

**BOSCH**

Corporate Office for  
Corporate Communications  
Historical Communications  
PO Box 30 02 20  
D-70469 Stuttgart  
Germany  
E-mail:  
Historische.Kommunikation  
@bosch.com  
Tel: ++49 (0)7 11 8 11 - 44156  
Fax: ++49 (0)7 11 8 11 - 44504  
Manager: Dr. Kathrin Fastnacht

# Bosch History at a Glance

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## 1. Robert Bosch's background

Robert Bosch was born on September 23, 1861, in Albeck near Ulm, in southern Germany, as the eleventh of twelve children. His parents belonged to the upper class of farmers in the region. His father, a freemason, was unusually well-educated for someone of his social status, and placed special importance on a good education for his children. From 1869 to 1876, Robert Bosch attended the *Realschule* (secondary-technical school) in Ulm, and then completed a three-year apprenticeship as a precision mechanic. It was during this apprenticeship that he was first introduced to electrical engineering, a discipline that was still in its infancy at the time, but which was to remain a constant source of fascination for him throughout his life.

### Education and career

Following his apprenticeship, Bosch spent seven years working for a range of companies in Germany, the U.S. (Thomas Edison), and the UK (Siemens Brothers), where he was mostly involved in manufacturing electrical equipment. Bosch also learned about bookkeeping from his elder brother Karl, who owned a gas and water installation company in Cologne. In addition, during the winter semester of 1883/84, he visited lectures at Stuttgart Polytechnic in order to overcome his "fear of technical terminology." Here, he acquired a theoretical understanding of electrical engineering.

## 2. A company is born

On November 15, 1886, Robert Bosch opened the "Workshop for Precision Mechanics and Electrical Engineering" in Stuttgart with one associate and one apprentice. His two associates were tasked with constructing and installing electrical equipment of all kinds, including telephone systems. He chose to start up in the state capital of Württemberg, in southwestern Germany, chiefly because of its close proximity to Obertürkheim (now a part of Stuttgart), where his fiancée Anna Kayser (1864-1949) lived.



Robert Bosch and Anna Kayser married in 1887, one year after Bosch founded his company. The couple had two daughters, Paula and Margarete, and a son, Robert.

In 1887, the year of his marriage, Bosch manufactured his first magneto ignition device, which was based on a product made by the engine manufacturer Deutz. Bosch significantly improved the design, and the resultant product provided the impetus that allowed his business to take off.

### **Magneto ignition**

The purpose of magneto ignition was to generate the electric spark needed to cause the air-fuel mixture in a stationary internal-combustion engine to explode. In 1897, Bosch was the first to adapt a magneto ignition device to a vehicle engine. In developing a reliable ignition system, he solved one of the greatest technical problems faced by the automotive industry in its formative years. The innovation was also the first chapter in the success story of Bosch as an automotive supplier. In 1901, Bosch was already in a position to open his first factory, employing 45 associates.

## **3. Becoming a group**

Bosch began expanding his business within Europe in 1898, initially in the UK and then, in the years that followed, in other European countries. Bosch opened his first office in the U.S. in 1906 and his first factory there in 1912. By 1913, the company had sales offices throughout the world and generated some 88 percent of its sales outside Germany. The company experienced enormous growth during this period due to the international success of magneto ignition. Between 1901 and 1907 alone, the number of associates working at Bosch rose from 45 to almost 1,000. The first automotive product – the magneto ignition device, later the magneto ignition system – was joined in 1913 and 1914 by the “Bosch automotive lighting system” (generator, regulator, and headlights) and the electric starter.

After the First World War, Bosch found himself stripped of the majority of his assets outside Germany, and so began the arduous task of reconstructing an international trading network and production facilities outside Germany.

### **First World War and reconstruction**

To reduce his company’s dependence on too few product lines (magneto ignition system, electric starter, and Bosch automotive lighting system), Bosch began a process of diversification as from about 1920, introducing a whole range of automotive innovations that helped the company to grow further. Such innovations included the electric horn and a motorcycle lighting system (both 1921), the windshield wiper (1926), and diesel injection and the pneumatic power brake system (both 1927), to name but a few. This strategy enabled the company to re-establish its position as an internationally leading automotive supplier – and this time with an even more comprehensive product portfolio.



At around this time, Bosch's private life was overshadowed by the death of his son in 1921 and the breakup of his marriage. Margarete Wörz (1888-1979), whom he married in 1927, bore him two children, Robert (1928-2004) and Eva (\*1931). It was at this point in time that he withdrew from the day-to-day running of the company, handing over management responsibility to the three directors Hermann Fellmeth, Hans Walz, and Karl Martell Wild. Hans Walz assumed overall responsibility.

