



Production Technology Center Berlin (PTZ)
We optimize Production.

ITAPA 2019
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» **Digital Transformation
towards Industry 4.0** «

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INSTITUT
PRODUKTIONSANLAGEN UND
KONSTRUKTIONSTECHNIK



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TECHNISCHE UNIVERSITÄT BERLIN

Digitalisation in Industrie

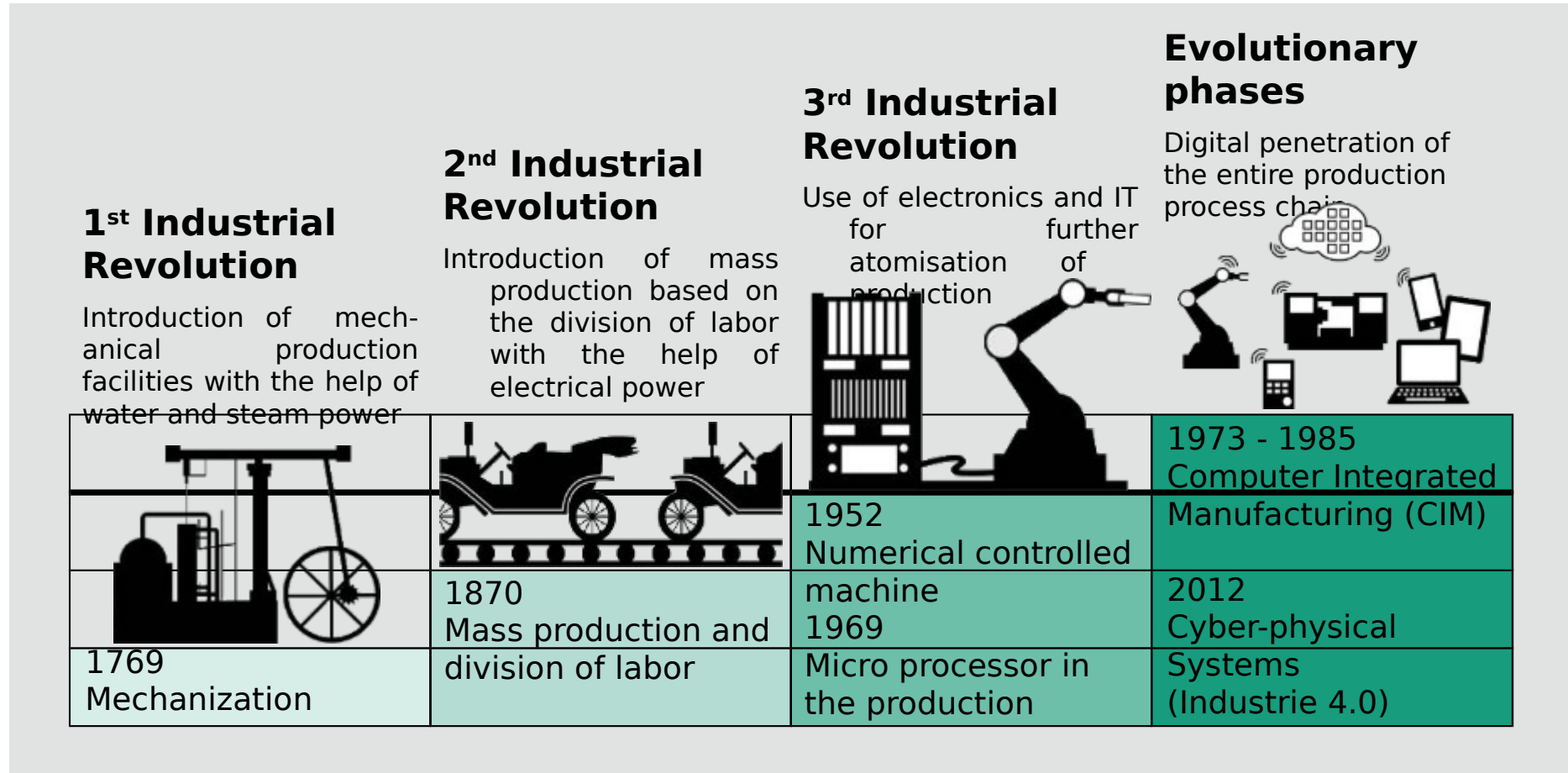


Automation of processes and business models by networking devices, systems, information and people with digital technology.

