

# Discover the value of the Digital Enterprise

Klaus Helmrich | Member of the Managing  
Board of Siemens AG | SPS IPC Drives 2017

# New possibilities through digitalization

How products are designed

How we simplify production processes

How we optimize product performance

**The Digital Enterprise portfolio for Industrie 4.0 is already here –  
new flexible solutions for new data-based business models**



The conditions are in place

# The hour of implementation has arrived!

- For shorter time to market
- For greater flexibility
- For improved quality
- For more efficiency



**>150 billion €**  
of additional growth  
for Germany through digitalization<sup>1</sup>

**Only one fifth**  
of German SMEs  
are among the digital pioneers<sup>2</sup>

# Germany's powerful SMEs are highly innovative – The time to leverage the opportunities of digitalization is now



**68%** of small and medium-sized enterprises in Germany envisage opportunities for new, digital business models<sup>1</sup>



**38%**

aim for improved  
customer  
support



**17%**

expect  
increased revenue<sup>2</sup>



**41%**

have registered  
sales growth<sup>1</sup>



**79%**

envisage potential  
for production  
optimization

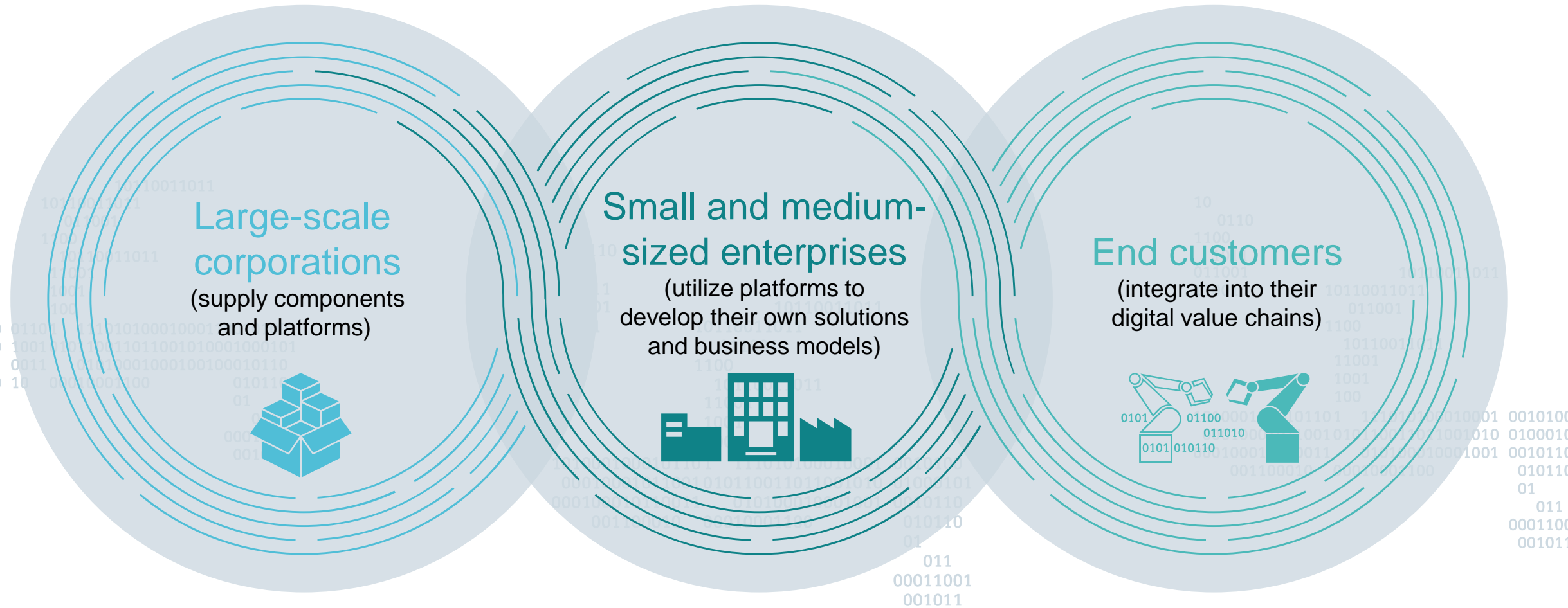


**50%**

are able to extend  
their product and  
service portfolio<sup>2</sup>

<sup>1</sup> Source: IHK Company Barometer 2016 (1620 companies surveyed) | <sup>2</sup> Source: Federal Ministry of Economics: Brochure "SMEs go Digital" (March 2017)

