

**BOSCH**

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Bosch company history

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1. 1886 – 1900: The Workshop for Precision Mechanics and Electrical Engineering

On November 15, 1886, Robert Bosch opened the “Workshop for Precision Mechanics and Electrical Engineering” in Stuttgart. At the outset, Bosch worked with two associates to construct and install all kinds of electrical equipment, such as telephone systems and electric bells. However, the company’s startup capital of 10,000 German marks was soon used up and they had to rely on loans. Robert Bosch invested most of the company's small earnings in modern machines. He later described his first years as a self-employed businessman as a “shambles”. The construction of the electric power station in Stuttgart in 1895 was one factor that helped the young company on the road to economic recovery by creating new jobs for its installation business. The second factor was the magneto ignition device, which had already become a linchpin in the company’s economic success.

Bosch and the magneto ignition device

In 1887, Robert Bosch had been approached by a customer and asked to produce a magneto ignition device based on a model made by the engine



manufacturer Deutz in Cologne. Rather than just copy the original device, Bosch improved on it – displaying a mindset that would later be reflected in his guiding principle of continuous improvement. The magneto ignition device generated an electric spark that ignited the air-fuel mixture in the cylinder of a stationary internal-combustion engine. In 1897, Bosch was the first to adapt a magneto ignition device to a vehicle engine. In doing so, he solved one of the greatest technical problems faced by the nascent automotive industry.

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2. 1901 – 1923: Becoming a global automotive supplier

In the early years, Robert Bosch ran his business from several different locations, all of them leased, in the west of Stuttgart. He started construction of a company-owned factory building in Stuttgart in 1900. On April 1, 1901, 45 associates moved into the new “Elektrotechnische Fabrik Robert Bosch” (Robert Bosch Electrical Engineering Factory). That same day, his former apprentice Gottlob Honold also rejoined the company. In less than a year, Honold went on to develop a high-voltage magnetic ignition system with spark plugs. When he unveiled the first prototype in December 1901, Robert Bosch was very impressed, declaring: “You have hit the bull’s eye!” This sentence marked the start of the history of innovations at Bosch.

Worldwide growth

The further development of the magneto ignition device opened up a whole new customer base for Bosch in the form of automakers and drivers across the globe. Many of these now wanted to switch from their old failure-prone technology to the new Bosch electrical ignition system. To provide customers around the world with the necessary support, Bosch began to establish sales offices outside Germany – first in the U.K. in 1898, followed by France a year later, and then Austria-Hungary. Bosch was soon represented in nearly all European countries. The first steps on other continents were taken in 1906 in the U.S. and South Africa, followed by Australia in 1907, Argentina in 1908, and China in 1909. But it was not just the sales structures that were being organized on an international scale – production was going global, too, with Bosch opening a second production location in Paris as early as 1905. Production kicked off in the U.S. in 1912 at a new factory in Springfield, Massachusetts.

Bosch automotive lighting

Bosch launched another automotive breakthrough in 1913 – the Bosch automotive lighting system. Comprising a generator, battery, voltage regulator, and headlights, this was the first complete system from Bosch and it created the basis for today's automotive electrical systems.

The electrical installation business increasingly played second fiddle to automotive technology, before it was eventually discontinued and the company focused on its goal of becoming an international automotive supplier. Shortly before the outbreak of the first world war in 1913, Bosch generated more than 88 percent of its sales outside Germany.



The first world war

When the first world war broke out in 1914, Bosch was forced to convert its entire production facilities to meet the needs of the military. However, as Robert Bosch did not wish to profit from the war and the suffering it brought, he donated the profit generated from armaments contracts – some 20 million German marks – to charitable causes. Despite the extremely difficult conditions, the company recovered from the consequences of the war, particularly the expropriation of large parts of its interests outside Germany, surprisingly quickly. By around 1925, the network of international sales offices was already larger than it had been in 1914.

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3. 1924 – 1945: From automotive supplier to diversified group

The workforce and production figures continued to rise steadily until the fall of 1925, when sales in the European automotive market suddenly collapsed. The massive slump hit Bosch hard, with the number of associates falling from 13,000 to 8,000 in just a few months. And it was not just workers in the workshops that lost their jobs during the crisis – the rationalization measures also affected the company's senior executives. The company's board of management was stripped back from eleven members to just three members and three deputies. As part of the reshuffle, Robert Bosch also handed over the management of the company to a small committee: Hans Walz was given responsibility for commercial affairs, Hermann Fellmeth for engineering, and Karl Martell Wild was put in charge of sales and human resources.