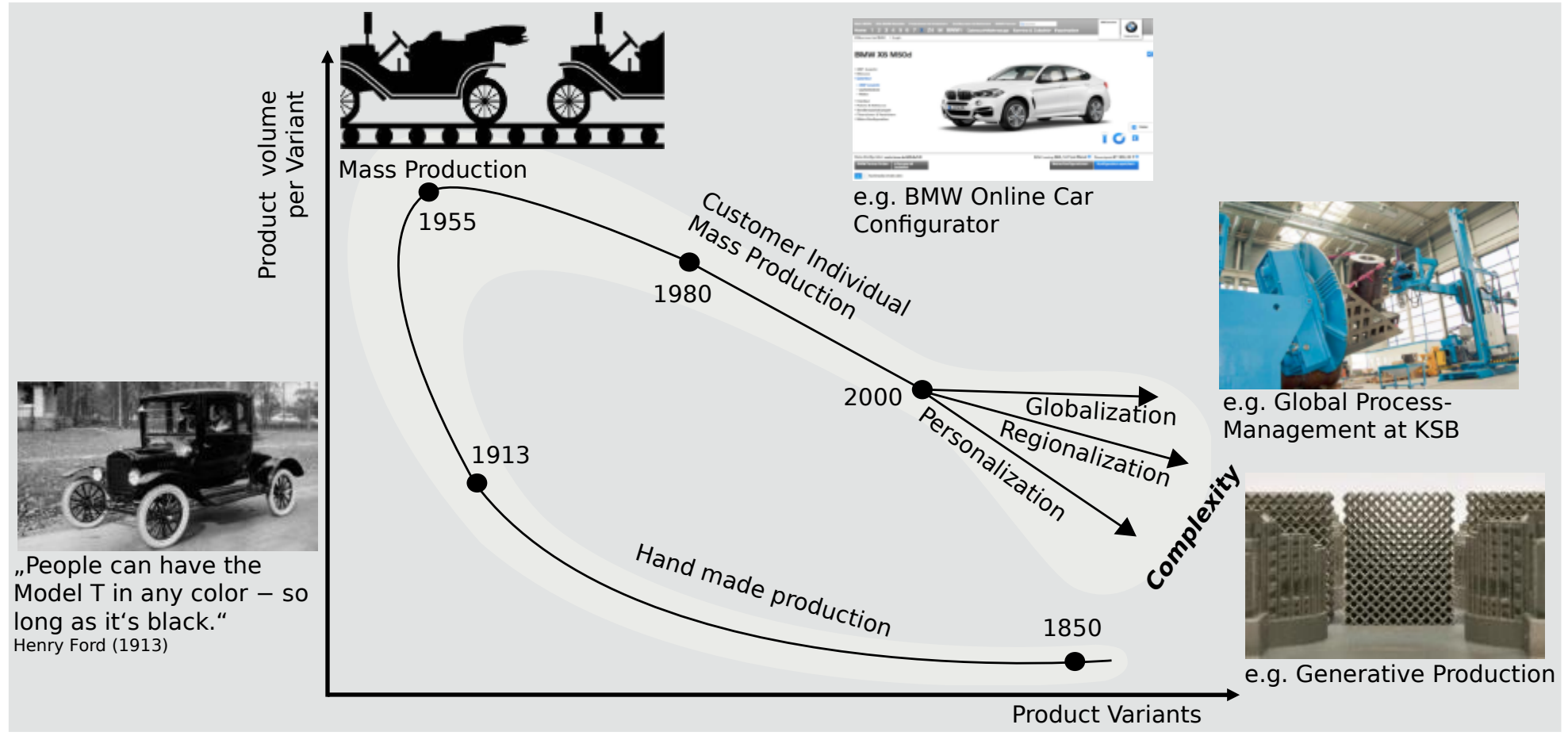
More and more data is being linked together and leads to new services and products. Business processes are being changed by mobile Internet use, cloud computing and social media.