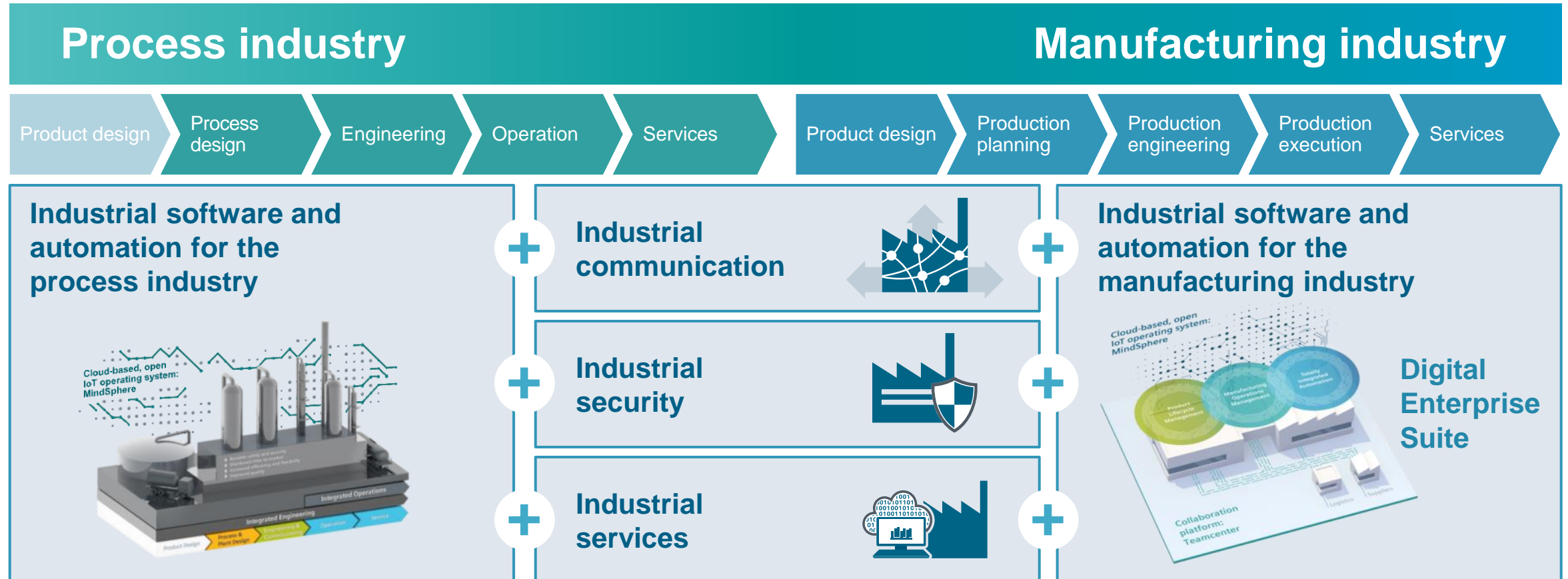
# Cooperative partnership based on mutual respect – Vital to the digitalization breakthrough



# Digital Enterprise is our portfolio of solutions for digital transformation in the manufacturing and process industries



