



Integrated industry

Bosch receives VDA Logistics Award for the virtual reflection of supply chains

Standardized data sharing can optimize entire value-added chains

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- ▶ Information in real time thanks to fully virtual supply chain
- ▶ Bosch board member Asenkerschbaumer: networks are now more efficient, flexible, and eco-friendly
- ▶ VDA president Wissmann: intelligent production a major competitive advantage for Germany
- ▶ Expert judges praise the solution's consistency

Frankfurt. Bosch has received the Association of German Car Manufacturers' (VDA) Logistics Award. The global supplier of technology and services has been awarded the prize for completely virtualizing physical flows of goods, which can now be tracked in real time with intelligent software systems. The analysis of the data obtained helps manage and further improve processes. Successful data sharing across the company has been one of the project's major achievements. Standardized data can now be exchanged and shared between companies seamlessly and in real time. This makes it possible to optimize production and supply networks in a comprehensive manner. "Suppliers and customers can open up their processes for each other and integrate them with each other. This is making the vision of consistent data transmission in industrial supply chains reality. The result is efficient, flexible, and eco-friendly production and logistics networks," said Dr. Stefan Asenkerschbaumer, the deputy chairman of the Bosch board of management, at the awards ceremony in Frankfurt. For instance, over the course of a pilot project at Bosch's Homburg site in Germany, the efficiency of logistics processes was improved by some 10 percent.

Intelligent production strengthens Germany as an industrial location

Matthias Wissmann, the VDA president, emphasized the significance of the awarded innovation: “Intelligent production and logistics processes strengthen Germany’s competitiveness as an industrial location. With their product and process innovations, German suppliers are playing a major role in ensuring that the German automotive industry is always one step ahead of the competition. With the help of the award, outstanding, innovative logistics concepts can serve as inspiration for all companies that are looking for creative and intelligent logistics solutions.” The standardized data-sharing concept that Bosch has now applied across the board is based on the findings of the RAN research project (**r**adio frequency identification (RFID)-based **a**utomotive **n**etwork). The project was set up with the aim of developing new management concepts for automotive industry production networks.

Using virtual reality to improve the real world

“Changes in industrial production, which in Germany are generally referred to as Industry 4.0, have long been underway. These changes are now being put into practice and are thus becoming visible,” said Asenkerschbaumer, the member of the Bosch board of management responsible for purchasing and logistics. On the path to integrated industry, the company is building on the Bosch Production System, which has been successfully applied for years. In the past, the approach focused on optimizing physical production and logistics processes – in other words, on the things that take place in the real world. But new IT technologies have now made it possible to virtualize these processes and flows of goods. This is done via automated data collection, which gathers data on the status of products or transport containers throughout the production and logistics process. Technical aids such as RFID technologies can be used for this purpose. In the past, the physical flow of goods was entered manually into an IT system, a time-consuming exercise that reflected past status rather than present status. Error rates were high and data was never up to date. The flow of information was not in sync with the flow of goods.

From data to knowledge, from knowledge to benefit

The large quantity of current and thus high-quality data can be analyzed with the help of software. Intelligent algorithms are applied to illustrate the relationships and interactions between parts of the process. This information can be applied to help further improve the entire system. “The production process optimizes itself,” says Andreas Müller, a Bosch project

manager, pointing out the benefits of the modern approach. “New data provides new insights, and these make it possible to further improve the system. In turn, the improved system generates new data, which helps build new, beneficial knowledge. It’s a virtuous circle.”

Cooperating to improve the value-added chain

By standardizing the flow of data between companies, additional partners can be involved in efforts to optimize processes, including customers and suppliers. “Networked and thus intelligent production and logistics can only become reality once solutions are consistently applied between companies. By implementing this approach with its partners, Bosch has successfully realized the vision of supply chain management,” said Professor Wolfgang Stölzle of the University of St. Gallen, in explaining the judges’ decision. Over the course of the pilot project, Bosch is working an engine manufacturer and a supplier of reusable containers.

Outlook: process, sensor technology, and software expertise

Bosch is currently implementing the new approach at its own manufacturing sites around the world as well as with additional partners. The company is also working to further develop its technical solutions. Today, RFID tags are common information and data carriers. In the future, web-enabled sensors will also transmit status information about objects. The quantity and quality of data will continue to increase. Intelligent software solutions and high-performance algorithms will evaluate data, and this will open up new potential for improvement. As a leading global manufacturer of sensors, Bosch can rely on its own products in this area. Bosch Software Innovations, a Bosch subsidiary, offers customized software and system solutions. “By combining our expertise in the areas of processes, sensor technology, and software, we can further enhance our own and our partners’ value added. On the path toward integrated industry, we see ourselves as a leading user and a leading supplier of software and hardware,” Asenkerschbaumer said. Especially at the interfaces between value-added networks, there is potential to cut costs and create new services.

About the VDA Logistics Award

The VDA Logistics Award was presented for the seventh time this year. It was the second time that Bosch received the honor. An innovative Bosch logistics concept was also singled out by an expert panel in 2009. The award recognizes the efforts of companies whose logistics solutions serve as role models for other companies in the automotive industry. The judges’ evaluation is based on the cost-effectiveness of the solutions in question.

With the prize, the VDA aims to highlight projects that can increase the competitiveness of the German automotive industry. The judges panel is made up of representatives from academia, an OEM, a supplier, specialist media, a logistics association, and the VDA.

Press photos: 1-PE-16629, 1-RB-19762, 1-RB-19788, 1-RB-19791, 1-RB-19795, 1-RB-19796

Video: [Virtual tracking of supply chains](#)

Footage material: [Industry 4.0 - manufacturing and logistics](#)

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The Bosch Group is a leading global supplier of technology and services. According to preliminary figures, its roughly 281,000 associates generated sales of 46.4 billion euros in 2013 (Note: due to a change in the legal rules governing consolidation, the 2013 figures can only be compared to a limited extent with the 2012 figures). Its operations are divided into four business sectors: Automotive Technology, Industrial Technology, Consumer Goods, and Energy and Building Technology. The Bosch Group comprises Robert Bosch GmbH and its more than 360 subsidiaries and regional companies in some 50 countries. If its sales and service partners are included, then Bosch is represented in roughly 150 countries. This worldwide development, manufacturing, and sales network is the foundation for further growth. In 2013, Bosch applied for some 5,000 patents worldwide. The Bosch Group's products and services are designed to fascinate, and to improve the quality of life by providing solutions which are both innovative and beneficial. In this way, the company offers technology worldwide that is "Invented for life."

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 up-front 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.

Additional information is available online at www.bosch.com, www.bosch-presse.de, <http://twitter.com/BoschPresse>