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#### **4. Crisis and diversification**

Owing to the major economic crises in the second half of the 1920's, which hit the automotive industry particularly hard in 1926, a comprehensive process of modernization and diversification was introduced at Bosch in order to reduce dependency on the automotive industry. Diversification was preceded by the introduction of modern manufacturing methods such as assembly-line production, which first started up in 1925.

The process of creating new business fields by acquiring or establishing companies began around 1930 and led to the creation of businesses which included power tools, radios for the car and the household (Blaupunkt), household appliances, natural gas-fired water heaters (Junkers), cinema projectors (Bauer), and television studio equipment.

In only a few years, the company was successfully transformed from a small automotive supplier into a modern, multinational electrical engineering group.

#### **Robert Bosch's legacy**

In 1937, about five years before his death on March 12, 1942, Robert Bosch changed his company to a GmbH (private limited company) and wrote his will. In his will, he stipulated that the dividends of the company should be allocated to charitable causes. At the same time, he drafted the outlines for today's corporate constitution, which was adopted by his successors in 1964 and led to the establishment of Robert Bosch Stiftung GmbH, a charitable foundation.

#### **Adaptation and opposition**

The years 1933 to 1945 saw the company forced to adapt to National Socialist rule. However, senior members of the company management were active in resistance to the regime.

Due to the lack of skilled workers caused by the war, Bosch used prisoners of war and forced labor. Nevertheless, the company management maintained a distance from the regime. An example of this approach can be found in a speech given by Robert Bosch's successor, Hans Walz, on July 17, 1943, at the Stuttgart-Feuerbach plant, during which he openly criticized state intervention in the economy. Only the company's importance as an armaments producer prevented Walz's imprisonment at the time. A few months later, Walz once again came under scrutiny by the National Socialist authorities, when investigations into the failed assassination attempt on Adolf Hitler on July 20, 1944, uncovered a trail that led to the Bosch headquarters in Stuttgart. In 1970, in recognition of his work to keep associates of Jewish descent from being deported to concentration camps, Walz was granted the



title of “Righteous Among the Nations” by the Yad Vashem Holocaust Martyrs’ and Heroes’ Remembrance Authority.

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## **5. The company after the death of its founder**

Like many other German companies, Bosch was able to build on earlier successes soon after 1945. Although a considerable proportion of the Stuttgart and Feuerbach plants had been seriously damaged by bombing, crucial production machinery had been moved to rural areas and, as a result, remained largely intact. There were also sufficient numbers of skilled workers available from as early as the summer of 1945 onwards. Currency reform in 1948 was followed by rapid growth. The workforce grew from just above 10,000 in 1948 to nearly 40,000 in 1958. Over the same period, sales rose from 85 million (1948) to 1,153 million German marks (1958).

However, the decartelization program of the victorious Allied forces initially posed a threat to this growth. The feared breakup of the company as a whole and the loss of its subsidiaries was nonetheless averted, although Bosch had to make all its own patents and industrial designs available to competitors.

### **Product innovations and the establishment of new plants**

Technologically, the image the company presented to the world in the 1950’s was an incoherent one. In many business units, it lagged behind the latest innovations, and this had to be made up for. In other areas, however, developers were working flat out on new, pioneering technologies: in fields such as vehicle electronics, for example, without which no modern car would be complete. The initial successes in this area appeared in 1958, when semiconductor elements were first used in alternators.

A key product with major relevance for the future was the mechanical gasoline injection system that first went into series production in 1951. This was followed by the expansion of the power tools and household appliances product ranges, a result of the West German “economic miracle” that was starting to kick in at the time.

As a consequence of the general economic upturn in the Federal Republic of Germany as the country moved towards “full employment,” it became apparent in the mid-1950’s that there was a growing labor deficit in the greater Stuttgart area. The company countered this by opening a number of plants in other regions of Germany between 1955 and 1965, for example in Nuremberg, Ansbach, Giengen, Bühl, and Blaichach.

## **6. On the way to becoming a global technology group**

In 1959, the company began introducing far-reaching reforms to its corporate structure and constitution. Director of manufacturing Eugen Hagmaier presented a paper on the future development of the Bosch Group (“Thoughts on the long-term strategy of our company”), analyzing the company’s situation from a manufacturing point of view in particular, and drawing appropriate conclusions. The same year saw the start of work to restructure the company into divisions. First in line was the Power Tools division.



The work of Hans Walz, honorary chairman of Robert Bosch GmbH and chairman of the executors' committee, in drafting a new constitution for the company led in 1964 to a milestone in the company's history. With the agreement of the heirs of Robert Bosch and in accordance with his will, the new corporate constitution was adopted and today's Robert Bosch Stiftung was set up. Roughly 92 percent of the share capital of Robert Bosch GmbH is now held by this foundation. The Bosch family holds a strong seven percent of the share capital, while the remaining shares are held by Robert Bosch GmbH and Robert Bosch Industrietreuhand KG, an industrial trust. The foundation transferred its voting rights in the shareholders' meetings of Robert Bosch GmbH to the trust.