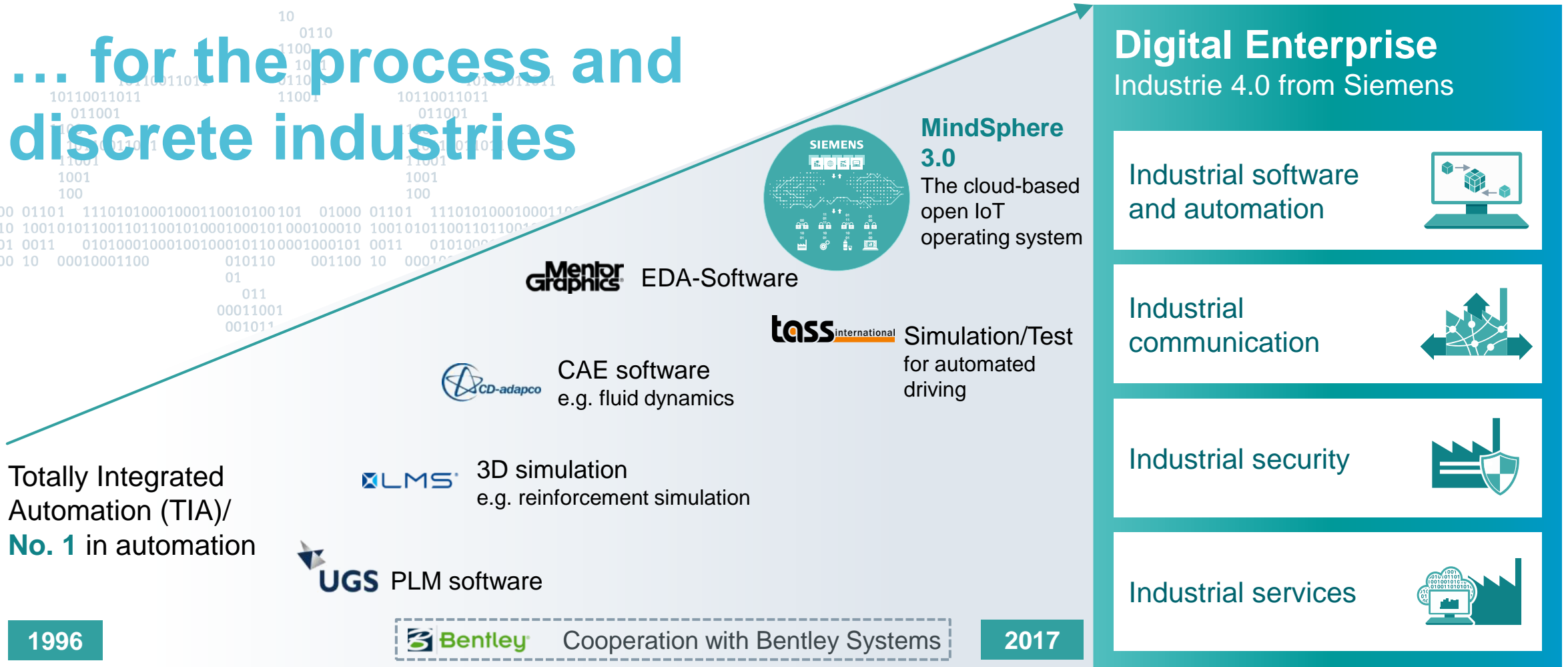
## Digital Enterprise



# Digital Enterprise from Siemens – Systematic development of a portfolio for the digitally integrated value chain

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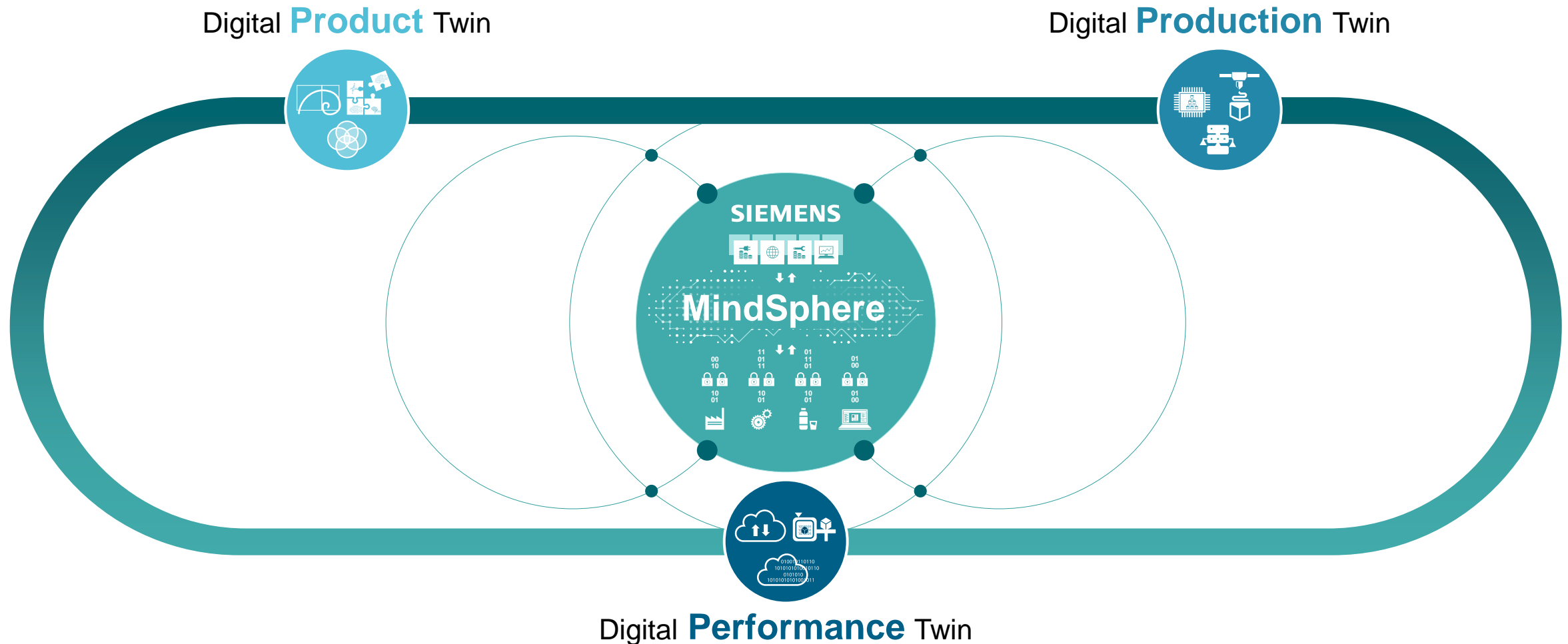
... for the process and discrete industries





# The digital twin creates the conditions for flexibility in product design, in production and product performance

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# Our Digital Enterprise portfolio innovations at the SPS 2017 – A selection of highlights

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## MindSphere 3.0

Now on Amazon Web Services with more efficient open Application Programming Interface (API) for external developers