Digital integrated, intelligent production

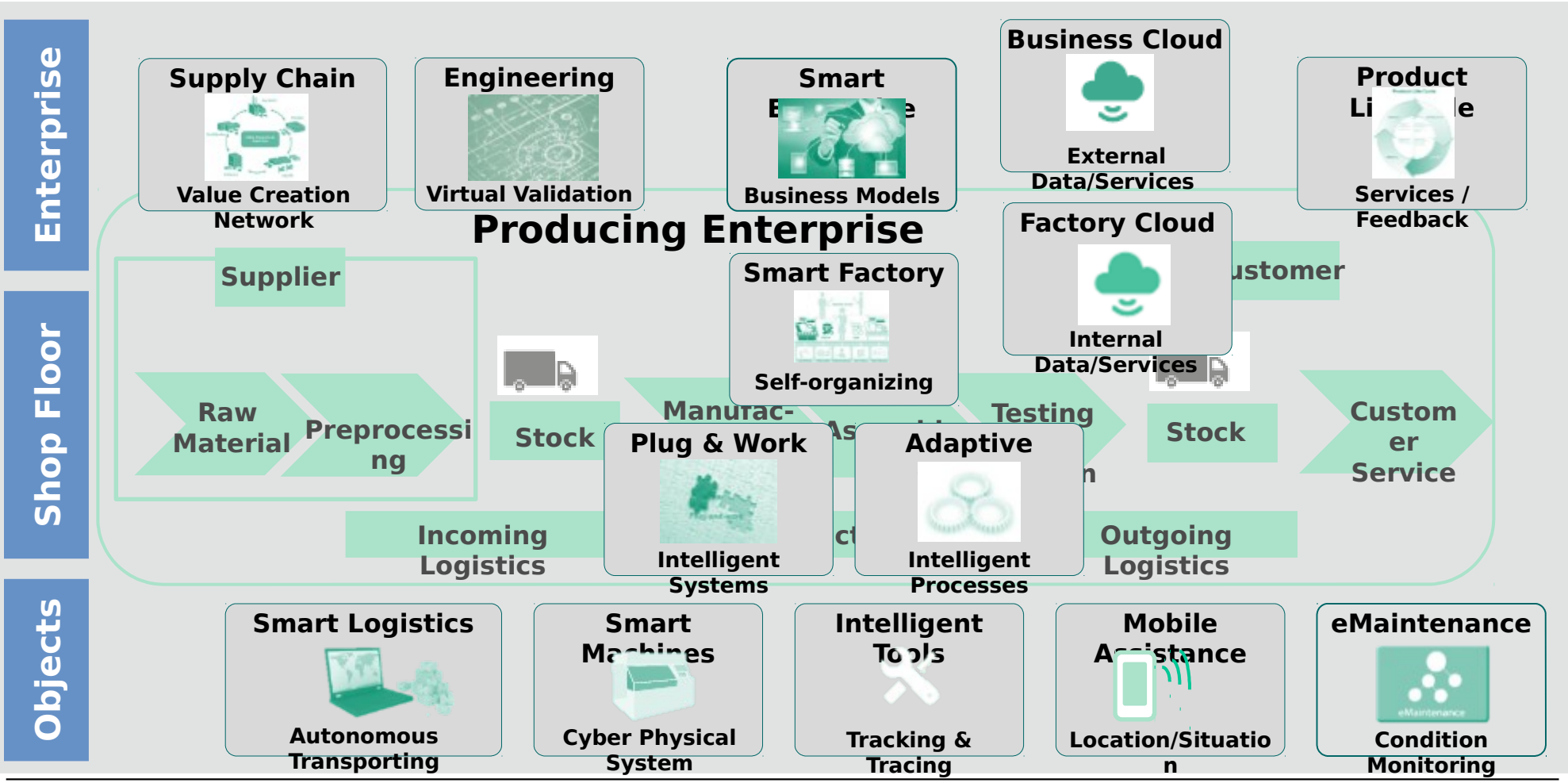
Industry 4.0 – The 4th Industrial Revolution?