New areas of business

The crisis was quickly brought under control – thanks in part to the rationalization measures introduced just before the crisis broke, in particular the continued changeover to assembly-line production. One lesson learned from the crisis was the risk of focusing on just one sector. As a result, the new management started to look around for other promising areas of business. Bosch first branched out into the power tools sector with the launch of a hair trimmer in 1928, before moving into the household appliances sector by bringing out the first Bosch refrigerator in 1933. In 1932, Bosch acquired the heating systems business of Junkers and, the same year, Blaupunkt marketed the first series-produced car radio in Europe. Bosch also expanded its automotive technology portfolio during the 1920s, adding products such as bicycle lamps, batteries, the Bosch horn, indicators, and windshield wipers. A major breakthrough came in 1927 with the launch of the diesel injection pump, first only for trucks and then for passenger cars in 1936.

Bosch under National Socialism

Under National Socialist rule in Germany from 1933 to 1945, senior executives at Bosch found themselves in a predicament. On the one hand, the company was integrated into the economic system of the National Socialist regime. When the second world war broke out in 1939, Bosch had to convert all its manufacturing facilities to produce military commodities. Like all other



companies involved in the manufacture of armaments, Bosch was assigned prisoners of war and later also forced labor to boost production.

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On the other hand, Robert Bosch and senior Bosch executives supported resistance against Hitler and provided those facing persecution with money or help with emigration. In 1969, on behalf of the company, Hans Walz accepted the title of “Righteous Among the Nations” bestowed by the Yad Vashem Shrine of Remembrance in Israel in recognition of these efforts.

To ensure that the company remained in family ownership, Robert Bosch changed the company from an AG (public limited company) to a GmbH (private limited company) in 1937. The following year, four years before his death, he wrote his will.

By the end of the war in 1945, large areas of the Bosch plants had been razed to the ground as a result of Allied air raids. Robert Bosch did not live to see the destruction, dying on March 12, 1942.

4. 1946 – 1959: Rebuilding and the economic miracle

After 1945, despite the extremely difficult conditions, Bosch was able to build on its earlier successes surprisingly quickly. After the currency reform in Germany in 1948, the company enjoyed a period of rapid growth.

Return to global markets

This growth was at first very fragile as a result of the decartelization program pursued by the victorious Allied forces. The feared dismantling of the whole company and loss of most of its subsidiaries was nonetheless averted in 1952, although Bosch had to make its patents and industrial designs available to competitors. All the sales offices and production facilities outside Germany, however, remained expropriated. As after the first world war, the company had to start again from scratch on the international stage. Nonetheless, the network of sales offices and customer service centers covered over 130 countries again as early as 1956. At this time, Bosch focused increasingly on setting up local production facilities. During the 1950s, for example, production started in India (1953), Australia (1954), and Brazil (1957).

Innovations

Although Bosch focused primarily on automotive technology in the first years after the war, the company soon broadened its product range again to include refrigerators, radios, heaters, and power tools. Blaupunkt introduced the first VHF car radio in Europe in 1952. The launch of the “Bosch Combi” that same year marked a turning point for the company’s power tools business as it reached out to the new target group of DIY enthusiasts.

In the area of automotive technology, Bosch initially reestablished the technology at pre-war levels, while engineers worked flat-out to develop new, pioneering technology. The mechanical gasoline injection system for



passenger cars was taken into series production in 1951. The first semiconductors to be installed in a car (variodes) represented a further milestone in company history. They were first used in 1958 in regulators for generators.

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5. 1960 – 1989: Founding of the divisions and breakthrough in electronics

As a result of rapid growth worldwide and full employment in Germany, a labor shortage developed in the Stuttgart area, then the focus of worldwide production and the hub for international exports. Bosch therefore recruited guest workers from southern Europe and opened numerous new locations, including today's plants in Homburg, Ansbach, Nuremberg, Reutlingen, and Blaichach.

