Purpose and scope of Factory-X

Factory-X Kick-Off, February 29, 2024

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Finanziert von der Europäischen Union
NextGenerationEU

Gefördert durch:
Bundesministerium für Wirtschaft und Klimaschutz
aufgrund eines Beschlusses des Deutschen Bundestages

Challenges for digitization in Germany

Internationalization
(e.g. CESMII, KOSMO, RRI)

Security

Data sovereignty

Lack of connectivity

Lack of interoperability

Lack of skills

Lack of speed

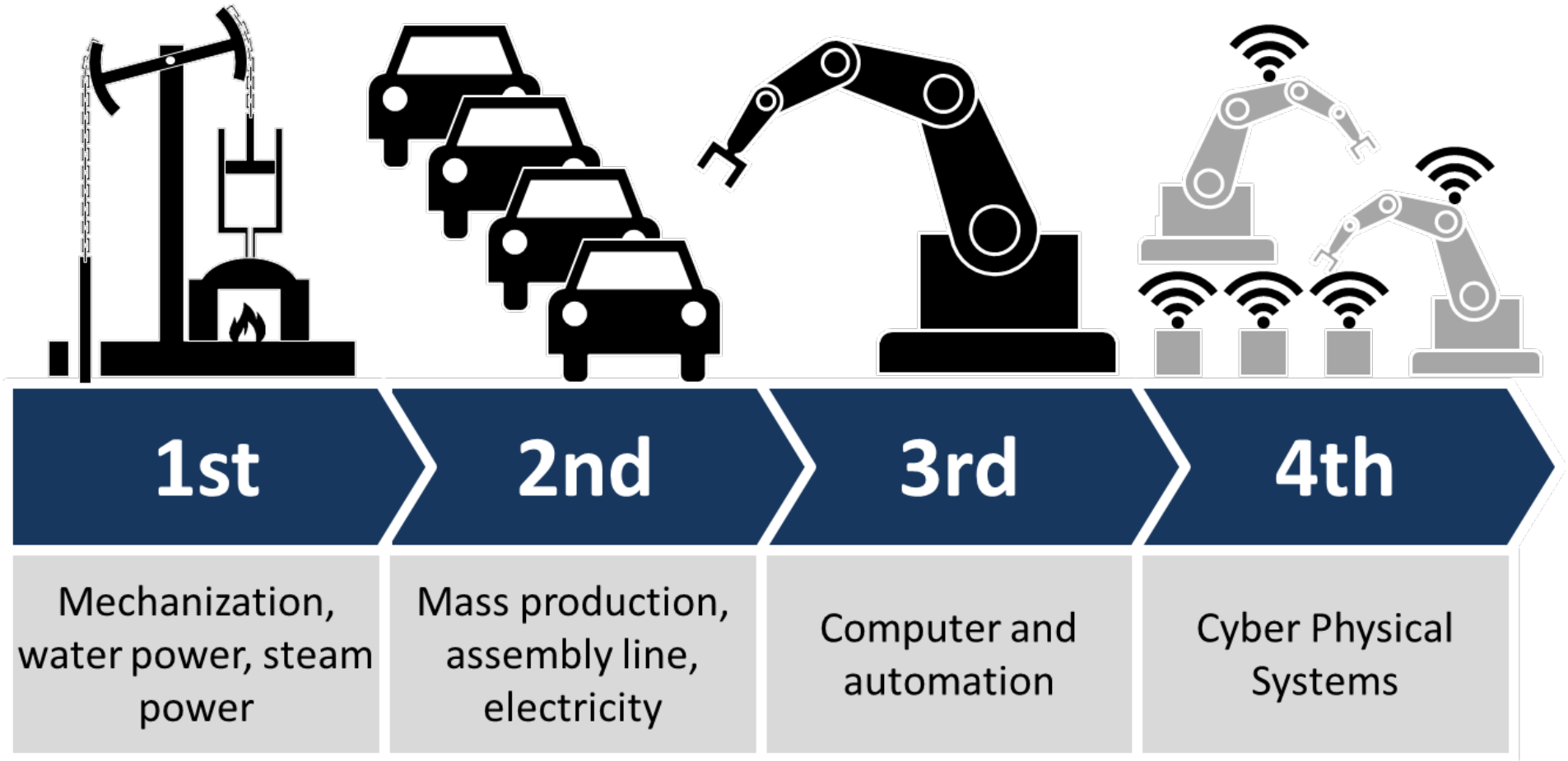
As-a-Service business models

SaaS

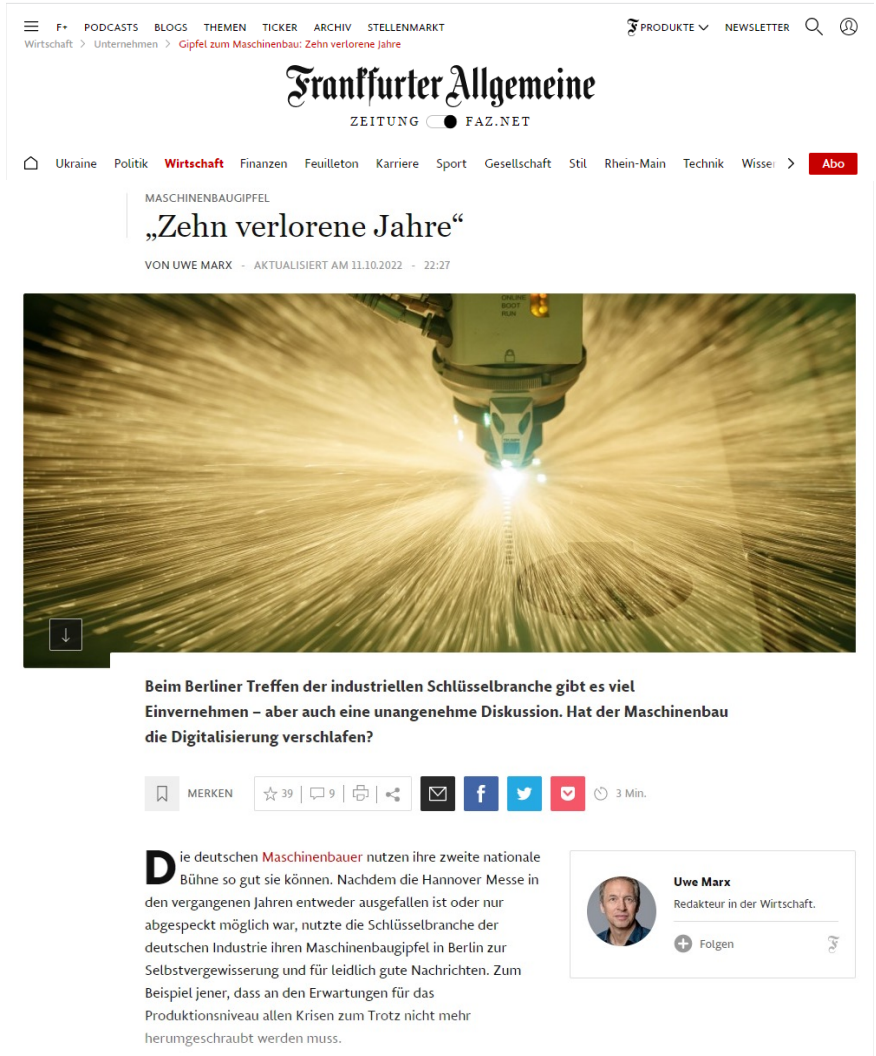
Standards & Regulations
(e.g. EU CRA, EU Data Act, OPC UA, AAS, …)

Scalability

Why we need it (now):
Industry 4.0 is a successful brand since more than 10 years . . .



. . . but has not lived up to expectations



F+ PODCASTS BLOGS THEMEN TICKER ARCHIV STELLENMARKT PRODUKTE NEWSLETTER

Wirtschaft > Unternehmen > Gipfel zum Maschinenbau: Zehn verlorene Jahre

Frankfurter Allgemeine
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Ukraine Politik Wirtschaft Finanzen Feuilleton Karriere Sport Gesellschaft Stil Rhein-Main Technik Wisse Abo

MASCHINENBAUGIPFEL

„Zehn verlorene Jahre“

VON UWE MARX - AKTUALISIERT AM 11.10.2022 - 22:27

Beim Berliner Treffen der industriellen Schlüsselbranche gibt es viel Einvernehmen – aber auch eine unangenehme Diskussion. Hat der Maschinenbau die Digitalisierung verschlafen?