## SIMOTICS IQ

Connection of electrical Siemens motors to the cloud



## TIA Portal V15

Integration of handling functions and robotics



## S7-PLCSIM Advanced 2.0/NX 12

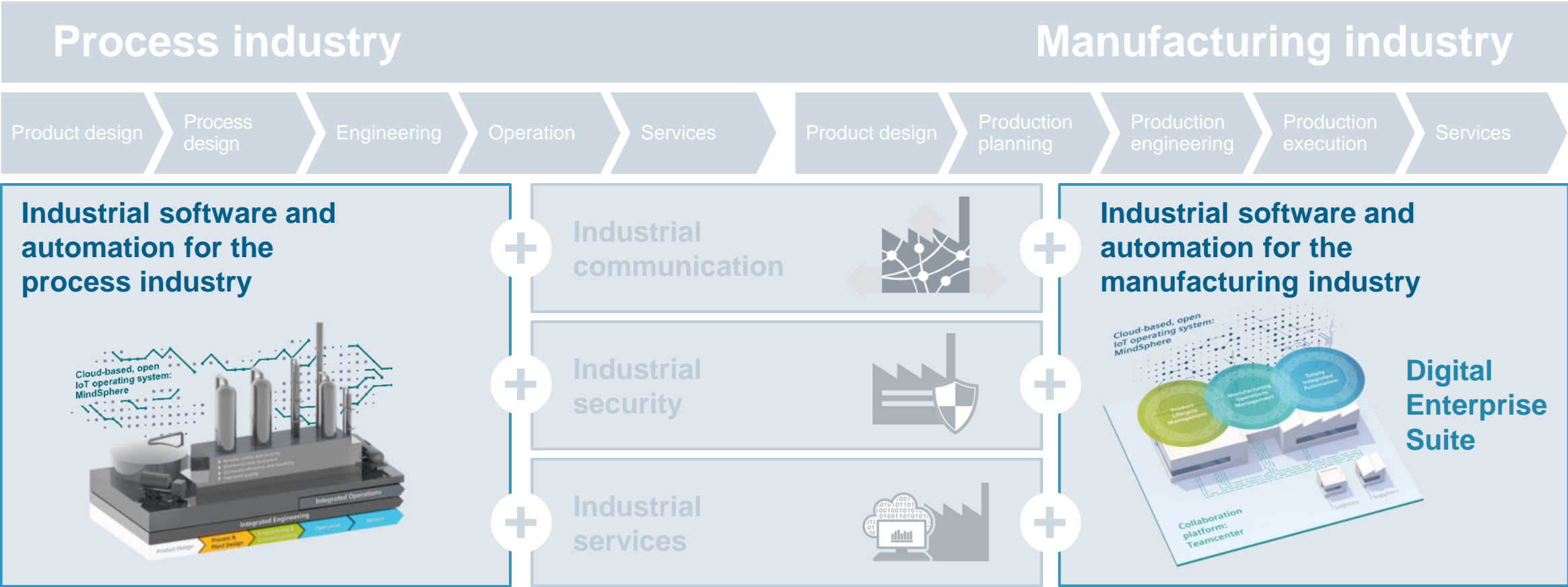
Virtual commissioning of individual units, machines and whole plants



# Industrial software and automation for the process and manufacturing industry



## Digital Enterprise



## Before

Test of **mechanical properties**, **ergonomic aspects** and **transport routes** using a wooden model

## Now

**Bausch + Ströbel** uses virtualization center for testing and optimizing virtual models of filling and sealing machines for the pharmaceutical industry



# Competitive edge for Bausch + Ströbel due to digital twin – Faster engineering and commissioning

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**NX CAD  
software**

**TIA  
Portal**

**NX  
Mechatronics  
concept  
designer**

**Team-  
center**

# +30%

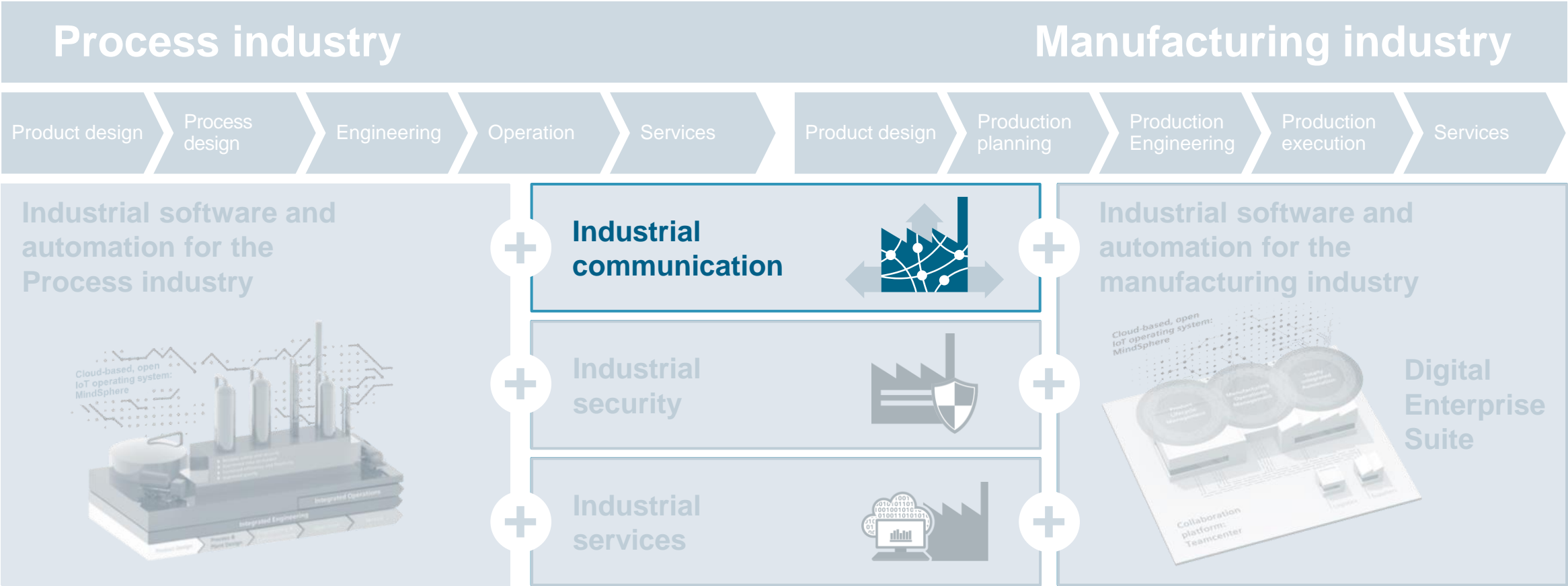
engineering efficiency by 2020

+ Virtual commissioning

+ Optimized workflow

+ High level of flexibilization  
to fulfill additional customer  
wishes

Digital Enterprise





## Before

Laborious – often manual – stocktaking,  
time-consuming order processes  
and cost-intensive controlling

