fischertechnik

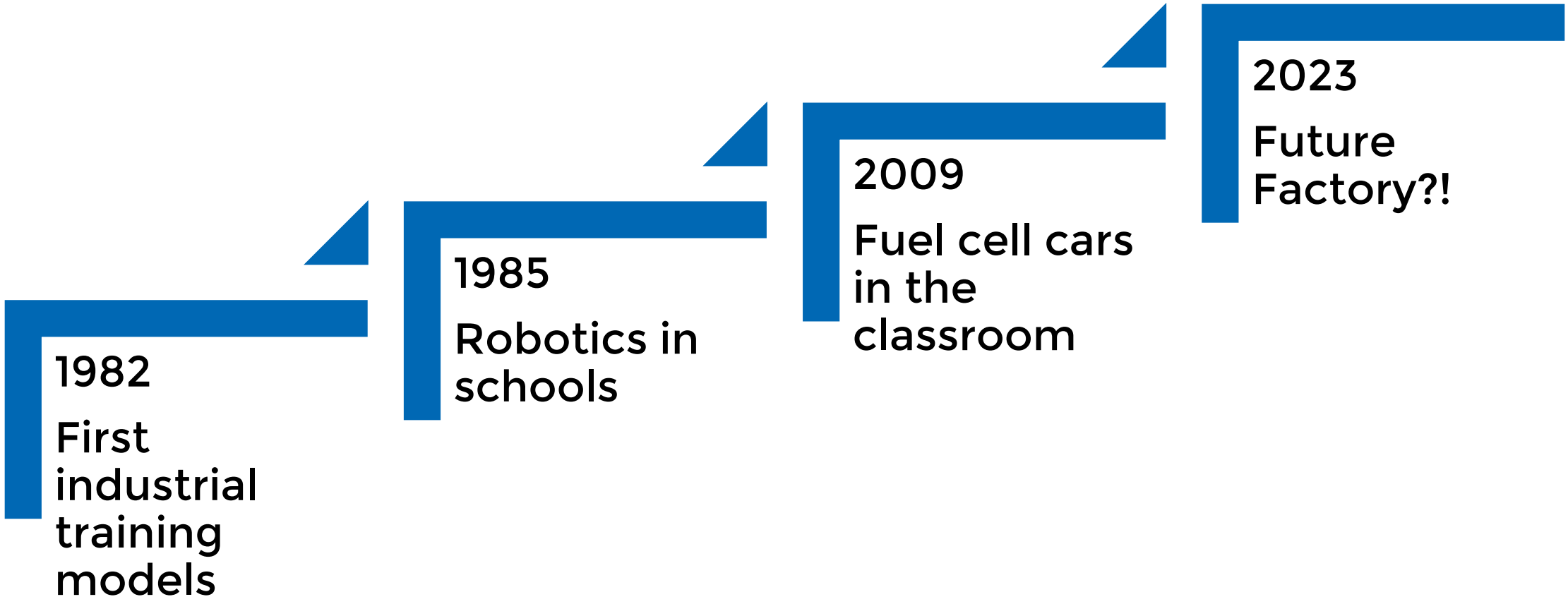
Unlocking the Future of Production

Agenda

Motivation & Background	• Fit for the future with fischertechnik • Current challenges for production and logistics
Agile Production Simulation	• The structure of the Agile Production Simulation • How das Agile Production Simulation help to understand the future of production?
Digital Learning Platform	• What is the Digital Learning Platform? • Scalable learning environment

Motivation & Background

Fit for the future with fischertechnik!



Current challenges of production and logistics

Product customization

Growing product range, increasing number of assemblies and components

High variance

Increase in customization options

Shorter product life cycles

Increase in overlapping product launches and production mix

Flexible manufacturing

Increase in logistics processes

Decreasing batch sizes and increasing complexity of processes

- Interconnected and synchronized production and logistics
- Invest in automation (AGV, CPS, etc.)
- Efficiency

