

## Connected learning at its best **Training at Bosch in Germany**

August 2014

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Bosch has a long tradition of providing vocational training. Since Robert Bosch set up the company's first apprenticeship department on April 1, 1913, Bosch has provided over 100,000 young people with the training they needed for their future careers. The latest in study and teaching methods are used to prepare young people for the international, connected working world they will soon enter. Bosch apprentices regularly receive high-profile recognition for what their training and qualifications enable them to achieve. Bosch apprentice Joshua Rikker and his team partner from Stihl, Patrick Ziesel, triumphed in the world of work category in Germany's 2013 "Jugend forscht" competition. That same year, Henrique da Silva Santana, an apprentice at Bosch's Campinas location in Brazil, won a gold medal in the manufacturing technology category at the WorldSkills competition in Leipzig. He was just one of over 1,000 apprentices who competed against each other there in a range of occupational disciplines. Bosch offers around 1,400 apprenticeship and study places at its locations in Germany every year. The supplier of technology and services is not only committed to assuring its own commercial and technical young talent, but in Germany the company actually trains more people than it will recruit.

### **Technical and commercial training: experience-led learning**

In Germany, Bosch offers occupational training for more than 30 different skilled careers including IT specialist, microtechnology engineer, and mechatronics engineer. Hallmarks of Bosch training are its practical course content, the way it cultivates problem-solving and social skills, and the exchange of apprentices with other locations in Germany and abroad. In order to enable apprentices to learn independently, instructors take on the role of learning supervisor and coach.

Since the course content at the vocational school is closely connected with practical vocational training, apprentices have the chance to prepare themselves step by step for their chosen careers. They benefit not only

from the latest teaching methods and equipment, but also from the opportunity to collaboratively tackle real project assignments within the framework of Bosch's in-house "junior companies." Meanwhile, apprentices' social skills are strengthened through participation in social projects and cooperation with schools as part of the German educational initiative "Wissensfabrik". Once they have completed their training, many join Bosch in a skilled or administrative capacity, while others prepare for an engineering degree by completing a technical diploma parallel to their training.

### **Study program: theory and practice for a connected world**

Bosch offers young people who have achieved entrance qualifications for university or technical college a choice of three study models with a practical bias. Dual-study courses alternate between theory blocks at a dual university (formerly known as universities of cooperative education in some German states) and practical blocks that are completed at Bosch. A total of 15 different dual courses of study – most of them with a technology focus – are available to students at over 30 locations. Students who are pursuing a cooperative course of study simultaneously attain a professional qualification for a trade recognized by the German Chamber of Commerce and Industry. Bosch makes this type of training available at eight locations, which between them offer ten different study models. Students pursuing a course of study featuring advanced practical experience must complete various internships and produce a bachelor thesis at Bosch. Some 300 of the 1,550 apprenticeships Bosch offers each year involve one of these study models.

### **Dual study program: connected learning**

Bosch was among the founders of the cooperative university model that, in the German state of Baden-Württemberg, went on to evolve into the dual university. A key feature of this dual model is how it alternates between three-month theory blocks at the university and practical blocks at Bosch, where students can put what they have learned into practice and expand on it. From the outset, Bosch has benefitted from this connected training and study model, which emerged in 1972 after Bosch, Daimler-Benz, and SEL worked closely together with the Württemberg Academy of Administration and Economics and the Stuttgart region's chamber of commerce to develop what became known as the Stuttgart model. The aim was to set up an intensive academic course of study with a strong practical bias. Trials yielded positive results that led to the establishment of state universities of cooperative education in 1974.

### **Junior company: apprentices at the top**

What sets graduates of Bosch training courses apart are their highly developed problem-solving skills, which they develop through on-the-job learning – playing an active role in, say, preparing workpieces for production or development. The “junior company” – an apprentice-led company within a given department – promotes this systematically, with apprentices assuming responsibility for all technical and commercial tasks. To do this they have to take responsibility for each link in the value chain – from order intake and production planning to materials purchasing, production, and sales – and are supported by their instructors. When new colleagues join the junior company, experienced apprentices show them the ropes. This is how many of the workpieces that end up being used in production are prepared. Apprentices are responsible for adherence to technical specifications, delivery schedules, and internal cost allocation. Running a junior company is also a chance to demonstrate leadership skills as well as the ability to schedule personnel and be a line manager.