## Now

Digital requirements analysis across the entire  
logistics process at **Würth Industrie Service** with  
iBox and RFID technology: rapid consumption-  
driven delivery with **cost savings of up to 20%**

Photo: Würth Industrie Service GmbH & Co. KG

# Communication from the field level up to the cloud – Siemens designs and implements industrial networks

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## Cloud

Secure data storage and transfer

## Industrial backbone

Coordinated transition between  
automation network and IT network

## Machine level/cell level

Production and automation cells

## + One solution partner for industrial networks

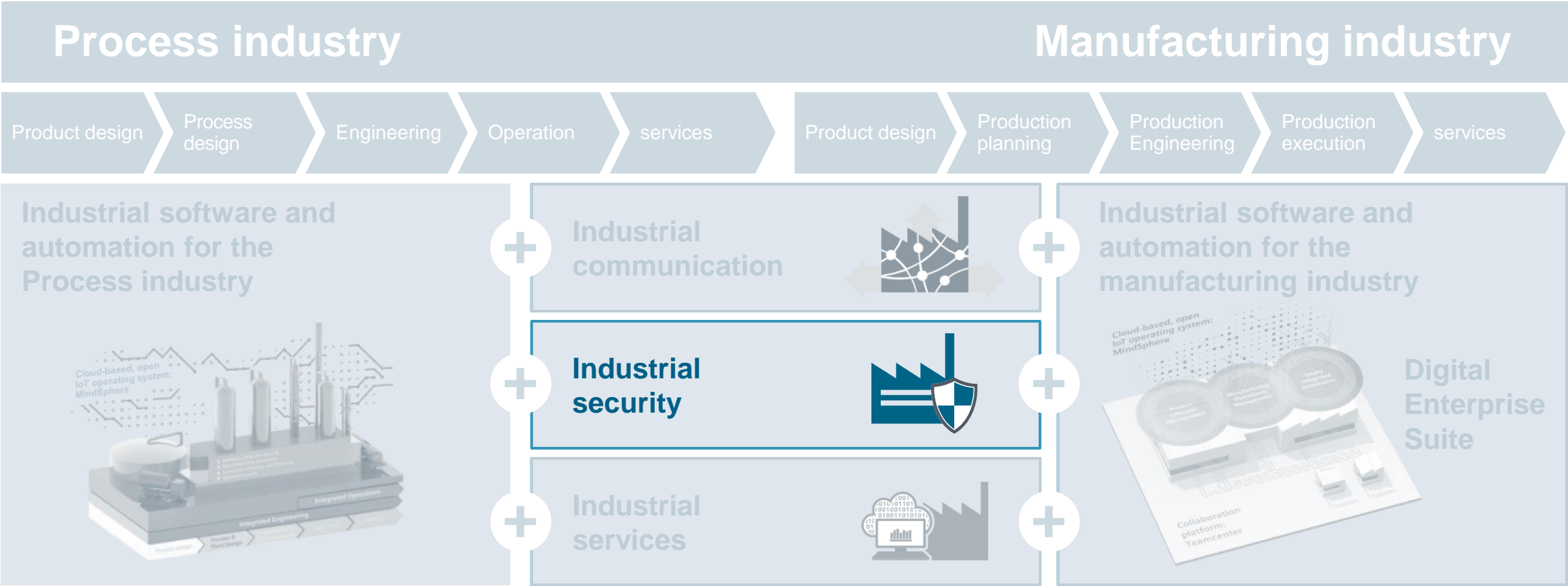
+ End-to-end secure data  
communication