Increasing Complexity leads to new Value Chains

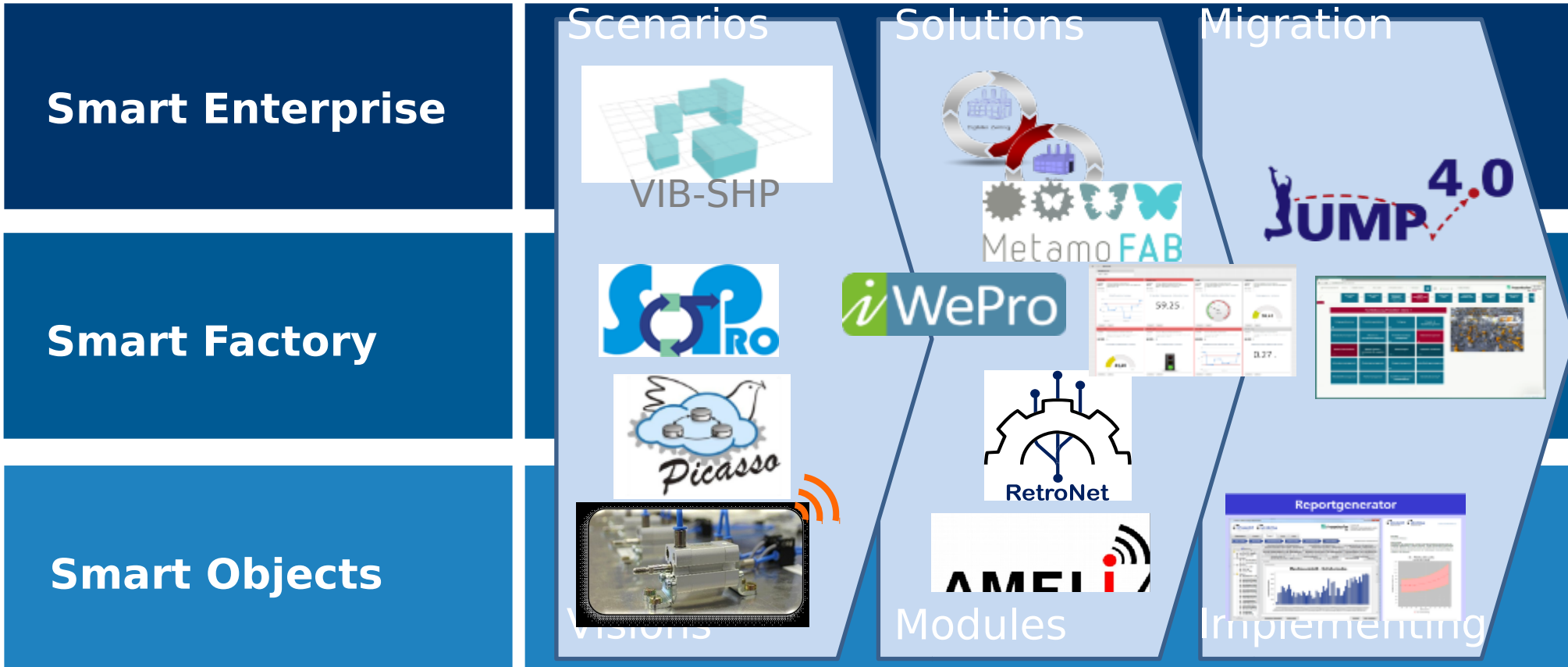


Solution Modules for Producing Enterprises



Innovation Strategy and Technology Development at IPK

Research projects in different sectors



Flexibilization

Production concept for gear manufacturing

short-term flexibility

enhancement

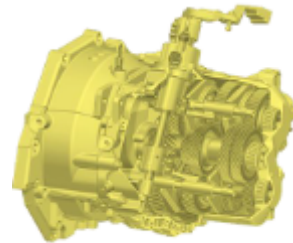
lot size flexibility

volume flexibility

staff, workers

...

- Better responsiveness to fluctuations of demand
 - flexibility & expandability
 - part types
 - capacity adjustment
 - work engineering
 - cooperative teams



