Press release
Bosch Compact

Did you know that...?
Facts around ten years of Industry 4.0 at Bosch

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... the oldest machine ever to be given connectivity is Robert Bosch's 134-year-old lathe?

- Pedal-powered, made of cast iron and weighing 300 kilograms, the old lathe is a jewel of Industry 1.0.
- As late as 1887, Robert Bosch himself was still using his lathe. Among other things, it was used to produce parts for the magneto ignition device, the product with which the company achieved its breakthrough at the end of the 19th century.
- In 2016, Bosch catapulted this historic workbench from the museum into the Industry 4.0 era in one fell swoop – thanks to technological support from the new Bosch IoT gateway. The connected system combines sensors, software, and an IoT-capable control system, allowing condition monitoring of the lathe.
- The workbench 4.0 shows that the IoT gateway allows even the oldest machines to be connected quickly and easily. This means that Bosch can also make the benefits of connected manufacturing available to factories that use older machinery.

... Bosch has a "sewing machine man"?

- His name is Claus Lau and he is responsible for connected factory solutions at two Bosch locations in Germany. While searching for an object he could use to explain the basic principles of Industry 4.0, he came across his wife's old treadle sewing machine. He decided to use this heirloom from the 1930s to demonstrate the journey of analog devices into the digital future.
- For Claus Lau and his team, this journey lasted two weeks. They first familiarized themselves with the sewing machine before equipping it with sensors. This made it possible to display essential information on one screen: is the fabric right for the needle size? How long will the belt last? Is the needle still usable or already worn out? The sewing machine 4.0 was born. And Claus Lau became known as the "Bosch sewing machine man."

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- He and his team frequently go on tour to show how analog machines and production facilities can be retrofitted for Industry 4.0. Such retrofit solutions are an important element in bringing Industry 4.0 into the mainstream.

… Bosch developed the world's first robot to be cleared for working in close proximity with humans?

- Until 2014, robots were not allowed to operate in factories without a protective guard, partition, or distance control.
- Then came APAS – the automatic production assistant. Its name describes it perfectly, and as the world's first robot certified for work side by side with human operatives, without the need for additional protective housing, APAS came to life at Bosch in 2014.
- This was not only a big step in the development of human-robot collaboration (HRC), but also a crucial one for Industry 4.0. Bosch developed APAS so that it can autonomously take over the feeding of machines, palletizing, and assembly in the shortest possible time. Such an innovation is extremely valuable, especially for smaller production batches.

… you can travel with Bosch?

- At least, you can on the "Industry 4.0 Live" learning journey, offered under the auspices of Fraunhofer IPA and Bosch in Germany.
- This journey through the digital age highlights the best Industry 4.0 applications and aims to build a professional network for their implementation.
- In addition to stops at best-practice companies and workshops, the trip also provides managers and workers with new ideas and inspiration relating to Industry 4.0.
- Bosch, Fraunhofer IPA, and Macils Management Centrum launched the "Industry 4.0 live" learning journey in 2016.

… Bosch is also active in robot linguistics?

- Linguistics for robots? Why not? After all, the fourth industrial revolution is about machines being able to connect and communicate with each other.
- With its plan to turn the factory of the future into reality, Bosch has, in a sense, also devoted itself to linguistics. In 2016, the company unveiled a new, open and freely available machine language for Industry 4.0 that it developed in house: the production performance management (PPM) protocol 38.

- And to ensure that man and machine also understand each other intuitively, Bosch has developed the “multi-production line.” Via a Bluetooth tag worn by all associates, the entire assembly line with its multiple workstations knows who is standing in front of it, what that person’s skill level is, and what their native language is. It then automatically adapts the workstation to the individual’s requirements.

Press photos: #499131, #dc44d8ac5ce8, #1405070, #bc2a87c5bbe9, #454641

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The Bosch Group is a leading global supplier of technology and services. It employs roughly 394,500 associates worldwide (as of December 31, 2020). According to preliminary figures, the company generated sales of 71.6 billion euros in 2020. Its operations are divided into four business sectors: Mobility Solutions, Industrial Technology, Consumer Goods, and Energy and Building Technology. As a leading IoT provider, Bosch offers innovative solutions for smart homes, Industry 4.0, and connected mobility. Bosch is pursuing a vision of mobility that is sustainable, safe, and exciting. 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 facilitate connected living with products and solutions that either contain artificial intelligence (AI) or have been developed or manufactured with its help. 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 126 locations across the globe, Bosch employs some 73,000 associates in research and development, as well as roughly 30,000 software engineers.

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-four percent of the share capital of Robert Bosch GmbH is held by Robert Bosch Stiftung GmbH, a charitable foundation. The remaining shares are held by the Bosch family, by a corporation owned by the family, and by Robert Bosch GmbH. 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.

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