ANNUAL REPORT 1991

ROBERT BOSCH GMBH

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Robert Bosch GmbH
Stuttgart

Annual Report 1991

Bosch Group Worldwide	1991	1990
Sales	33,600	31,824
Growth compared to the prior year as a percentage	5.6	4.0
Foreign sales		
as a percentage of sales	48	51
Expenditures for research and development	2,144	2,042
as a percentage of sales	6.4	6.4
Additions to tangible fixed assets	2,273	2,790
as a percentage of depreciation	126	162
Number of employees		
annual average	181,498	179,636
as of January 1, 1992/1991	177,123	181,207
Total assets	24,247	23,544
Equity capital	7,471	7,050
as a percentage of total assets	31	30
Net income for the year	540	560
Unappropriated earnings	43	43

Values stated in million DM.

References to interests in companies in this report pertain to shares held directly or indirectly by Robert Bosch GmbH.

The economic trends in 1991 were essentially influenced by three major events: The reconstruction in the New States of Germany, the war in the Gulf region, and the disintegration of the Soviet Union. These events reflected on our business as well. While domestic sales continued to increase strongly, foreign sales stagnated.

1991 sales of the Bosch Group rose by 5.6 % (1990: 4.0 %) to a total of 33.6 (1990: 31.8) billion DM. Approximately one half of the sales increase in 1991 was attributable to the New States of Germany. With our subsidiaries in Radeberg and Leipzig, we participated in the development of an efficient telecommunications network. We began to produce electric power tools at Sebnitz/Saxony. At Eisenach/Thuringia, we began to build a factory for automotive equipment and, in addition, we enlarged our network of Bosch Service outlets. We reinforced our activities in Middle and Eastern Europe. As of the beginning of 1992, we are operating through our own sales companies in Poland, Hungary and in Czechoslovakia.

We continued to expand our market positions in the remaining countries of Europe, in North America and in Southeast Asia by investments and new joint ventures.

We were able to further improve the quality of our products in close cooperation with our customers and suppliers.

In order to arrest the decline of profits which began in 1990, we took measures to achieve savings in operating expenses, investments and in the personnel sector. The new Union agreements in the German metalworking industry, containing excessive wage increases, forced the acceleration of such measures. To a large extent, keen competition in our markets prevented us from passing on increased costs by means of price adjustments.

As of January 1, 1992, employment in the Bosch Group was 177,123, down from 181,207 employees the previous year. The new figure includes 4,300 employees that were added through the expansion of the consolidated group.

We are continuing our efforts to reduce costs throughout the current year. In 1991, we introduced on a broad scale a technique of steady improvements (CIP = continuous improvement process) tailored for our purposes.

CIP is a process of continuing small improvements. It delegates the authority to make decisions to lower management levels, and together with intensified teamwork, aims to help employees identify themselves more closely with their tasks.

Worldwide economic growth in 1991 slowed to only about 1%. This was the lowest growth rate since the 1982 recession.

In contrast, the economy rose by 3% in the Old States of Germany. While the growth in the first half of 1991 was around 4.5%, during the second half of the year it dropped to about 2%.

Larger growth of the Bosch Group

Worldwide sales of the Bosch Group rose by 5.6% to 33.6 billion DM. Adjusted for price increases and currency-exchange fluctuations, the sales increase amounted to 5.4%. Consolidated figures of the Group now include those of the newly added subsidiaries Robert Bosch de CV, Mexico, Telenorma Leipzig GmbH and also Motometer AG, Leonberg (prorated for the period from July 1 to December 31, 1991). Without these companies, the increase would have been 4.6%.