MERKEN 39 9 3 Min.

Die deutschen Maschinenbauer nutzen ihre zweite nationale Bühne so gut sie können. Nachdem die Hannover Messe in den vergangenen Jahren entweder ausgefallen ist oder nur abgespeckt möglich war, nutzte die Schlüsselbranche der deutschen Industrie ihren Maschinenbaugipfel in Berlin zur Selbstvergewisserung und für leidlich gute Nachrichten. Zum Beispiel jener, dass an den Erwartungen für das Produktionsniveau allen Krisen zum Trotz nicht mehr herumgeschraubt werden muss.

Uwe Marx
Redakteur in der Wirtschaft.
Folgen

The five main reasons are:

1. Bottom line over top line

Focus on the shopfloor and on creating efficiencies, rather than focusing on the end customer and how to create more value

2. Siloed approach

Failure to bridge internal silos and connect the sales office with the shop floor and the service organization

3. Data sharing creates anxiety

Reluctance to share data about products and processes out of fear to lose IP, a competitive advantage or negotiation power

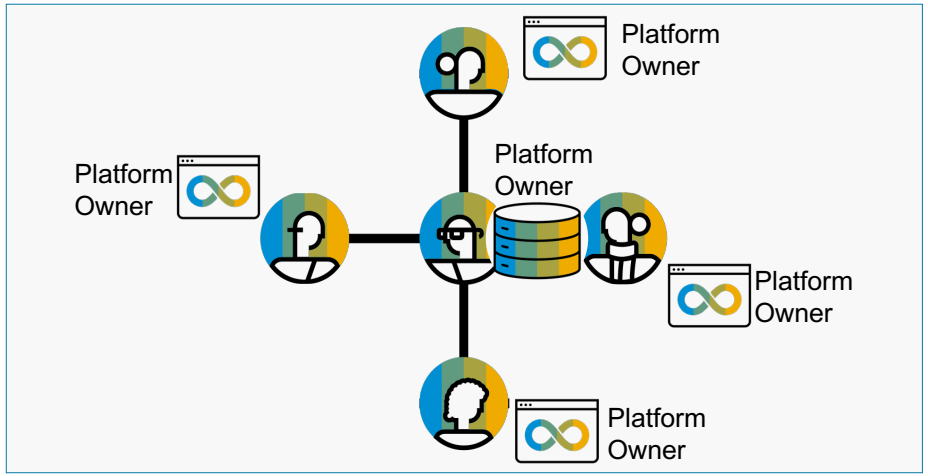
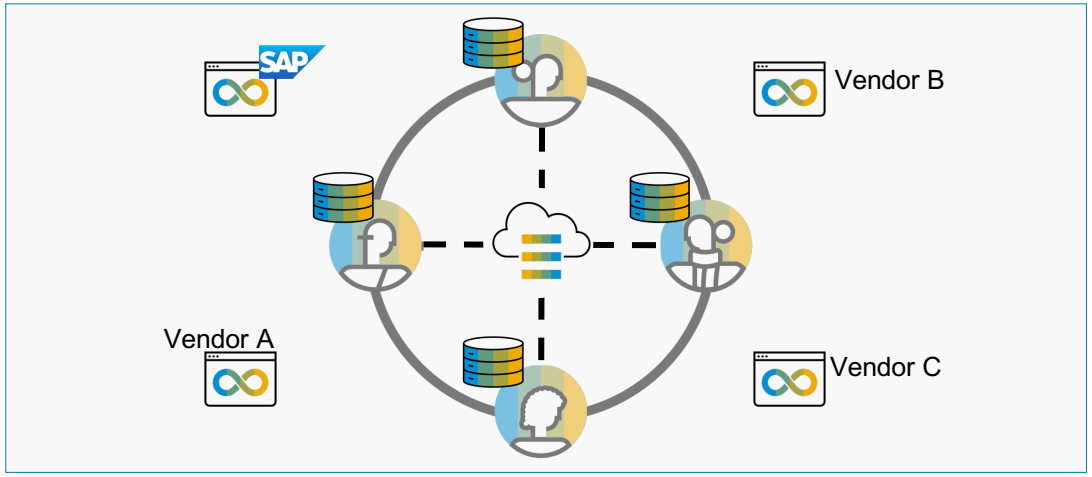
4. Complex technology

Integration of people, machines, equipment and systems across the value chain involves many players which often bring their own “standards”.

