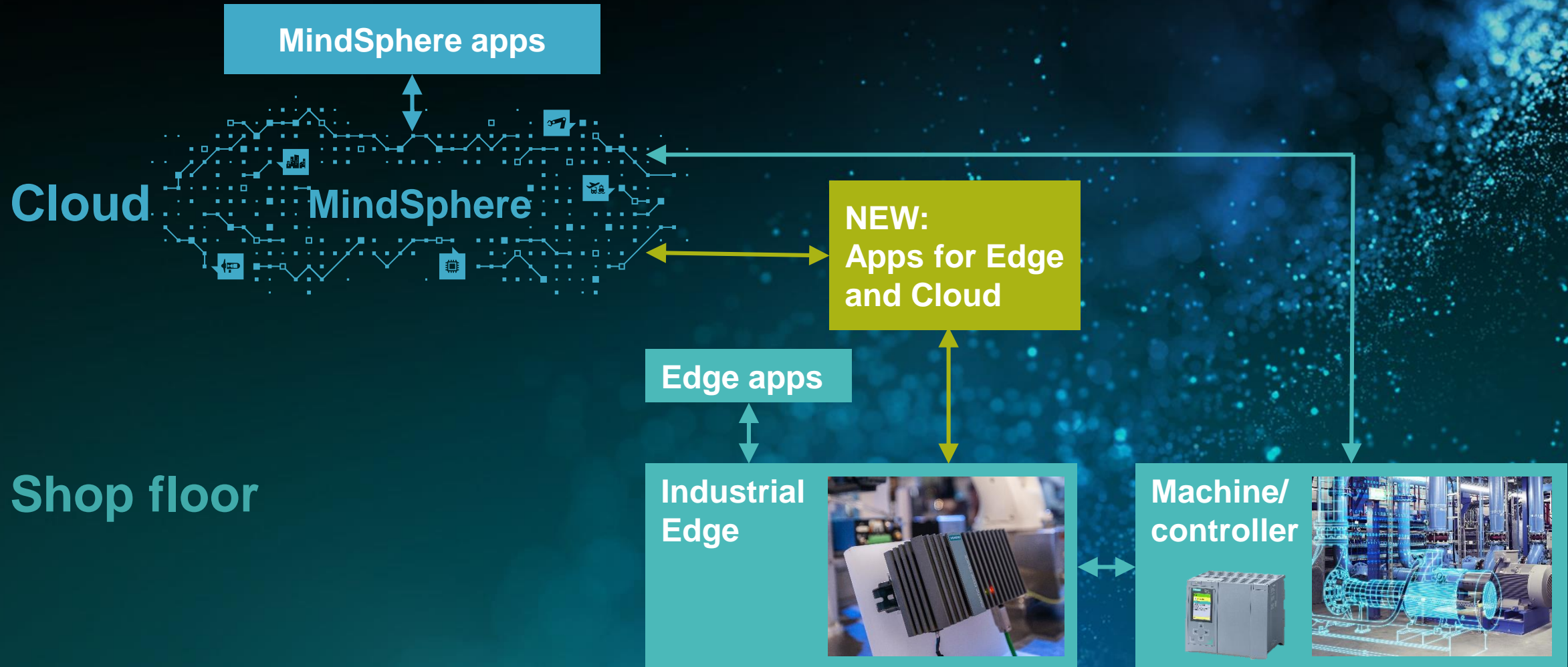
Additive manufacturing

New process control system

Digital Enterprise automation platforms – enhanced by edge functionality



Renaissance on the shop floor – a scalable concept up to the MindSphere Cloud system



MindSphere | World – currently about 90 member companies in Europe and Asia



¹ In the process of foundation

Collaboration: Volkswagen also to cooperate with Siemens for Industrial Cloud



Siemens as integration partner ensures efficient networking of production systems, machinery and equipment at 122 Volkswagen plants

Data transparency and analysis to lay foundations for further productivity improvements

Volkswagen, Siemens and machinery and equipment suppliers develop new functions and applications together



Industrial communication

Industrial 5G: reliable and high-performance communication for Industrie 4.0

Digital Connectivity for Industry



NEW

- Industrial 5G is a clear part of Siemens strategy
- Separate research projects for Industrial 5G
- 5G Interoperability Test Center under real OT conditions
- Evaluation and testing of industry standards (TSN, OPC UA)
- In future at Digital Industries: Infrastructure for Industrial 5G (base stations and clients)

Data usage – Platforms – Cutting-edge technologies – Heller4Industry example



HELLER

Business models

Flexibility

Productivity

Automation

Sinumerik

Heller Maschinenbau
Control of machines

Sinumerik Edge

Heller4Performance
Optimization of machines
Heller4Operation –
Integration in value chain

**Analyze MyMachine/
Analyze MyCondition**

Heller4Services
Predictive maintenance

MindSphere

Heller4Use
Flexibility and
transparency
in machine use

Thinking industry further!

Outlook: increasing convergence
of IT and OT

Industrie 4.0



**Working with
data**

**Optimizing
with data**



Connecting with data from IT