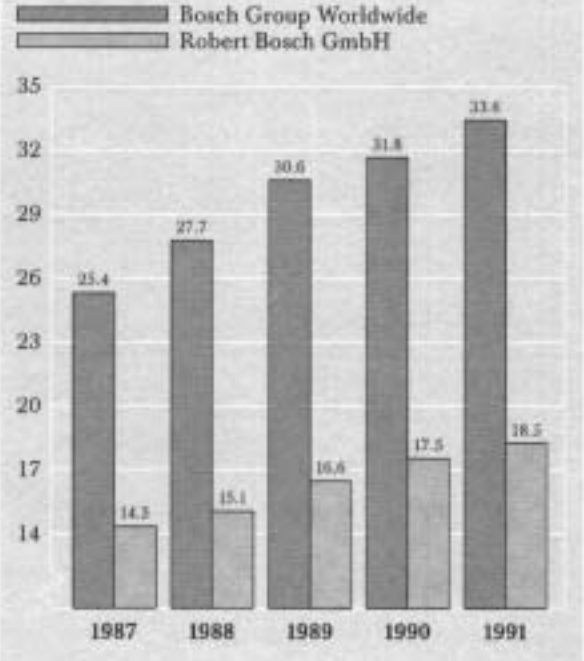
In Germany, sales of the Bosch Group increased by 12.0% while foreign sales were stagnant. Sales of Robert Bosch GmbH increased by 5.4% to 18.5 billion DM.

Percentage change in sales	1991	1990
Bosch Group Worldwide	+5.6	+4.0
Robert Bosch GmbH	+5.4	+5.4

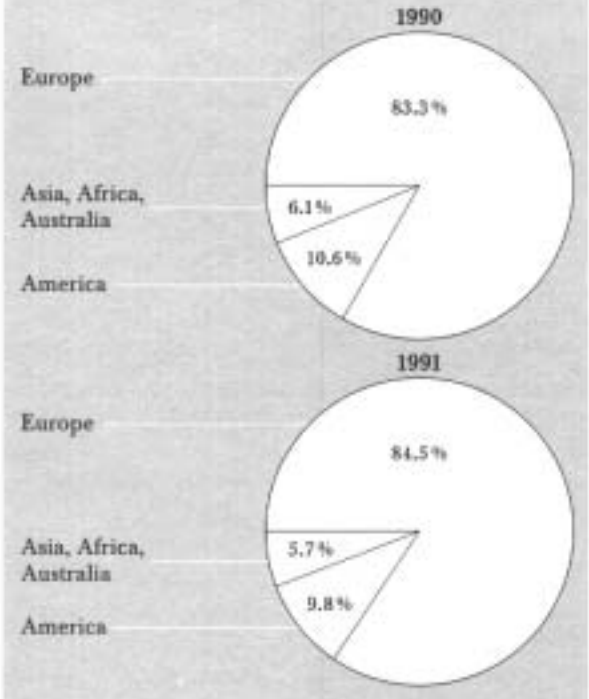
Diverse developments within the business sectors

Developments for 1991 differed among the four business sectors. Automotive equipment sales were affected by the declining trend in automobile sales. The increase in sales amounted to 3.3% only, reaching a total of 16.6 billion DM. In particular, the demand increased for our aftermarket products, as well as for fuel-injection equipment for diesel engines and gasoline engines.

Bosch Group Worldwide and Robert Bosch GmbH Sales 1987–1991
(billion DM)



Bosch Group Worldwide Sales structure by regions 1990 and 1991



Sales of the communications technology business sector increased by 9.4% to 7.9 billion DM. This sector benefitted from the expansion of the Telekom network of the German Postal Service in the New States of Germany, as well as from the demand for private communications and security systems.

As in the previous two years, the consumer goods business sector achieved the largest sales growth. Sales increased 9.7% to a total of 7.1 billion DM. The high demand for electric power tools and gas-fired heaters in the New States of Germany in particular, were contributing factors.

The capital goods business sector suffered from the continuing unfavorable trend in the mechanical-engineering sectors. It experienced a sales decrease of 3.2% to 2.0 billion DM.

Reorganization within the business sectors

In the automotive sector, together with Varta Batterie AG, Hannover, we formed VB Autobatterie GmbH in which we hold a 35% share. Into this joint venture, we merged, effective January 1, 1992, our starter-battery production facilities at Hildesheim and Guardamar/Spain, as well as the development departments in Hildesheim and Madrid with a total of around 700 employees.