3. Scaling to smaller businesses

Risk and cost is often not manageable for smaller companies

Manufacturing-X: How it is different from traditional Industry Platforms

	Traditional Platform	Manufacturing-X
		
Applications	Provided by the platform owner all integrated and aligned	Multiple (competing) solutions from various vendors. Each vendor provides and operates his solution
Topology	Central network service	(Slim) federated operating environment provided by an operating company (joint-venture of multiple companies). Data exchange decentral / directly between network participants
Data Persistence	Centrally owned by the platform owner	Decentral data persistence – data resides at data owner who can grant access to others

= data persistence = application

Manufacturing-X: How it works

Dataspace Organization

Dataspace Partner
New and Existing

Data Sharing between Partners

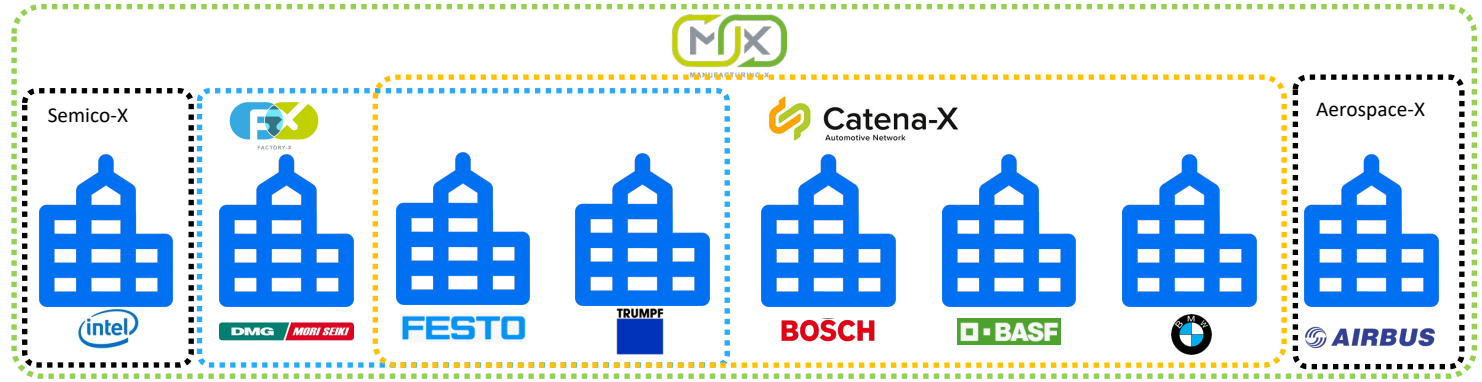
Applications and Use cases

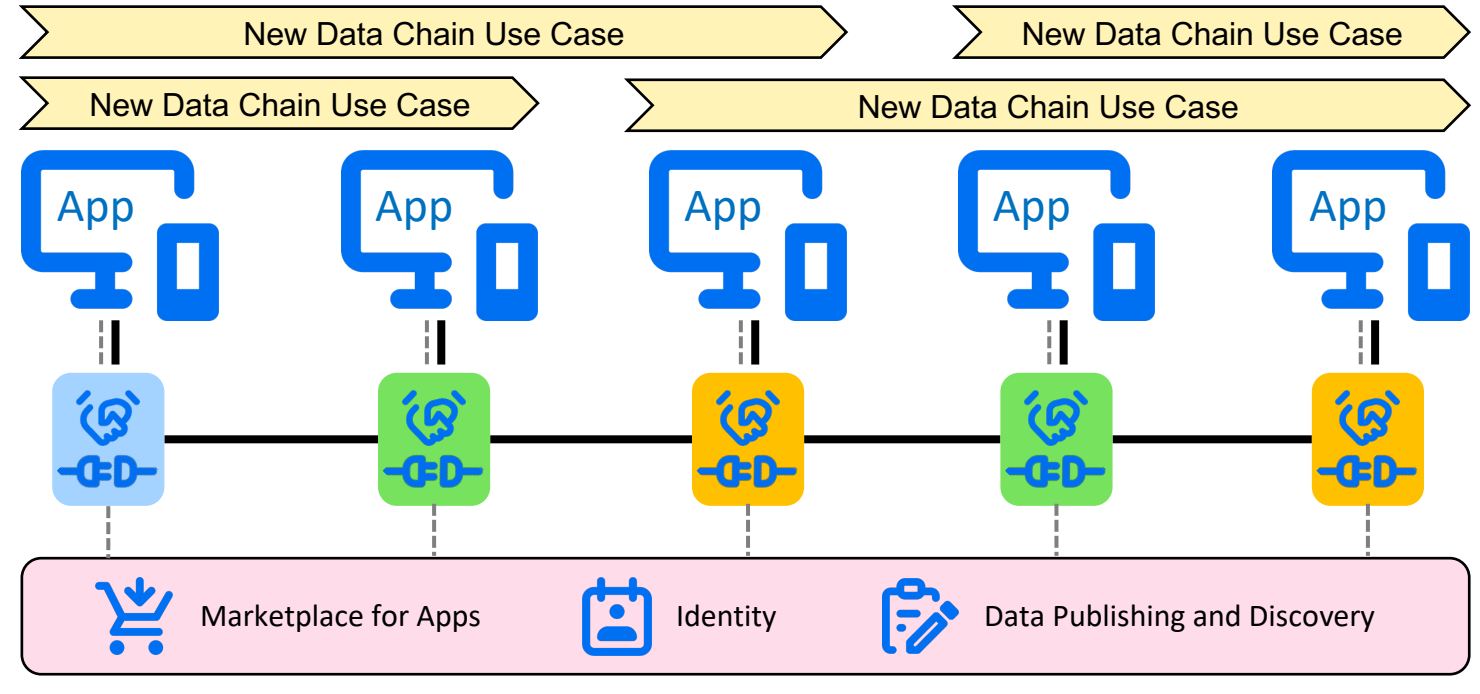
Dataspace Applications
(business and small apps)

Dataspace Integration
(technical, semantical, legal)