+ Industrial networks for widely  
different sectors of industry

+ Training schemes and global  
partner network



Digital Enterprise

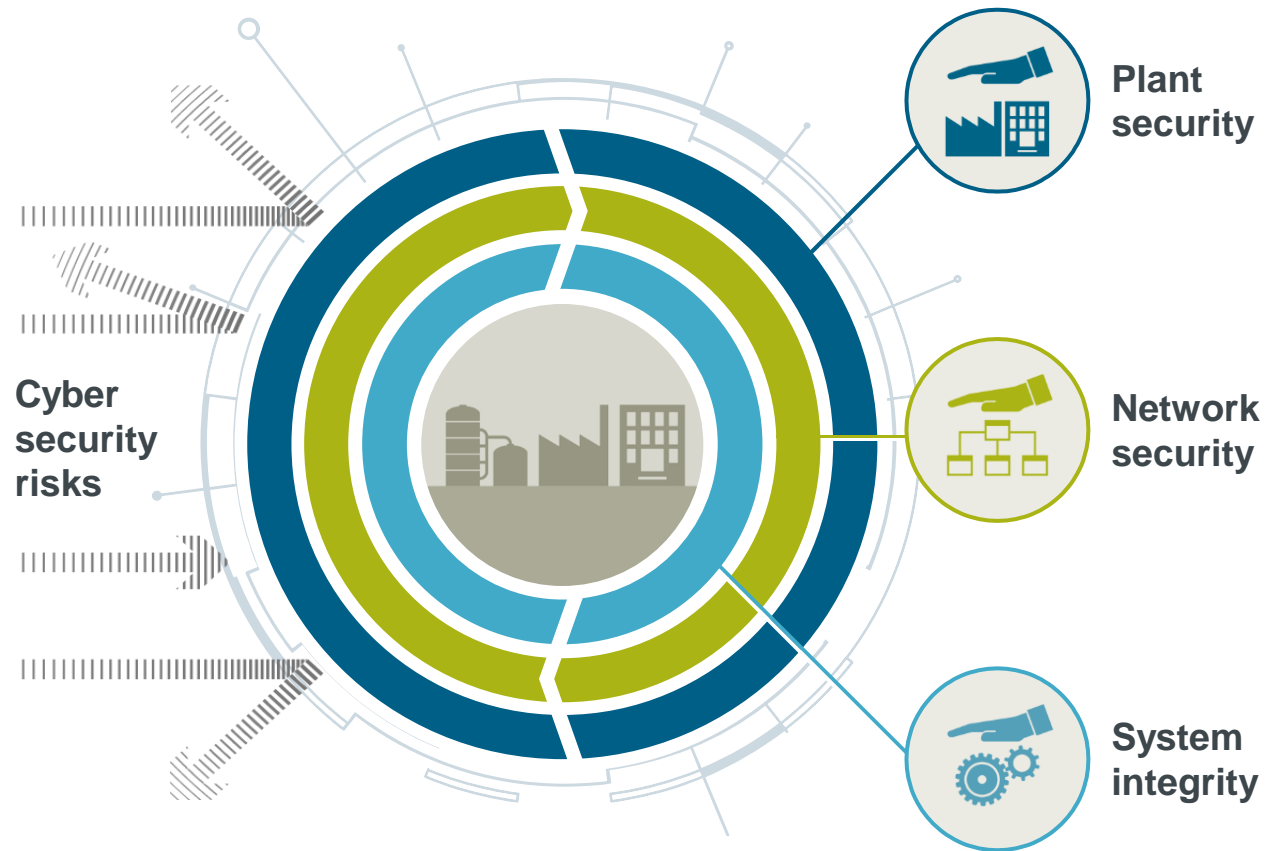


## Siemens Motor Factory in Bad Neustadt Defense in Depth makes for greater machine security

- Secure production processes due to plant security, network security and system integrity
- IT security from risk analysis through establishment of secure communication to continuous monitoring
- Based on applicable security standards (e.g. IEC 62443 standard)

# Comprehensive portfolio of security products and services for current and future cyber security challenges

## Defense in Depth



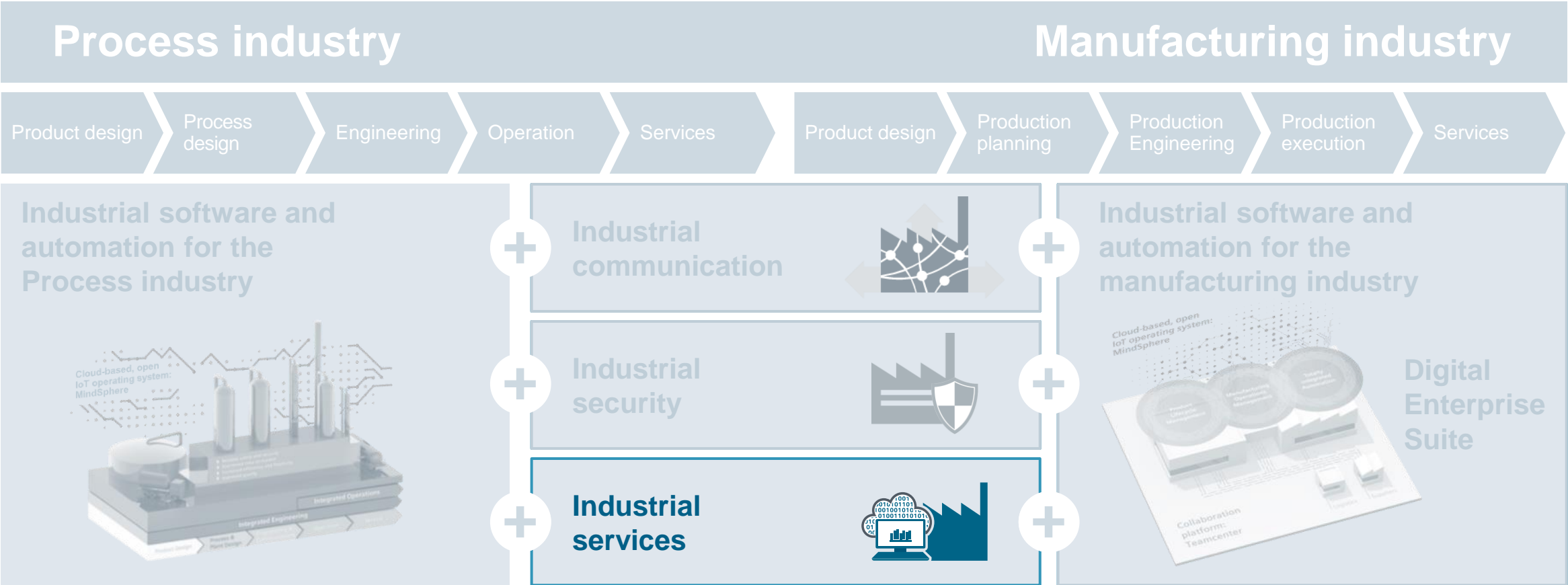
**Protection against  
sabotage**

**Secure cloud  
architecture**

**Protection of  
know-how**



Digital Enterprise





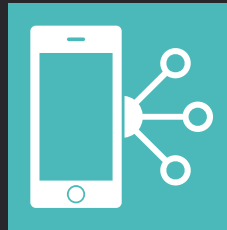
# MindSphere

**New: Version 3.0 on  
Amazon Web services**

Industry expertise and cloud  
competence from a single  
source



## Fast development of robust IoT solutions



More powerful development environment with  
open Application Programming Interface (API)