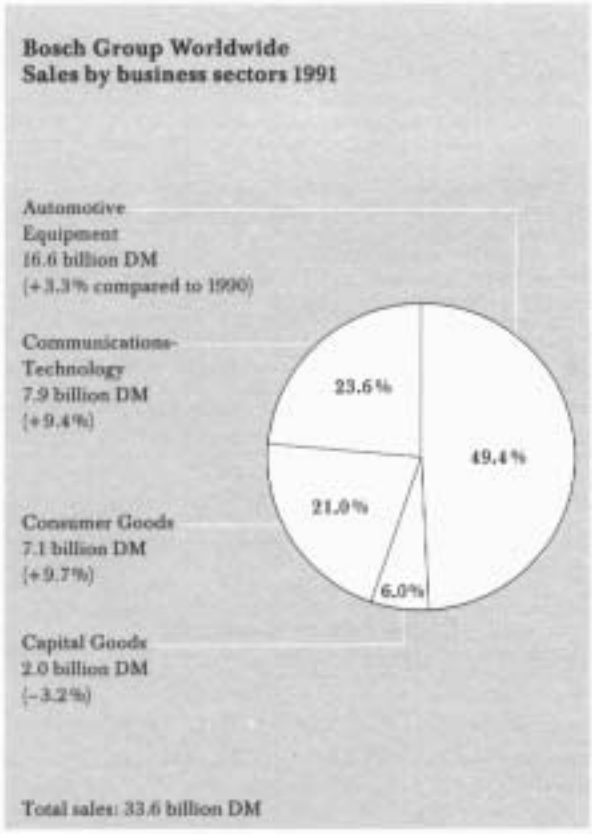
Early in 1992, our regional subsidiary Robert Bosch Corporation, Broadview, IL acquired a 49% share of the Diesel Technology Company, Grand Rapids, MI, and will increase its shareholdings to 50% during 1994. This joint venture with Penske Transportation Inc, Detroit, MI develops and produces diesel fuel-injection equipment for commercial vehicles, as well as for marine and industrial engines. The joint venture will be engaged primarily in the areas of unit injectors and pump-line-nozzle systems for heavy-duty commercial vehicles.

The lighting-technology product area is suffering from world-wide overcapacities. Therefore, we are forced to consolidate our production. We discontinued headlamp production at Castellet/Spain in 1991, and intend to also discontinue the production at Linköping/Sweden by mid-1992. We have transferred the component production for headlight-leveling controls from Mondeville/Caen to Penang/Malaysia.

Within the communications technology business sector, we expanded our activities in the services area. Effective April 1, 1991, the newly formed Bosch Telecom Service GmbH began operating. This company offers services for the marketing of telephone connections for the mobile digital radio network (C and D network), as well as in the "Chekker" trunking network.

We acquired a share in MotoMeter AG, Leonberg, during May 1991. We now hold 98% in this company which manufactures indicating and display systems for automobiles.

During the first half of the year, we also acquired a 40% share of the voting stock of Signalbau Huber AG, Munich. This company is active in traffic-control systems and is a specialist for traffic lights and signal systems as well as for electronic parking control systems.



In contrast to our new acquisitions and the formation of new companies, we also concluded some structural divestitures. We sold our hearing-aid business to Ascom Holding AG, Berne. Our activities in public-address technology were sold to the Peiker Group, Bad Homburg, and effective April 1, 1992 we sold the medical electronics business to Delft Instruments NV, Delft. The production of car loudspeakers at Herne will be discontinued by the end of 1992 and transferred to Malaysia. Finally, our Berlin production facilities will be concentrated in Spandau.

In Italy, we acquired all outstanding shares of TTN Sistemi di Communicazione SpA, Milan, a company in which we previously shared management together with Telettra.

We signed a letter of intent regarding the formation of a joint venture with Emerson Electric Co, St. Louis, MO. This company, in which we have an equal interest, will develop, produce and sell electric power tools in the United States. Emerson will merge its subsidiary company Skil Corporation, and Bosch its Power Tool Corporation, into this new enterprise.

Sales network in foreign countries expanded

We expanded our distribution network abroad. We took charge of our representatives' businesses in Finland and Greece. We founded new sales subsidiaries in Thailand, Poland, Hungary and Czechoslovakia.

Worldwide, the number of Bosch Service outlets increased by 469 to a total of 9,835. This means that in the sales and service organization for automotive equipment, our partners employ approximately 100,000 people in 121 countries.

