UNIT 4

Graphic Design for Marketing in Industry 4.0

Principles of Industry 4.0
Handout
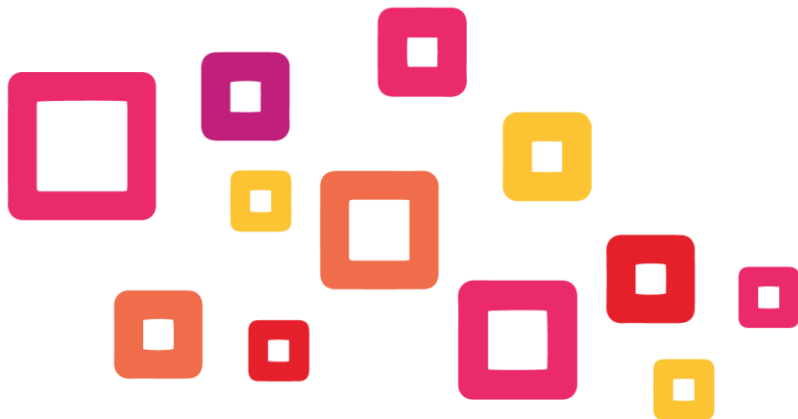
What is Industry 4.0?

Introduction

"Screws communicate with assembly robots, self-propelled fork-lift trucks store goods on high shelves, intelligent machines independently coordinate production processes. People, machines and products are directly interlinked: the fourth industrial revolution has begun.

Industry 4.0 refers to the intelligent networking of machines and processes in the industry with the help of information and communication technology. There are many ways for companies to use intelligent networking. The possibilities include, for example:

- Flexible production: Many companies involved in the manufacture of a product are involved in the development of a product step by step. Digitally networked, these steps can be better coordinated and the utilization of the machines better planned.

- Convertible factory: Production lines will be built in modules in the future. They can be quickly assembled for a task. Productivity and efficiency are improved, individualized products can be produced in small quantities at affordable prices:

- Customer-centric solutions: consumer and producer move closer together. The customers themselves can design products according to their wishes - for example, elements of sneakers themselves can be designed and adapted to the individual foot shape. At the same time, smart products that are already delivered and in use can send data to the producer. With the usage data, the producer can improve his products and offer the customer novel services.

- Optimized logistics: Algorithms calculate ideal delivery routes, machines independently report when they need new material - the smart networking enables an optimal flow of goods.

- Use of data: Data on the course of production and the condition of a product are combined and evaluated. Data analysis provides guidance on how to make a product more efficiently. More importantly, it's the foundation for completely new business models and services. For example, lift manufacturers can offer their customers "predictive maintenance": elevators are equipped with sensors that continuously send data about their condition. Wear can be detected and corrected before it leads to the failure of the elevator.

- Resource-efficient circular economy: products are considered data-driven over their entire life cycle. Even in the design, it is determined in which form the materials can be recycled.

Talking about Revolution: What's new about Industry 4.0?

Since the 1970s, information technology has moved into business. Desktop PCs, the use of office IT and the first computer-aided automation revolutionized the industry. For Industry 4.0, it is not the computer that is the central technology, but the Internet. Digitalization of production is gaining a new quality with global networking across company or national borders: the Internet of Things, machine-to-machine communication and manufacturing facilities that are becoming ever more intelligent are heralding a new era - the fourth industrial revolution, Industry 4.0.

On the way to Industry 4.0: What else needs to be done?

Implementing Industry 4.0 is a complex project: the more processes the economy digitizes and networks, the more interfaces are created between different actors. Uniform norms and standards for different industrial sectors, IT security and data protection play an equally central role as the legal framework, the changes in education and work, the development of new business models and the necessary research. All of these topics are dealt with by the experts of Platform Industrie 4.0 in six working groups. How the global, digital ecosystems of the future can be shaped is shown by the mission statement 2030 for Industry 4.0. It emphasizes sovereignty, interoperability and sustainability as central guidelines. "