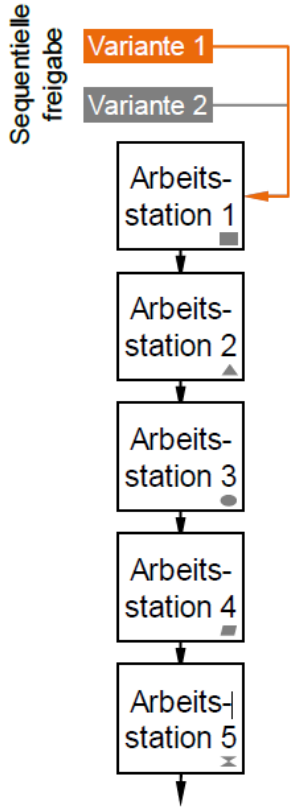
Example: BMW 3 series G21 LCI

- 18 different engine options
- 5 different equipment packages
- 79 different single equipment options

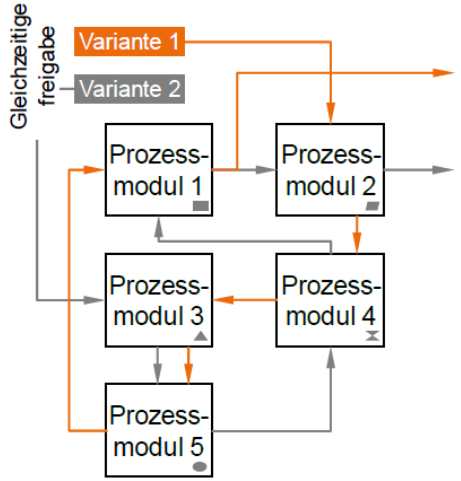
The transition from assembly line production to agile production

More flexibility in production and logistics

Assembly line production

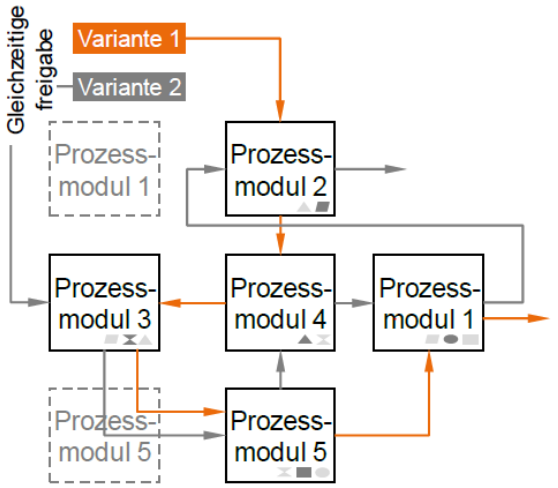


Matrix production



- No fixed cycle time
- No fixed sequence

Fluid production



- No fixed cycle time
- No fixed sequence
- "Any“ number of assembly scopes per station

Production of the future?

Industry 4.0
Digitalized interconnection of the production environment + automation