Investments in tangible fixed assets were reduced

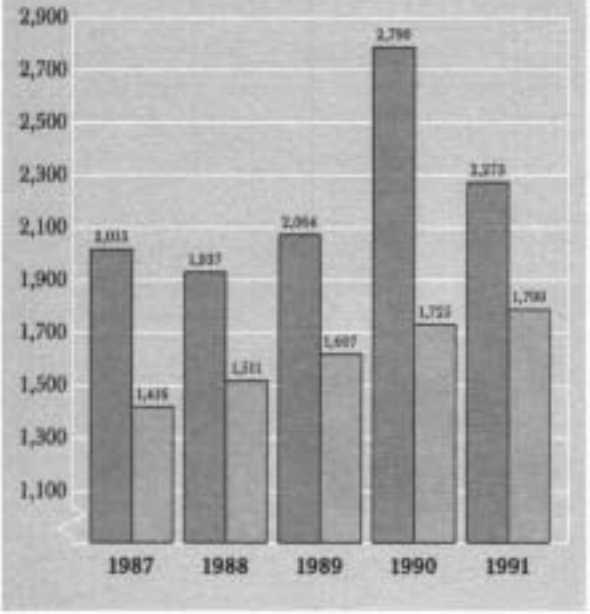
Investments in tangible fixed assets amounted to 2.3 billion DM (1990: 2.8), thus exceeding depreciation for such assets by 26%. As a percentage of sales, these investments were 6.8% (1990: 8.8%). In the New States of Germany, we invested 80 million DM in tangible fixed assets.

Following the completion of several large-scale projects outside Germany during 1989/90, the share of investments in foreign countries fell to 36% (1990: 39%). These projects concerned mainly the new facility for compact alternators in Great Britain, the ABS production in the United States, and the technical center in Japan.

Approximately 80% of our investments were again in machinery and equipment for the expansion of production facilities, as well as for development and manufacture of new products.

Investments in land and buildings amounted to 415 million DM (1990: 522). Of this amount, 267 million DM (225) was spent domestically and 148 (297) million DM abroad. We expended 33 million DM for construction and expansion of our facilities in the New States of Germany.

Bosch Group Worldwide
Additions to tangible fixed assets and depreciation 1987–1991
(million DM)



Increased expenditures for research and development

Expenditures for research and development rose to 2.1 billion DM from 2 billion the previous year. The number of employees in this area dropped to 13,048 (1990: 13,483). Abroad, the number increased at year's end to 1,727 (1990: 1,622).

New construction and modernization in the New States of Germany

In Eisenach we began construction of a factory for automotive equipment with a gross floor space of approximately 42,000 square meters. The site has an area of 94 hectares (210 acres). Two production plants are under construction. We began extensive measures to rehabilitate facilities at Brotterode, Radeberg and Sebnitz.

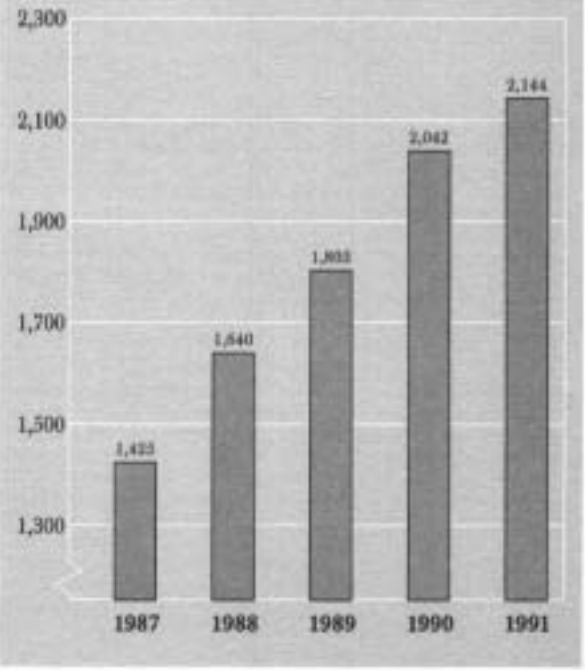
At Immenstadt we built another production plant for Antilock Braking Systems (ABS). In order to relieve the load on the Schwieberdingen facilities, we erected another building for the development of new automotive equipment in Stuttgart-Feuerbach. By doing so, we have improved the overall structure of our operations in this city area.