### **Industrial technology and telecommunications**

A second wave of diversification also began in 1964. This included the Packaging Technology division, formed as a result of a series of acquisitions, and the beginnings of a later Automation Technology division, with its pneumatics and hydraulics businesses.

Much in the spirit of his predecessors Robert Bosch and Hans Walz, Hans L. Merkle, chairman of the board of management from 1963 to 1984, placed particular emphasis on strengthening international business. An important milestone was achieved in 1973 with the founding of the first Bosch manufacturing site in the U.S. since the Second World War. Bosch was back on track to make the U.S. its strongest market outside Germany, as it had been before 1914.

In a third wave of diversification, the company tapped into the telecommunications market with the phased acquisition of Telenorma and ANT from 1982 onwards. Under the leadership of Merkle's successor, Marcus Bierich, chairman of the board of management from 1984 to 1993, the company expanded and pooled its telecommunications activities from 1987 onwards, though it was not until 1989 that these activities were integrated into a separate business sector – Communications Technology.

This phase was also marked by a withdrawal from other areas of business. From 1986 onwards, after almost 60 years, Bosch gradually pulled out of the TV studio engineering sector and in 1988 wound up its long-established projector and camera technology business, started when the company acquired Eugen Bauer GmbH in 1934.

### **Product innovations for the car**

The period between the founding of the divisions from 1959 onwards and the end of the East-West divide saw Bosch develop some major product innovations, particularly in the field of automotive technology. These included the D-Jetronic electronically controlled gasoline injection system (1967), the ABS antilock braking system (1978), the EDC electronic diesel control (1986), the Blaupunkt TravelPilot navigation system (1989), and the ESP<sup>®</sup> electronic stability program.



The growth of the company over these three decades can be clearly seen from the key data. Sales rose from around 2.2 billion German marks (around 1.1 billion euros) in 1963 to almost 32 billion German marks (around 16 billion euros) in 1990. The share of sales generated outside Germany also increased in this period from 35 to over 50 percent, with the workforce growing from 73,000 to over 180,000.

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## **7. Solutions to the new challenges of globalization**

The end of the Cold War marked the beginning of a new era for the world economy. In the middle of this process, Marcus Bierich handed over the chair of the board to Hermann Scholl in 1993. At this point, the global economy was in the midst of a major recession. At Bosch, where the effects of an extraordinary economic boom following Germany's reunification were coming to an end, this recession hit hard from the summer of 1992 onwards, and resulted in rationalization and job cuts between 1992 and 1994.

### **Growing markets in eastern Europe and Asia**

At the same time, the company management initiated systematic efforts to tap into the markets opening up in Asia and eastern Europe. In eastern Europe, this involved expanding its trading organization and establishing regional companies, for example in 1993 in Russia. Key developments in Asia included the conclusion of key joint ventures in China and Korea and pooling Bosch activities in Japan into one company between 1997 and 2001. In India, where Bosch had been active since 1919 and where Bosch products had been manufactured under the Mico brand since 1951, Bosch established Robert Bosch India Ltd. in 1997, creating the organizational structure that a growth market of this kind requires.

The acquisition of the brakes business at AlliedSignal in 1996 marked a key investment for the largest business sector – Automotive Technology. In 1999, a joint venture was founded with ZF Friedrichshafen for the production of steering systems for cars and commercial vehicles. However, two divestments also helped secure the company's future development. Firstly, Bosch's automotive lighting activities were integrated into a joint venture with Magneti Marelli called Automotive Lighting Holding, from which Bosch gradually withdrew. The second divestment took place in the Communications Technology business sector in 2000 with the sale of the Public Networks, Private Networks, and Terminals business units.

### **Boosting thermotechnology and industrial technology**

The takeover of the hydraulics specialist Mannesmann Rexroth AG and the heating technology manufacturer Buderus had a major effect on the Consumer Goods and Building Technology and the Industrial Technology business sectors. These acquisitions not only reinforced Bosch's market position in these sectors, but also helped counterbalance the predominance of automotive technology within the company's portfolio.

Franz Fehrenbach, who took over the chair of the board of management from Hermann Scholl in 2003, is systematically continuing this policy. However, his



leadership is also characterized by a focus on “renewable energies,” “energy efficiency,” and “emissions reduction.”

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At the end of 2000, Bosch had a workforce of more than 200,000 worldwide – a figure which had climbed to over 280,000 by 2008. In 2008, sales at Bosch broke through the 45 billion euro mark. The share of sales generated outside Germany, still 49 percent in 1993, amounted to 75 percent in 2008, a percentage only previously achieved by Bosch before the First World War.