Agile Production

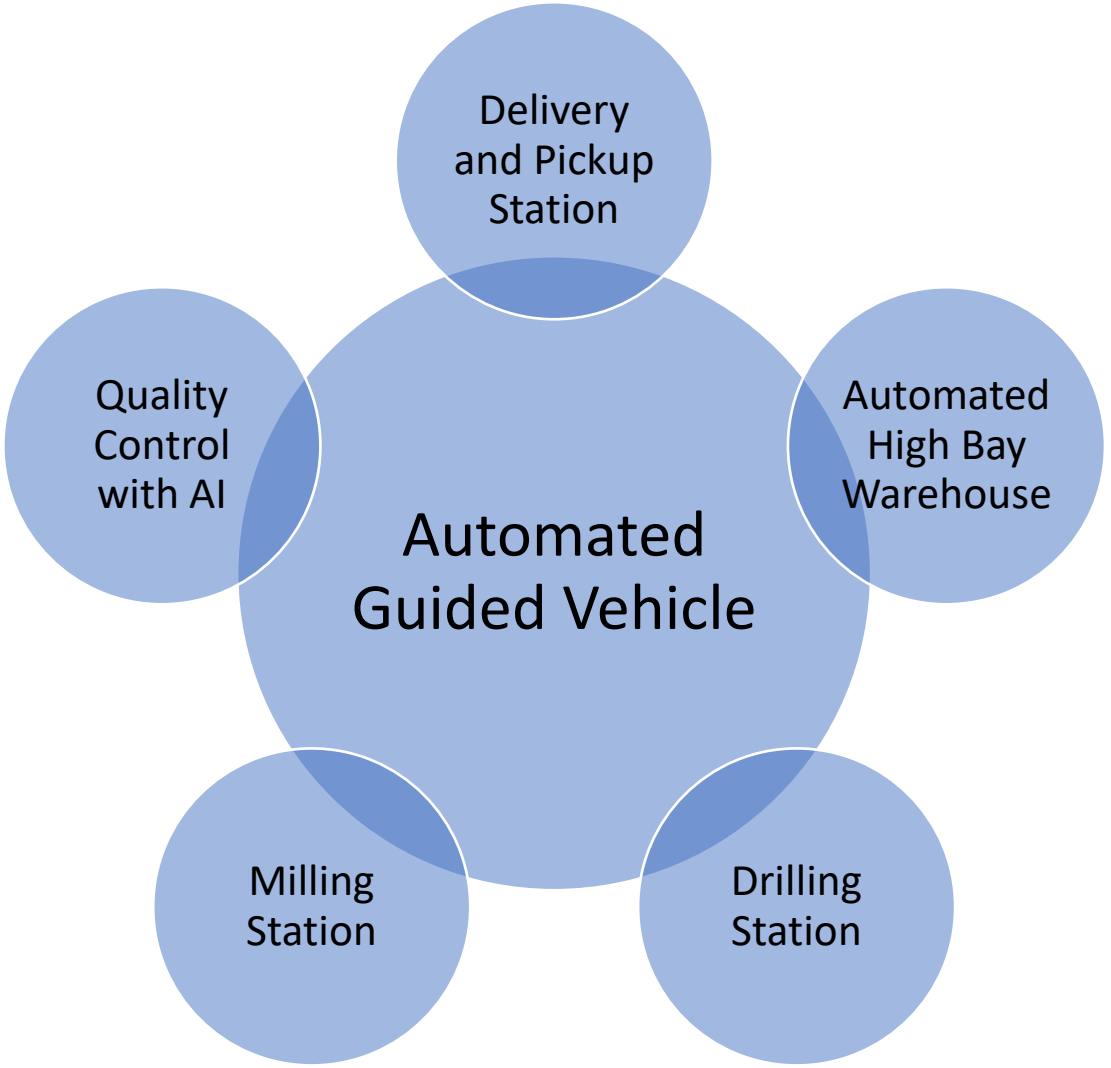
Flexibility

- Increased flexibility in production processes
- Customer-specific mass production
- Overcapacities are avoided
- Lead time reduction through mix of different derivatives

Market-orientated production

- Late necessity for production adaption
- Production adjustments with little effort involved
- Customer-centric approach

The Agile Production Simulation from fischertechnik



Flexible.

Modular.

Agile.

Connected.

- Modular, flexible production process
- Digital recognization via NFC tags
- Cloud-based dashboard
- Manufacturing-X
- Digital Learning Platform incl. digital twin
- Simulation

The Digital Learning Platform

- ✓ ... is a high-performance, immersive learning environment.
- ✓ ... is based on a digital twin of the Agile Production Simulation and serves as the didactic counterpart to the physical factory model.
- ✓ ... elucidates the control units, actuators, sensors, and functionality of the Agile Production Simulation.
- ✓ ... offers interactive learning modules on Agile Manufacturing, IoT, AI, and automation.
- ✓ ... enables the simulation and evaluation of highly complex process workflows in Agile Manufacturing.

- ✓ ... is included in the scope of delivery of the Agile Production Simulation and is not associated with any additional costs.
- ✓ ... is the result of a strong development partnership with the Karlsruhe Institute of Technology.