Founding the divisions

This enormous growth made it necessary to reorganize the company's centralized structure. The first step in this direction was taken on July 1, 1959, when the power tools engineering operations were brought together to form an 'independent division'. This was the pilot project for the establishment of a divisional structure throughout the company and the creation of a network of relatively independent divisions with responsibility for achieving their own individual sales and profit targets. This phase of profound change is closely linked with Hans L. Merkle, who joined the board of management on October 1, 1958, before being appointed chairman on April 1, 1963.

Corporate constitution

In 1964, the executors of Robert Bosch's will laid the foundation for today's corporate constitution. Vermögensverwaltung Bosch GmbH acquired the majority of the capital stock of Robert Bosch GmbH from the heirs of the estate in 1964, transferring the voting rights to today's Robert Bosch Industrietreuhand KG (Robert Bosch Industrial Trust), the body responsible for carrying out the company's entrepreneurial ownership functions since then.

In 1969, Vermögensverwaltung Bosch changed its name to Robert Bosch Stiftung GmbH (Robert Bosch Foundation) to underline the social focus of its activities. To this day, the foundation supports projects in the areas of education, health, international relations, society, culture, and science. Robert Bosch Stiftung currently holds 92 percent of the share capital of Robert Bosch GmbH. Most of the remaining shares are held by the Bosch family.

This corporate constitution continues to play a key role in securing the entrepreneurial freedom and financial independence of the Bosch Group. Most of the earnings generated remain within the company, where they are used to secure its future. This allows the company to plan over the long term and to invest heavily in the future without borrowing from the capital markets. Robert Bosch Stiftung is paid a dividend, allowing the body to sustain its commitment to charitable causes.

**New divisions**

In 1963, Bosch formed the Packaging Technology division through a series of acquisitions. The pneumatics and hydraulics operations were merged to form the later Automation Technology division, a precursor of today's Drive and Control Technology division.

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The board of management was particularly keen to expand the company's international business, laying the foundation for a second location in India, in Nashik, in 1973. The same year, Bosch reached an important milestone in the U.S. by opening its first production facility there since the second world war – in Charleston, South Carolina. In 1974, Bosch generated more than half of its sales outside Germany again for the first time since 1932.

Under the leadership of Marcus Bierich, chairman of the board of management from 1984 to 1993, Bosch expanded and pooled its telecommunications activities in the 1980s to form a new business sector. Key areas in this merger included the radio technology business, which was founded in 1954, the cell phone business, ANT Nachrichtentechnik, which was acquired in 1982, and Telefonbau und Normalzeit Lehner & Co.

Safe, clean, economical

The period between 1960 and 1989 at Bosch is shaped by significant product innovations, particularly in automotive technology. At a time when discussion was starting to focus on road safety and environmental protection, these product innovations demonstrated Bosch's commitment to low-emission, economical, and safe cars. Bosch summed up this commitment in its "safe, clean, economical" campaign launched in 1974. The innovations included the D-Jetronic electronic gasoline injection system (1967), the ABS antilock braking system (1978), the EDC electronic diesel control (1986), and the Blaupunkt TravelPilot navigation system (1989).

6. 1990 – 2011: Solutions to the challenges of globalization

The fall of the Iron Curtain also heralded a new era for Bosch. Access to the markets in eastern Europe and Asia in particular accelerated the pace of globalization, a process by which previously distinct regional markets started to intermesh worldwide. Bosch was now faced with the task of meeting these new challenges and grasping the opportunities that arose. The share of sales generated outside Germany rose from 51 percent in 1990 to around 76 percent in 2009.

Herrmann Scholl took over as chairman of the board of management on July 1, 1993, a position he held until 2003. He focused mainly on stepping up the company's activities on the emerging markets of eastern Europe and Asia and safeguarding its innovative strength.

Opportunities in eastern Europe and Asia

As early as 1994, Bosch had gained a foothold in 13 countries of the former Eastern Bloc. Later on, Bosch opened a large number of manufacturing facilities in the region, for example in Jihlava and České Budějovice in the



Czech Republic, Wrocław in Poland, as well as in Miskolc, Hatvan, and Eger in Hungary.

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In Japan, Bosch gradually acquired a majority holding in Zexel Corporation, its biggest Japanese affiliated company, completing the process in 1999. In 2005, this corporation was merged with the other Bosch companies in Japan to form Bosch Corporation, headquartered in Tokyo.