In order to meet the increasing demand for electric power tools, we expanded the product assembly plant at Murrhardt and the production plant at Sebnitz.

At Derendingen/Switzerland, we constructed a building for the assembly of electric power tools.

We began the second phase of an additional manufacturing building in Rodez, Southern France, for the production of the Mono-Jetronic injection unit. At the Mondeville/Caen facility, we constructed a new building for the production of electronic control units.

Bosch Group Worldwide
Expenditures for research and development 1987–1991
(million DM)



Purchasing offices in the world's important markets

Our purchasing volume for production materials and trade merchandise amounted to almost 14 billion DM in 1991. Including expenditures for fixed assets, our total purchasing volume reached 15.5 billion DM (1990: 15).

In order to open up markets for the acquisition of materials and merchandise on a worldwide basis, we established purchasing offices in India, Portugal, Taiwan, and in Turkey. With a total of 13 such offices, we are now represented in all markets that are of significance to us.

Cooperation with suppliers intensified

We involve our suppliers at a very early date in the development of new parts and components. In parallel to our existing organization, we have set up special project groups which overlap product and functional areas. Through early and intensified cooperation between development, purchasing, production, quality as-

surance and distribution, we intend to shorten development times in order to be quicker and more flexible in responding to customer demands.

We selected 60 companies to receive our merit award for "Quality and special efforts as supplier to the Bosch Group".

Number of employees reduced

Although we decreased the number of employees by the end of 1991, the average number for the year still increased by 1,862 to 181,498. This resulted mainly from additions of new companies to the consolidated group with about 4,300 employees.

Annual average number of employees	1991	1990
Robert Bosch GmbH	73,955	75,950
Domestic subsidiaries and affiliated companies	42,856	41,599
Regional subsidiaries	64,687	62,087
Bosch Group Worldwide	181,498	179,636

The number of employees increased at our regional subsidiaries in Great Britain, Mexico and Portugal.

Profits continue to be unsatisfactory

The profit trend did not meet our expectations. A combination of excessive wage settlements with the Unions in Germany and a structural change in the sales pattern resulted again in lower operating profits. We were, however, able to stop this trend during the year. Profits of the Bosch Group Worldwide declined to 540 million DM from 560 million DM in 1990. Profits of Robert Bosch GmbH remained unchanged.

We propose to our stockholders that the net income of Robert Bosch GmbH in the amount of 267.5 million DM (1990: 267.5) be distributed as follows:

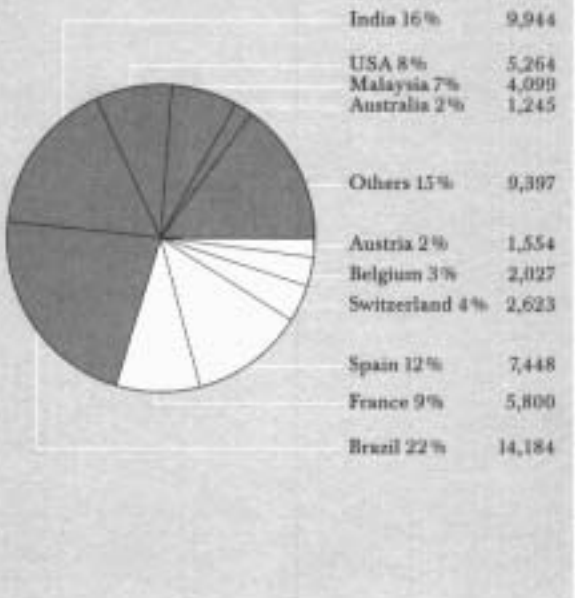
Transfer of 225 (1990: 225) million DM to surplus accounts. Payment of a dividend of 42.5 (1990: 42.5) million DM or 5.3% of shareholder's par capital.

Stated equity capital at Robert Bosch GmbH will thus amount to 3,320 (1990: 3,095) million DM. Equity capital of the Bosch Group Worldwide rose to 7,471 (1990: 7,050) million DM.