Set up of the Digital Learning Platform

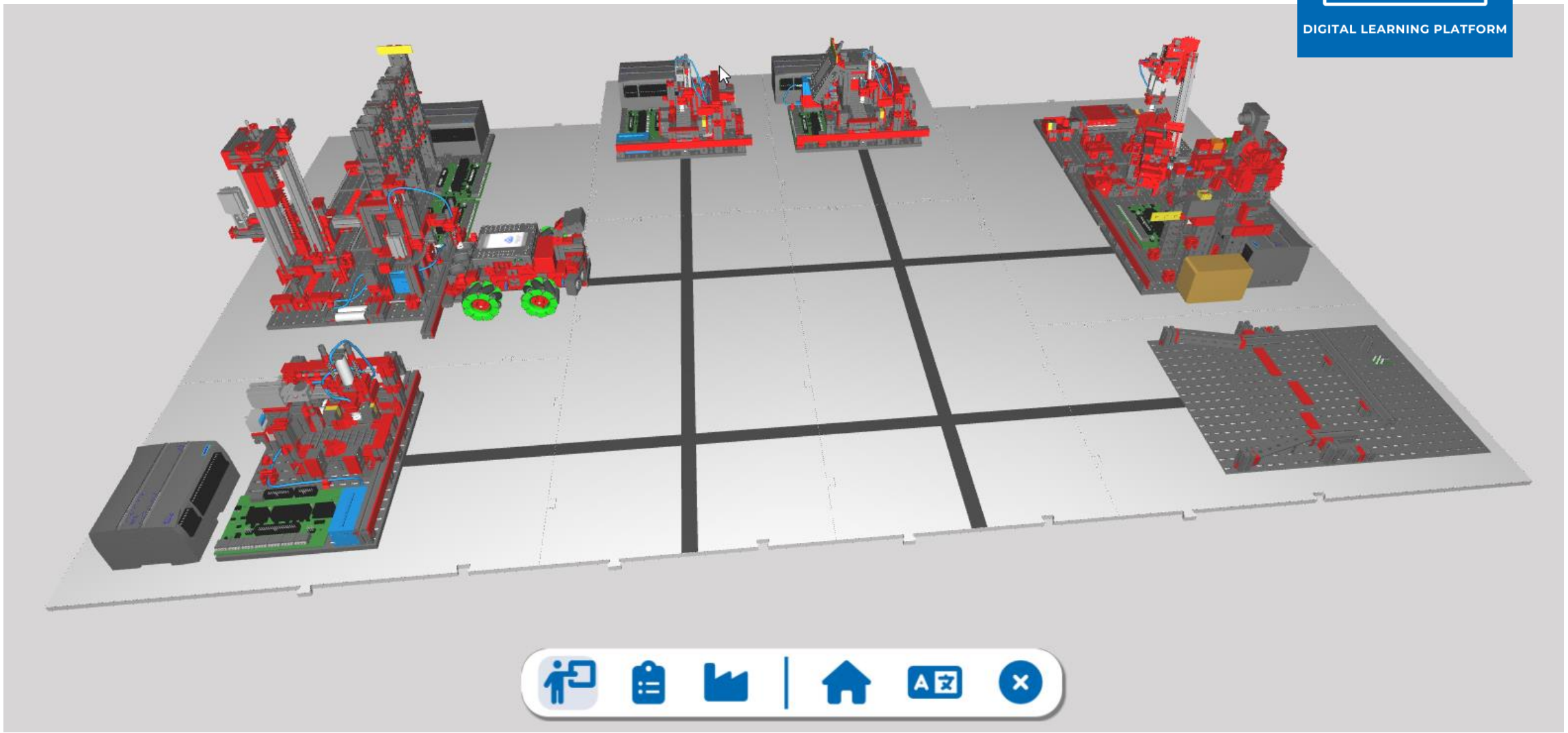
DLP
DIGITAL LEARNING PLATFORM

Introduction to Agile Production Simulation
- ✓ Interactive explanation of all process modules (DPS, HBW, AGV, QC, MS, DS)
- ✓ Interactive explanation of control-units, actuators, and sensors

Learning module 1 Agile Manufacturing	Learning module 2 IoT	Learning module 3 AI	Learning module 4 Automation

Each learning module includes:
- ✓ Theory section - Establishing fundamental understanding
- ✓ Practice section - Simulating & comprehending with physical setup and/or Digital Twin
- ✓ Transferability – How do you apply the knowledge in the real world?

Digital Twin



DLP
DIGITAL LEARNING PLATFORM

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Many thanks!

I am looking forward to your questions

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