Industry 4.0 projects at the Production Technology Centre Berlin



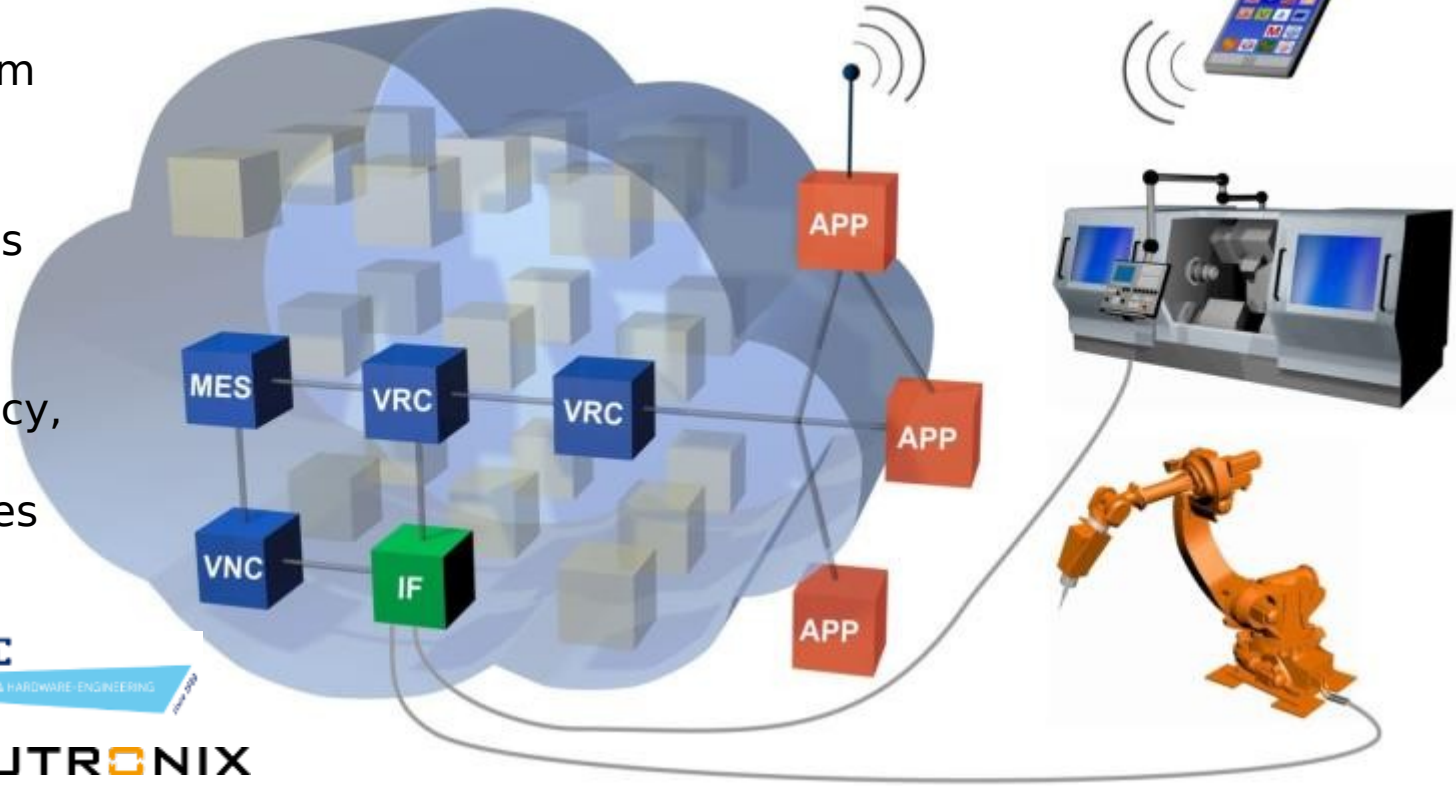
Industrial cloud-based controlling platform for a production with cyber-physical systems

GEFÖRDERT VOM



Bundesministerium für Bildung und Forschung

- Scalable controlling platform
- Additional/ subsequent functional modules (app-concept)
- IT-methods for backup, redundancy,



