

INDUSTRIE 4.0 IS OF INTEREST BECAUSE IT IS ...

1. ... almost in real-time

Virtual models, integrated in all business operations along the entire lifecycle of planning objects, improve the quality of decisions in real time, thereby minimising risk. The tools used in digital factories are cast in functional apps and with new payment models. IT systems will be organised in clouds, while open interfaces create a fast and cost-effective construction process for simulation models. In the digital factories, supply chain planning as well as production planning and management will be validated in real time. Thereafter, automation of all business and communications processes should follow.

4. ... effective

The efficiency strategy increases material productivity, optimises existing processes and reduces energy usage. In contrast, the effectiveness strategy for Industrie 4.0 relies on waste-free processes, closed material loops, the use of secondary raw materials and renewable energies. An effective technological development for production is made possible via information and communications technology. This makes the decisive difference in the competition to create added value.

2. ... autonomous and decentralised

Cyber-physical systems (e.g. machines, equipment) have an identity. They communicate with each other and their environment. They configure themselves automatically and store information. This represents an additional applied service orientation for the IT and management landscapes of companies. The hierarchical configuration in various levels will be broken up, as the new functions and applications are based on services from various departments and levels. The application of open standards is of course essential, as only then can all efficiency advantages provided by IT clouds be realised.

5. ... transparent

The success or failure of innovations processes is determined by the right level of openness. Open innovation concepts and the involvement of clients as supporting developers will be feasible for the first time on account of Web 2.0 concepts. The analysis of causes will increasingly be replaced by the discovery of interdependencies. The ideals of openness and collaboration, supported by the era of the Internet of Things, will herald significant changes for organisation, innovation and value creation.

3. ... sustainable

Transmitting solutions from nature to production design areas leads to sustainable and highly innovative approaches. We will economise in cycles. The notion of eco-effectiveness will supply the basis for a fundamental change in our supply chains. Reusing instead of consuming resources and downcycling will bring about completely new lifecycle concepts and new production technologies. Intelligent organisation structures are created according to the principles of swarm intelligence. The organisations resulting from this will once more have a human focus.