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Extensive device, enterprise and database  
connectivity

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Advanced analytics



## Before

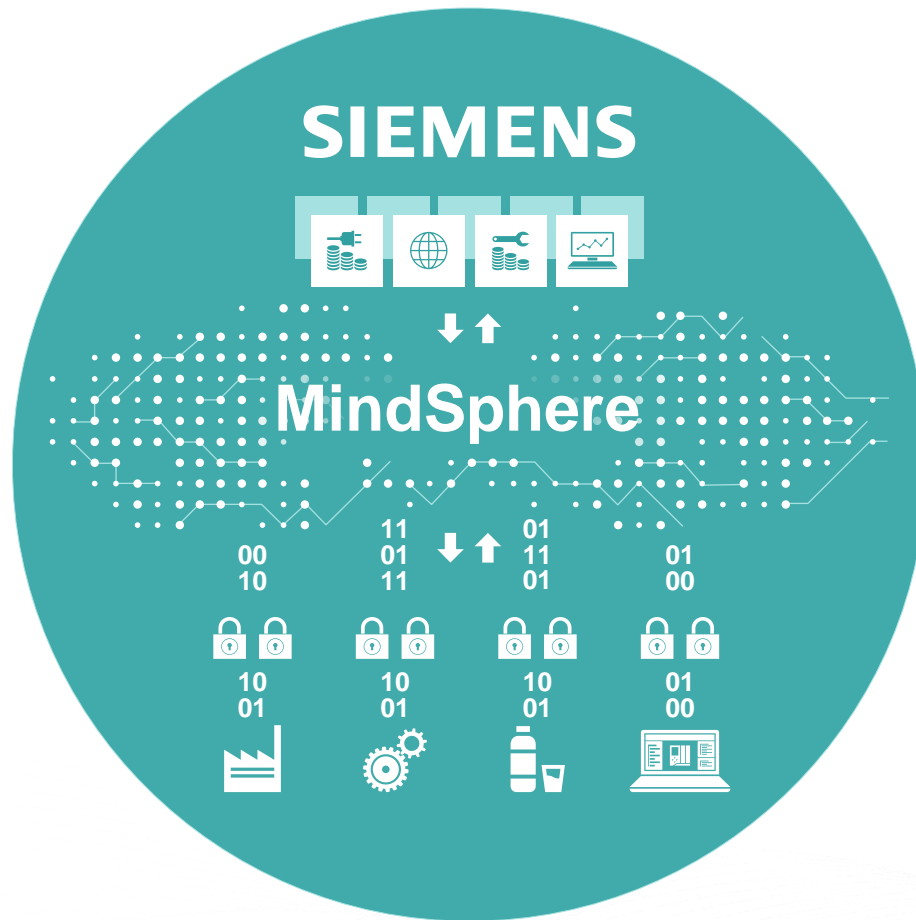
Fluid quality checks required regular sample taking and time-consuming laboratory testing, often only reactively or without any concrete trigger



## Now

**Cofac AG** monitors the quality of fluids such as oil in steam turbines or hydraulic plants **continuously online**; in case of contamination, the app, for instance **Fleetmanager**, proactively issues an alert. The system can also be deployed by **small and medium-sized** enterprises without major investment

# Cofac stands out from its market competitors with new business models – Developed on the basis of MindSphere



## Lower costs

due to distributed monitoring

+ Out-of-the-box security

+ 15 minutes for linking from the field level up to the cloud



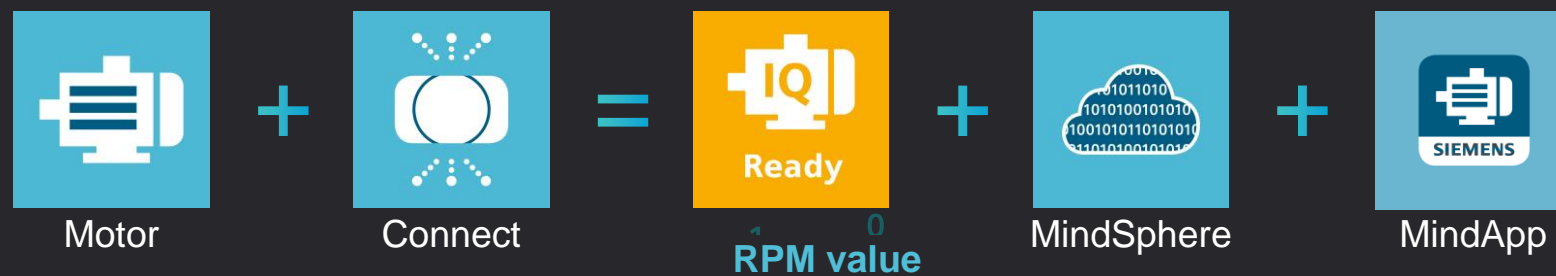
# Digital revolution for motors

Connection of Siemens  
electric motors to the cloud

- Higher level of availability
- Optimized maintenance and services
- Greater efficiency and productivity

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## SIMOTICS IQ



Power consumption    Servicing information  
Operation times and durations    Load  
Localization    Cooling status





**Additional partnership financing service to boost implementation of Industrie 4.0 – Aimed at SMEs**



# **Pay-per-use models and payment plans**

**to simplify implementation of digital solutions, aimed particularly at SMEs**

**Example: Machine builder EiMa**

## **Fast track to digitalization with customized financing model**

- From a single source: hardware and software solutions as well as tailored financing to boost long-term competitive standing
- Cost savings due to digital technologies enable additional investment
- Personalized payment plan from Siemens Financial Services for improved liquidity
- 3-month test phase for software facilitates customer decision



# The Digital Enterprise portfolio has put the conditions for Industrie 4.0 into place – The hour of implementation has arrived!