In India, where the fourth manufacturing location was opened in 1999, business also developed rapidly. Up to 2003, the associates at Mico (today known as Bosch India) produced a total of 25 million single-cylinder diesel injection pumps for stationary engines and a further ten million for passenger cars and commercial vehicles.

Up until 1994, Bosch was only represented in China by companies working under license and, from 1989, by one representative office. When the Chinese government recognized the importance of foreign suppliers for the development of its own automotive industry at the start of the 1990s, this market also opened up for Bosch. Following lengthy negotiations, a breakthrough was achieved in 1995 when the Chinese government awarded Bosch the strategically important contract to equip vehicles produced in China with electronic gasoline injection systems. Bosch started assembling these systems through the joint venture company UAES in Shanghai in 1996. 1996 also saw the start of production of diesel technology in Wuxi, power tools in Hangzhou, and spark plugs in Nanjing. Further joint ventures quickly followed, and Bosch founded a holding company for China in 1999.

Growth through acquisitions

Acquisitions in all the business sectors had a major impact on business. For instance, Bosch acquired the brake division of AlliedSignal in 1996, the industrial technology specialist Mannesmann Rexroth in 2001, and the heating technology manufacturer Buderus in 2003. The Security Systems division also expanded its portfolio by acquiring Philips Communication Security Imaging, Telex Communications, and CCTV Extreme. The packaging technology manufacturers Sig Pack, Pharmatech, and Paal were also taken over in 2004, 2007, and 2008 respectively. These acquisitions not only reinforced Bosch's market position in these segments, they also helped balance the company's business structure.

In other areas, Bosch chose to hive off business activities when significant market developments virtually excluded the possibility of successful continuation. For example, Bosch gradually sold off its telecommunications activities, keeping only the navigation system and car radio business (known today as the Car Multimedia division) and the security technology business, which went on to become the Security Systems division in 2002.

Invented for life

The spotlight remained trained on innovation in the 1990s, creating the perfect bridge to today's strategic slogan "Invented for life." The ESP® electronic stability program launched in 1995 was both a technological milestone and a commercial success. It prevents vehicles from skidding and thus plays a key role in improving road safety.



Many other innovations followed, including the common-rail system for high-pressure diesel injection (1997), DI-Motronic gasoline direct injection (2000), driver assistance systems such as the ACC adaptive cruise control (2000), and the parking assistant (2005). In 2003, Bosch introduced the Ixo, the first cordless drill/driver based on lithium-ion battery technology.

Sustainability and corporate responsibility

Franz Fehrenbach, who succeeded Hermann Scholl as chairman of the board of management on July 1, 2003, continued the strategy of systematically reducing the company's dependence on the automotive industry by targeting above-average growth in other business sectors. In doing so, Fehrenbach placed great importance on globalization, environmental protection, resource conservation, and energy efficiency. An important decision was taken in the spring of 2008, when Bosch acquired the German solar cell manufacturer Ersol to create the new subsidiary Bosch Solar Energy.

In the greatest and oldest business sector Automotive Technology, Bosch intensified research on hybrid and electrical drives. The first hybrid car with Bosch technology was launched in 2010. In the same year, SB LiMotive, a joint venture of Samsung and Bosch, started manufacturing lithium-ion batteries.

The global economic crisis in 2008/2009 caused Bosch sales to fall by around 15 percent to approximately 38.2 billion euros in fiscal 2009, and meant that the company recorded an operating loss for the first time since the second world war. But in 2010, Bosch had left the crisis behind – with the highest turnover of the company's history.

The crisis did not affect the company's long-term strategy, a strategy which is not only geared toward opening up promising areas of business, but also incorporates an understanding of corporate responsibility based on the principles of the company founder Robert Bosch. He appreciated that corporate responsibility was essentially about finding a balance between business success and social concerns. The task now is to expand this concept to include environmental protection. In 2007, Franz Fehrenbach said: "Our top priority is without question to secure the company's long-term future, but we are also equally committed to doing so by achieving a balance between ecology, economy, and [...] corporate social responsibility." This statement is based on the belief that a company will only be successful in the long term if it pursues a policy of sustainable business management and does not infringe on social and ecological interests.