



Strengthening manufacturing capacities

Best practice category

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Stakeholder group

Large enterprises

Value chain position

IDM

General Information

Bosch is a global industrial group with a strong presence in the semiconductor sector, operating through Robert Bosch GmbH and approximately 470 subsidiaries in over 60 countries. With over 60 years of experience in the development and production of semiconductor components, Bosch is now one of the leading suppliers of integrated automotive systems, thanks to the combination of its electronic expertise and in-depth knowledge of the automotive sector.

The group's activities are divided into four main sectors: Mobility, Industrial Technology, Consumer Goods and Energy and Construction Technologies. In the semiconductor industry, Bosch is recognised as a specialised player, with a strong positioning in high-value technology niches, such as sensors and silicon carbide (SiC). Bosch has also strengthened its European presence in the semiconductor sector through strategic partnerships. Bosch's commitment to digital innovation is also particularly relevant: the company has established an entire division dedicated to artificial intelligence and cybersecurity, making AI-based tools accessible to employees and integrating them transversally into company activities.

Activities and best practices

- Bosch constantly invests in research and development, actively participating in international networks and expert committees, maintaining technological leadership in strategic areas such as electric mobility, automation and connectivity. The recent expansion of production in Europe, through joint ventures such as the European Semiconductor Manufacturing Company (ESMC) with TSMC and NXP, is testimony to the group's commitment to strengthening European production capacity and supporting the continent's technological sovereignty.

- Bosch ensures continuity of semiconductor supplies through a comprehensive offering dedicated to supply chain resilience. The company works with customers to analyse the causes of any disruptions, offering targeted solutions such as booking production capacity, constant monitoring of the market and management of both internal and customer safety stocks. This holistic and agile approach allows to anticipate risks and optimise availability, strengthening the supply chain in an increasingly complex global context.
- Bosch supports the global transition to e-mobility through strategic partnerships with innovative automotive manufacturers, such as Xiaomi, whose first SU7 electric vehicle integrates Bosch's silicon carbide (SiC) technology 400V e-axle system. This collaboration demonstrates how the combination of expertise in power electronics and Bosch semiconductor manufacturing allows to improve energy efficiency, extend range and respond to the growing needs for comfort, safety and connectivity in premium electric vehicles.

Challenges addressed with this practice

Bosch faces some of the main challenges related to strengthening semiconductor production capacity in Europe, in a global context characterised by strong supply chain pressures and a growing demand for energy-efficient solutions. Through strategic investments in research, manufacturing and innovation, such as joint ventures for European manufacturing and the integration of silicon carbide (SiC) into electric mobility systems, Bosch contributes to the development of a more resilient and competitive European industrial ecosystem.

The holistic approach to supply chain management, coupled with the cross-cutting adoption of AI, enables the company to anticipate risks, optimise component availability and support the evolution towards an increasingly digital, connected and sustainable automotive industry.