## Small and medium-sized enterprises too are already sharpening their competitive edge through digitalization – both in the process and discrete industries

- With our Digital Enterprise solutions for the digital twin across the entire value chain
- With our new open cloud-based IoT operating system MindSphere
- With our world leading automation portfolio

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## Siemens offers an additional financing partnership service to boost the implementation of Industrie 4.0 – aimed at small and medium-sized enterprises

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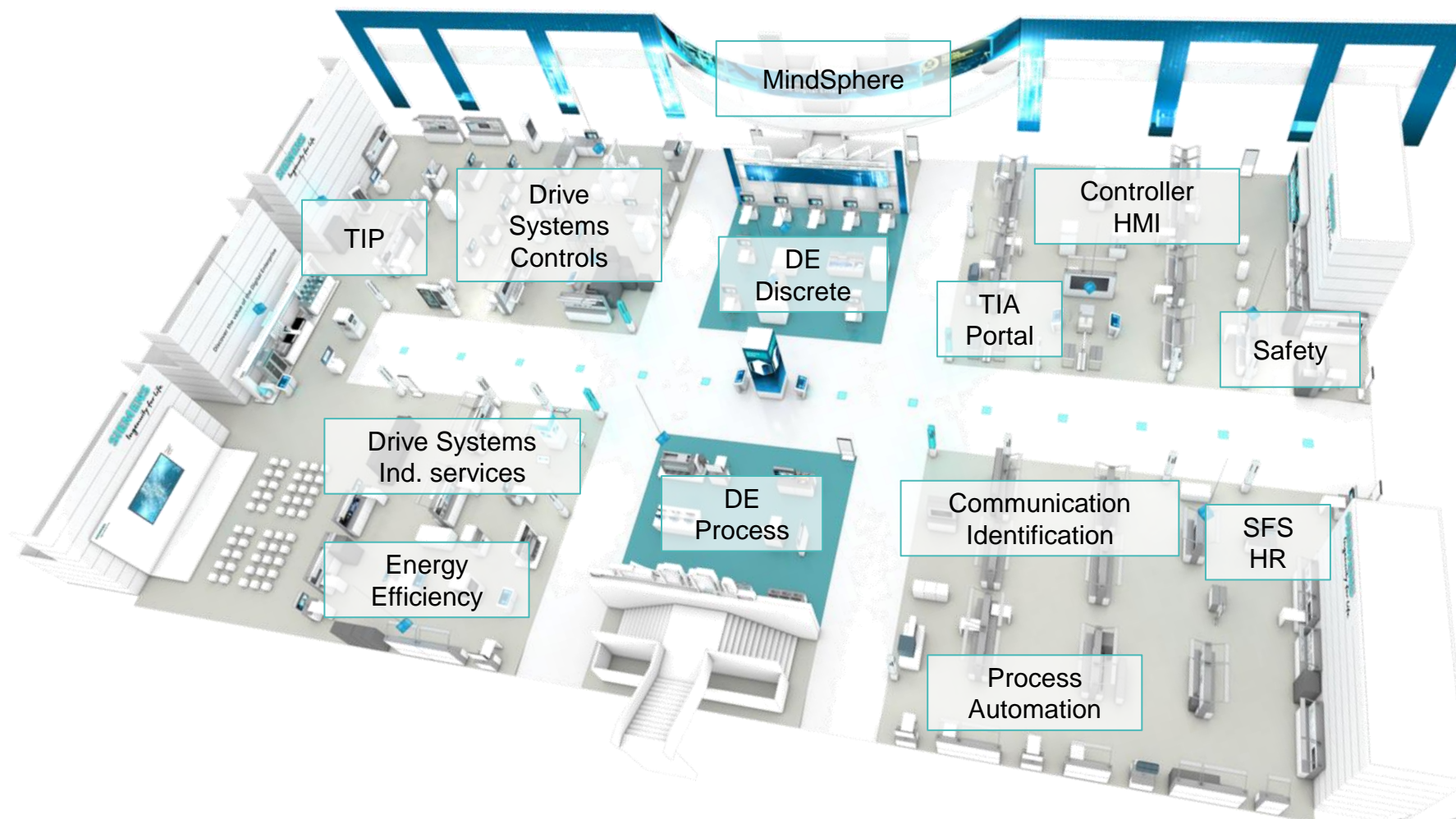
## Industrie 4.0 calls for an extended model of cooperative partnership based on mutual respect

- Large-scale enterprises supply platforms and components
- Small and medium-sized enterprises utilize these platforms to develop their own solutions and business models
- End customers integrate these into their digital value chain



# Experience the Digital Enterprise live in Hall 11 – We look forward to your visit!

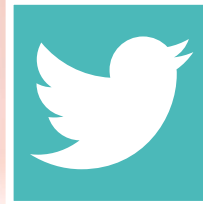
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## More detailed information

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**sps ipc drives**





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All information is preliminary.

# Thank you!