Data Exchange Infrastructure

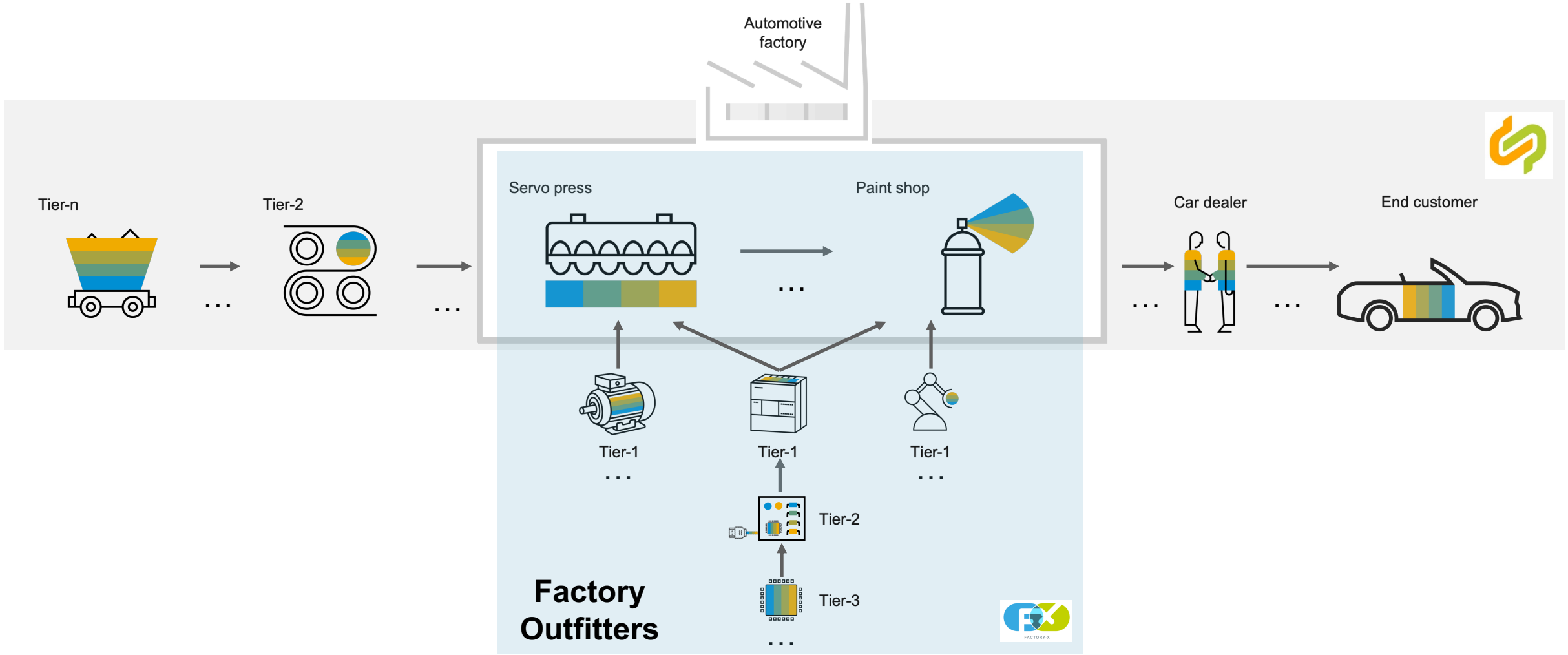
Central Services
(no persistency)





Cofinity-X
First Operating Company

Factory-X is adding the shop floor component



The 11 Use Cases of Factory-X

11 Use Cases für horizontalen- und vertikalen Datenaustausch

Integrated Toolchains and Collaborative Engineering

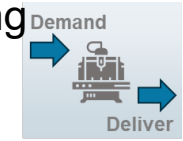
Information Update and Change Service

Collaborative Information Logistics

Condition Monitoring led Services

Modular Production

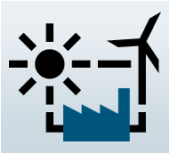
Manufacturing as a Service – On Demand Manufacturing