centralized updates

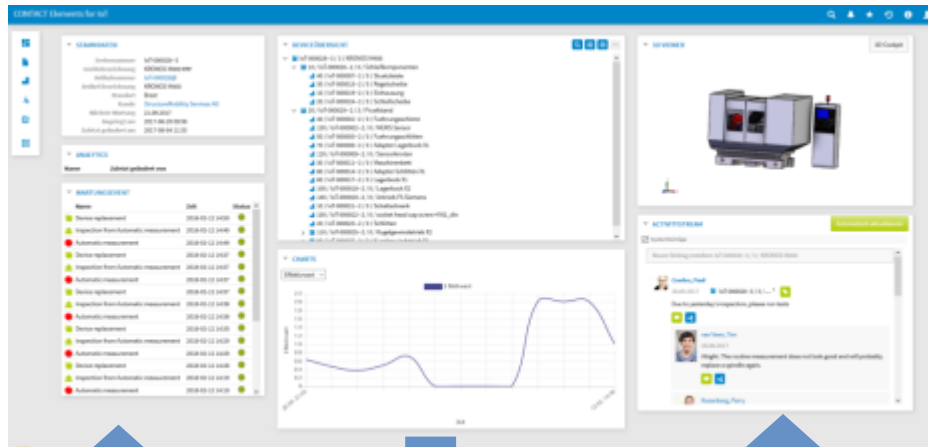


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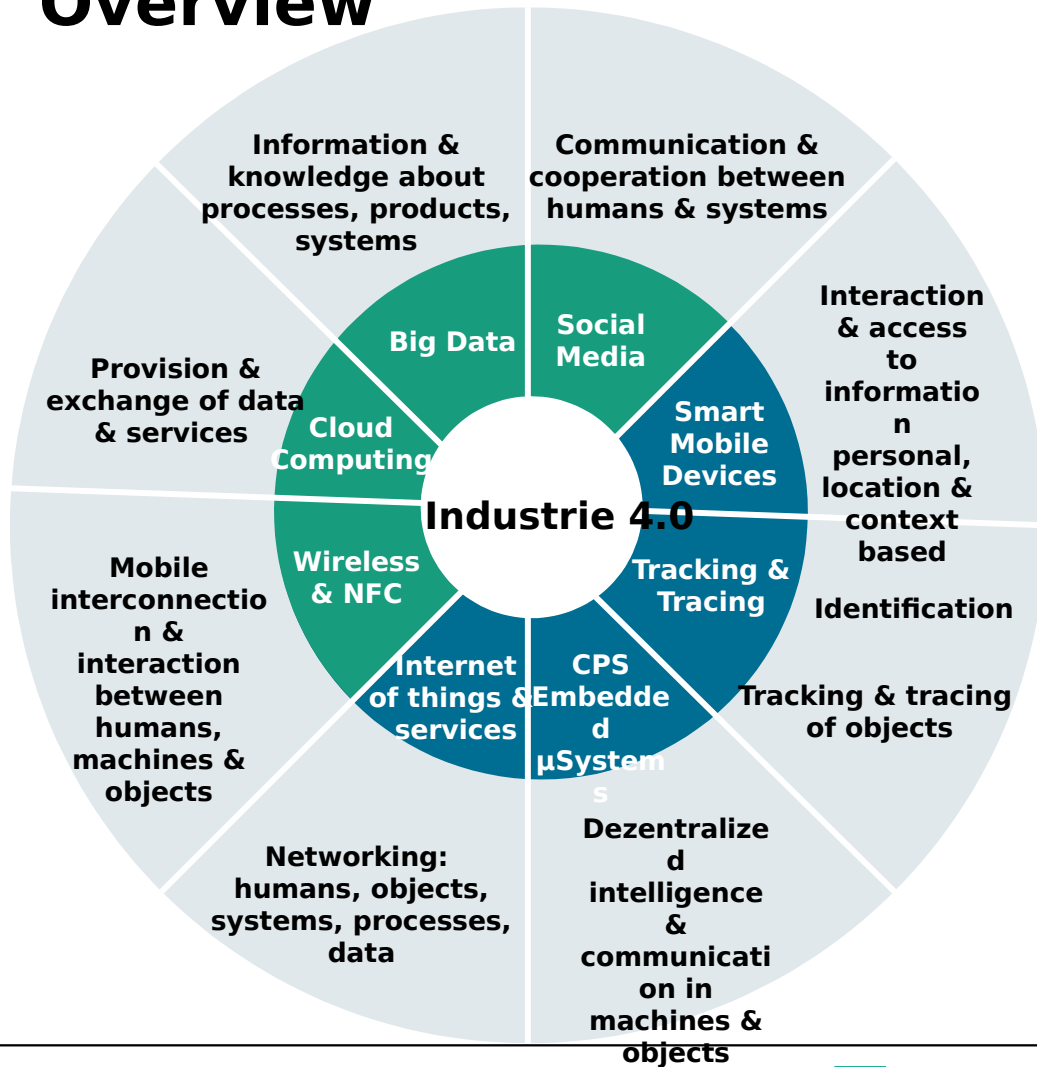
Digital Twin link to service process



- Digital Twin in Maintenance
- links product data with status and service information
- access to product information: Master data, drawings, parts lists, spare parts ...
- reports equipment status
- documents service activities
 - maintenance work
 - exchange of components (checkout and check-in)



Enabling Technologies and Prerequisites - Overview



Initial Core Technologies

- Internet of Things and Services
- Tracking & Tracing
- Smart Mobile Devices
- Embedded μ Systems

New Enabling Technologies

- Social Media
- Cloud Computing
- Big Data
- Wireless und NFC

»Berlin Center for Digital Transformation«



TRANSFER CENTERS FOR DIGITAL TRANSFORMATION

Internet of Things



IoT-Showroom,
IoT Lab
IoT Test Center

FOKUS

5G Testbed



Development and test
environment for
5G-Technologies

HHI

Industrie 4.0 Lab



Digitally integrated
Production

IPK

Hardware for CPS



System Kit for
Cyber Physical Systems

IZM

Thank you for your kind attention!



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