



## **How Industry 4.0 is changing the world of work** Five questions for Christoph Kübel, member of the board of management and director of industrial relations at Robert Bosch GmbH

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### **How will Industry 4.0 change the world of work?**

Industry 4.0 will enable us to strengthen our manufacturing sites' competitiveness, and thus secure employment. We are opting for connected solutions in almost all of Bosch's 270 or so plants around the world. Connected manufacturing gets the best out of the differing capabilities of humans and machines. Robots work accurately without getting tired. Humans have the edge when it comes to knowledge and experience, and know how to find creative solutions for complex situations. Giving machines and equipment connectivity creates value, since the data and information we gather allow us to gain new knowledge. This enables us to increase productivity, conserve resources, increase security, and make work easier. Humans make all the difference where this is concerned. Thanks to their empathy, creativity, and problem-solving skills, human workers are and will remain indispensable. Their talents cannot be digitalized. However, job profiles and qualifications are changing. Interdisciplinary work and lifelong learning are becoming more important. The digital transformation is also a cultural transformation.

### **How are you preparing your manufacturing associates for the digital transformation?**

We are bringing our associates into the change processes at an early stage. We are using pilot projects to gather experience we can put to use later in actual practice. At our Feuerbach plant, for example, we have tested an app that lets associates swap shifts quickly and easily. This is a way of helping manufacturing associates benefit from a better work-life balance.

We are also offering our associates a range of qualification options, such as the new training program that will qualify them as Industry 4.0 specialists. After all, only those who understand the connected world will be able to shape it.

### **What is the significance of learning and further training?**

We are qualifying our associates for the working world of the future. This is essential if we want to successfully implement Industry 4.0. At the same time, learning will ensure that associates remain employable. That's why learning is strategically vital for successfully shaping the digital transformation. Over the past five years, we have invested over a billion euros in vocational training for our associates. At the moment, we offer around 19,000 training programs.

With our "Bosch Learning Company" initiative, we want to establish a learning culture in the company that facilitates informal, independent learning during day-to-day work. We are using comprehensive qualification programs to prepare our associates for areas such as electromobility, software, and the digital transformation.

We also offer further training programs specifically for manufacturing associates. In the Industry 4.0 specialist training course, we equip participants for the requirements of connected manufacturing. In addition to technological specialist knowledge, we teach them new ways of working, such as agile methods. We provide semi-skilled and unskilled associates with opportunities to qualify for more skilled tasks.

In order to encourage associates to take up further training, we support them with grants or leaves of absence. In that regard, we work closely with the works councils.

### **What kind of new job profiles will emerge?**

[Industry 4.0](#) requires new competencies among associates, in IT as well as in connected business models. We train our associates for these new requirements. Our apprentices learn how to program apps and configure robots. One new occupational profile designed specifically with connected manufacturing in mind is that of a production technologist to manage manufacturing processes. We have been training associates for this role since 2015. Data scientists evaluate large volumes of data and provide recommendations for action based on the information they obtain. There is also a huge need for developers. More than 25,000 software experts already work at Bosch today. Every second vacancy at Bosch is related to software or IT.

### **To what extent will associates benefit from new techniques and work methods?**

Industry 4.0 increases the plants' competitiveness, and thus safeguards employment. In the future, intelligent machines and software will take over routine tasks while humans will carry out more sophisticated activities. Robots, such as the [APAS](#) automatic production assistant, will make life easier for associates by taking over dangerous, strenuous, and monotonous tasks such as

manually sorting parts. Autonomous transport robots mean that associates won't have to walk long distances to obtain materials, and can get on with their work without delay. That saves time and frees up workers for other things. People can concentrate on what matters: managing processes, bringing their creativity to bear, and developing new things.

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*The Bosch Group is a leading global supplier of technology and services. It employs roughly 410,000 associates worldwide (as of December 31, 2018). According to preliminary figures, the company generated sales from operations of 77.9 billion euros in 2018. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT company, Bosch offers innovative solutions for smart homes, smart cities, connected mobility, and connected manufacturing. It uses its expertise in sensor technology, software, and services, as well as its own IoT cloud, to offer its customers connected, cross-domain solutions from a single source. The Bosch Group's strategic objective is to deliver innovations for a connected life. Bosch improves quality of life worldwide with products and services that are innovative and spark enthusiasm. In short, Bosch creates technology that is "Invented for life." The Bosch Group comprises Robert Bosch GmbH and its roughly 440 subsidiary and regional companies in 60 countries. Including sales and service partners, Bosch's global manufacturing, engineering, and sales network covers nearly every country in the world. The basis for the company's future growth is its innovative strength. At 125 locations across the globe, Bosch employs some 69,500 associates in research and development.*

*The company was set up in Stuttgart in 1886 by Robert Bosch (1861–1942) as "Workshop for Precision Mechanics and Electrical Engineering." The special ownership structure of Robert Bosch GmbH guarantees the entrepreneurial freedom of the Bosch Group, making it possible for the company to plan over the long term and to undertake significant upfront investments in the safeguarding of its future. Ninety-two percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The majority of voting rights are held by Robert Bosch Industrietreuhand KG, an industrial trust. The entrepreneurial ownership functions are carried out by the trust. The remaining shares are held by the Bosch family and by Robert Bosch GmbH.*

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