

Digital transformation in manufacturing—A quantum leap into smart production

What does Industry 4.0 mean for your company? Is digitalization fun? What were the first steps? These are some of the questions that we asked German SMEs. Learn how users from different sectors started to implement digitalization—or how they are planning to do so.

The fourth industrial revolution is just around the corner. After the steam engine, the assembly line and electronics, now we can look forward to the intelligent networking of all components that are relevant to production. Companies expect a quantum leap in productivity, flexibility and efficiency.

Experience digital transformation in manufacturing at automatica

Smart automation and robotics are essential aspects of Industry 4.0—you can experience the future of production in person at the leading trade fair automatica. automatica also features a separate platform for intelligent, digitally networked working environments: [IT2Industry](#). Exciting presentations and discussions with international experts await you in the [first-rate supporting program](#).

Secure tomorrow's competitive advantages today

The concept of Industry 4.0 originated in Germany. It gives the working world entirely new business models and prospects. The smart factory of the future will organize and constantly optimize its production processes on its own.

Those who get on board early can secure themselves some significant competitive advantages. Robotics and automation play a key role in making the smart factory a reality.

Optimize your production with big data

Comprehensive networking allows you to optimize all production steps. Thanks to big data, all information is available in real time. That way everyone who is involved can react to changes early. They can control processes throughout the entire company together. That cuts costs and conserves resources such as energy.

Give your workpieces knowledge

In the smart factory, a workpiece "knows" its desired final state, for example if it should be coated. It uses that knowledge to autonomously move through the production plant. It finds the process modules that can carry out the work steps

that it needs and that have available capacities. The workpiece basically sees to its own completion.

Rely on unlimited communication

Comprehensive networking facilitates coordination between workpieces and machines, between various production plants and machinery (machine to machine) and between employees and machines (human-robot collaboration). Most elements work with their own PI address. The system is adaptable and optimizes itself.

Manufacturing individual products

The vision of intelligent value chains that link all phases of a product's lifecycle takes things one step further. All product phases—from the idea to development, production, use, maintenance and recycling—are intertwined. Being networked in this manner will allow you to also produce individual products to customers' specifications more easily in the future.

Profit from human creativity

What will your human employees do in this scenario? Relieved of routine tasks, they can devote themselves to more creative endeavors. After all, human beings are unique when it comes to judgment, creativity and the ability to handle things with tact and sensitivity. These human strengths will also—and especially—be needed in the factory of the future.

What is the status of digital transformation in manufacturing now?

The first smart factories are already in operation. However, several steps are still needed to make this vision a reality. Above all, it is important to develop open, secure and trustworthy standards for big data—particularly when it comes to data ownership and use.