Autonomous Operation-as-a-Service

Traceability

Energy-Consumption and Load Management



Carbon Footprint Management

Circular Economy

Factory-X Kernel & Basis Services

Factory-X
Lighthouse project for Manufacturing-X

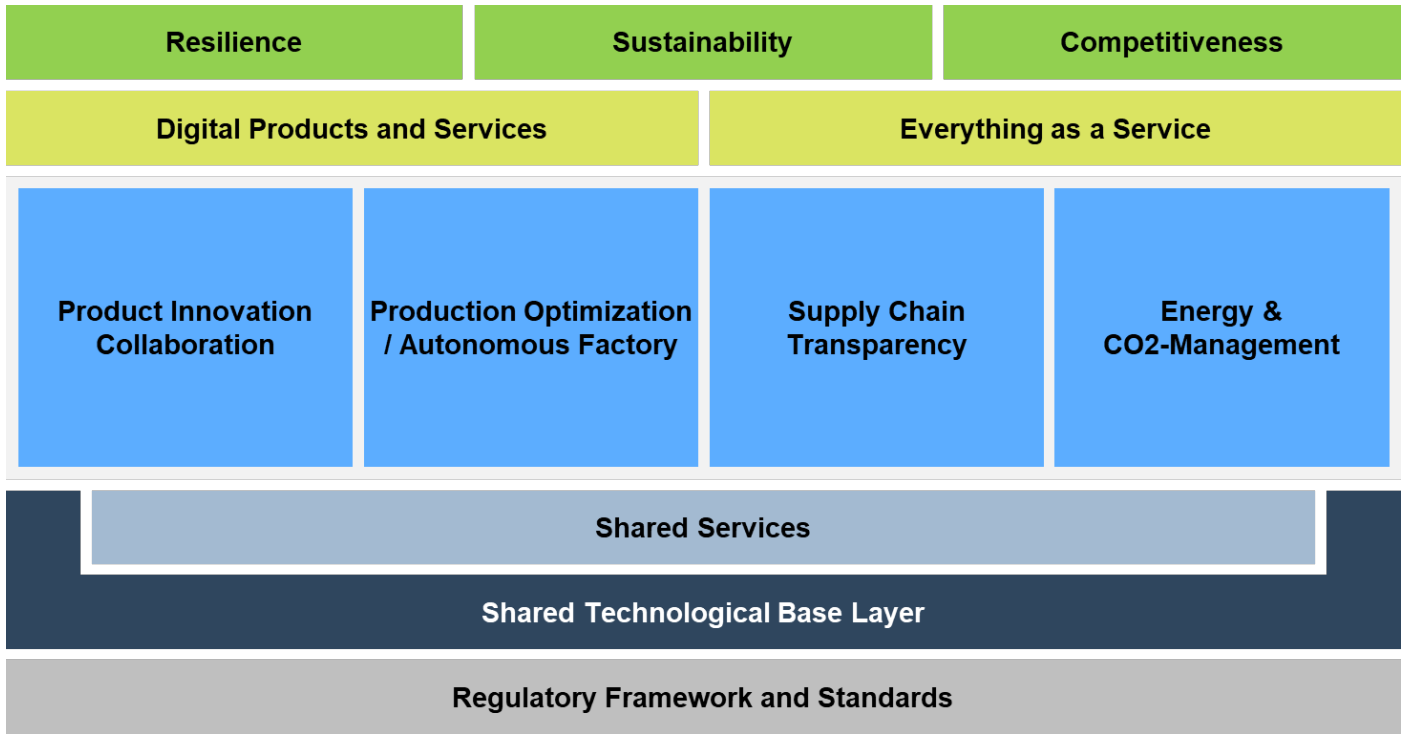
- Focus on machine builders & factory operators across 11 dedicated use cases
- Strong consortium consisting of 47 companies/associations/research institutions
- Consortium leadership by Siemens + SAP
- Manufacturing-X wide coordination and establishment of an international M-X network
- Project start on 1st of February 2024

Factory-X consortium:

- August Wilhelm Scheer Institut
- BASF
- Berger Holding
- Catena-X e.V.
- Codewerk
- DMG MORI
- Empolis
- EPLAN
- Estainium
- Eviden
- Festo
- Fraunhofer
- German Edge Cloud
- Hilscher
- ifm diagnostic
- IFW - Leibniz Universität Hannover
- igus
- inovex
- InstaWerk
- ISW - Universität Stuttgart
- Lenze
- LNI e.V.
- Matchory
- MT Analytics
- Open Industry 4.0 Alliance
- Pakic
- Phoenix Contact
- prenode
- proALPHA
- RIF Engineering & Consulting
- Ruhr-Universität Bochum
- **SAP**
- Scheer
- SCHUNK
- SDFS Smarte Demonstrations-fabrik Siegen
- SICK
- **Siemens**
- SmartFactory-KL e.V.
- soffico
- Software AG
- TRUMPF
- T-Systems
- TÜV SÜD Chemie Service
- Uhlmann Group
- VDMA e.V.
- WITTENSTEIN
- ZVEI e.V. (FE)

Factory-X Roadmap

Manufacturing-X will establish an open data ecosystem across industries, that is addressing exactly these issues



1. **Business Focus**
   Use cases are defined and agreed jointly by industry representatives, associations and leading companies
2. **End 2 end across companies**
   Use cases and scenarios do not only span inner company silos but also connect companies with in one and adjacent industries
3. **Data Sovereignty**
   An open and trusted data space allows access of relevant data while data sovereignty of the data owner is maintained
4. **Standards based**
   The inherent complexity of the technology used is managed through open source principles and industry standards and architectures like GAIA-X, AAS, OPC-UA and others
5. **Scaling from large OEMs to small and medium companies**
   Access to Manufacturing-X is as easy as connecting to any cloud based network

Source: Platform Industrie 4.0 Presentation „Manufacturing-X - Make Data Work. Competitive, Resilient & Sustainable“

Thank You

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