### **International apprentice exchange: learning from other cultures**

A key component in this training is developing the intercultural skills that are essential in the global working world. For over 50 years, Bosch in Germany has been running an international apprentice exchange program. In each year’s group of apprentices, 20 percent are offered the chance to see how work is done in other countries and to gain experience of foreign cultures. The goal is to promote apprentices’ independent behavior, self-reliance, and ability to work as part of team. Another option is for apprentices to spend some time accruing practical experience at another Bosch location in Germany – a training concept that recently secured the IHK-Bildungspreis 2013 award for Bosch’s Waiblingen location. Students, too, receive regular opportunities to spend some time abroad as part of their studies.

### **Sharpening skills: Jugend forscht, Knowledge Factory, and social week**

Bosch apprentices soon acquire problem-solving and social skills, which are key features of Bosch occupational training. At the heart of this development is participation in the Jugend forscht competition, to which apprentices can submit their own projects. Participants receive support from Bosch in the form of materials and advice from their instructors. Bosch hosts the Baden-Württemberg regional rounds of Jugend forscht and integrates it into its training program, with organization of each round forming a project task for a team of Bosch apprentices. Bosch is also a regular host for the Jugend forscht regional heats in Hesse and Lower Saxony. In collaboration with the German educational initiative

“Wissensfabrik”, many Bosch training locations have established partnerships with local kindergartens, elementary schools, and high schools, supplying KiTec (children discover technology) kits or crafting specific projects to encourage children’s understanding of and interest in technology. Sharing their expertise with the children and supervising them helps apprentices develop essential social skills. What’s more, Bosch offers all apprentices the chance to complete a social week during their training. Each individual can choose a social or charitable assignment and is given a week off work to complete it. There is no end to the possibilities: they can build a climbing wall at a school, work as a carer in a retirement home, or clean up children’s playgrounds.

### **Invented for life – for boys and girls**

Demand for apprentices will remain high in Germany in the coming years. Bosch is keen to encourage training applications especially from both sexes, since having mixed teams is a catalyst for creativity and ideas. Although in Germany girls make up between 5 and 6 percent (on average) of those pursuing training in the technical careers relevant to Bosch, the company is attracting more and more young women. Currently, they make up around 23 percent of each year’s total apprentices and 16 percent of technical apprentices at Bosch. To spark girls’ interest in technical careers early on and to encourage young talent, many Bosch training locations participate in initiatives such as Girls’ Day and Knowledge Factory, or offer Technology Experience Days, open days, or internships for high-school students.

### **Training abroad: the exemplary Bosch model**

Dual occupational training, which sees apprentices alternating between phases in the classroom and at work, is also in demand abroad. At present, Bosch locations in many countries – among them Brazil, China, and India – offer training programs based on this tried-and-tested concept from Germany. Bosch is currently training some 7,400 young people, 5,000 of them in Germany. All in all, Bosch provides training opportunities in over 30 countries worldwide. The need for qualified specialists is especially high in Asia. In India, Bosch currently has some 170 apprentices, with 60 young people starting out on three- or four-year training programs there each year. Meanwhile in Vietnam, Bosch is expanding its occupational training center. A collaborative teaching effort has also been set up in Thailand, and Bosch has already awarded mechatronics qualifications to young people in the country’s first such dual-system training program. In Russia, too, Bosch has been offering dual training that follows the German model since January 2014 – with an initial intake of 12 apprentices.

**Internet:**

Bosch as an employer in Germany: <http://bit.ly/1xT2fWN>

Career training at Bosch: <http://bit.ly/1krpHWd> (in German)

Technical-commercial training at Bosch: <http://bit.ly/1lpEUYe> (in German)

Studying at Bosch: <http://bit.ly/NDwldU> (in German)

Student internships at Bosch: <http://bit.ly/1pEX34L> (in German)

Available training places at Bosch Germany: <http://bit.ly/NN1k7t>  
(in German)

Jugend forscht at Bosch: <http://bit.ly/NN0Uhd> (in German)

Wissensfabrik: KiTec – Children discovering technology:  
<http://bit.ly/1dTyAQO> (in German)

Girls' Day – Future prospects for girls: <http://bit.ly/1axQOVs>

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