Continuing sales growth expected

We expect sales in 1992 to exceed the 1991 level. All business sectors will contribute to the growth. Underlying factors for these expectations are the
– legislative changes regarding emission standards in the EC, which will become effective on January 1, 1993,
– the installation of the new telecommunications Network in the New States of Germany and,
– the continuing demand for consumer goods.

Bosch Group Worldwide
Employees in foreign countries, numbers as per regions as of January 1, 1992



Employees of the Bosch Group

At the beginning of 1992, the Bosch Group Worldwide employed a total of 177,123 people, 4,084 or 2.3% less than a year before. Our foreign companies reported a drop of 213 employees (−0.3%) to a total of 63,585.

In Germany, the number of employees fell by 3,871 or 3.3% to a total of 113,538, of which approximately 61% were factory workers, 35% salaried employees and 4% apprentices. Female employees accounted for 29% of the workforce. Of the industrial workforce, the proportion of skilled workers amounted to 36%, and one out of four persons was of foreign nationality.

Personnel costs rose further

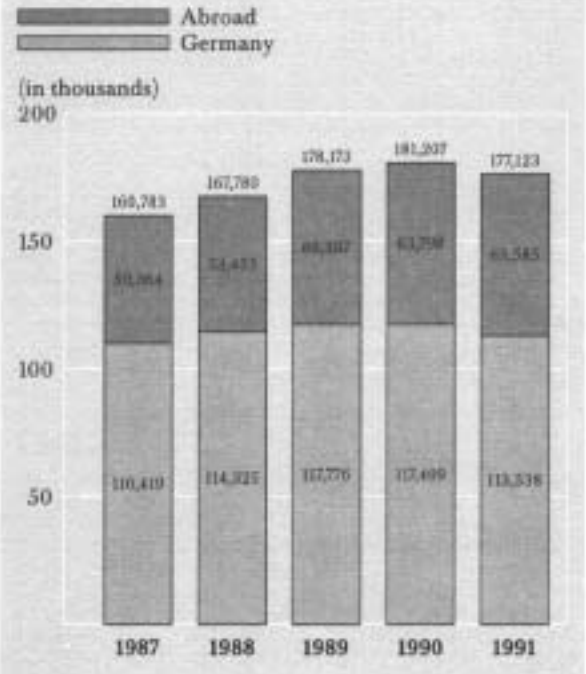
Effective June 1, 1991, salaries and wages covered by Union agreements rose by 6.7% for employees within the states of the former Federal Republic. Lower wage groups rose by up to 12% as a result of prior adjustments. Employees also received a lump sum of 290 DM each for the months of April and May. In combination with increased contributions for social security, expenditures for salaries, wages, and social benefits rose 9.1% for each hour worked.

Total personnel costs of Robert Bosch GmbH rose 222 million to 5.9 billion DM. Fringe benefits amounted to 2.9 billion DM. Thus, for every 100 DM of direct compensation for labor, we paid an additional 101 DM for social benefits.

Worldwide, personnel expenditures amounted to 11.4 (1990: 10.7) billion DM.

Our employees again participated in the profits. They received a service and performance premium in the amount of 85 DM for every 3,285 DM of annual gross earnings and 20 DM for every year of employment. Including vacation pay and the Christmas bonus mandated by Union agreements, on average an employee thus received extra pay amounting to 162% of one month's earnings.

Bosch Group Worldwide
Employees 1987–1991
(All figures apply to Jan. 1 of the following year)



Domestic Bosch Group
1991 fringe benefits per employee

		DM
Voluntary company benefits 12,060 DM	Miscellaneous	2,550
	Training and education	2,170
	Special pay	2,350
	Pension benefits	4,990
Union benefits 11,800 DM	Miscellaneous	980
	Christmas bonus	1,790
	Additional vacation pay	2,810
	Vacation pay	6,220
Legally mandated benefits 15,200 DM	Miscellaneous	1,520
	Sick pay	2,350
	Public-holiday pay	2,310
	Social security	9,020
39,060 DM		

Performance evaluation expanded to result in a dialogue with the employee

We intend to involve the individual employee more intensely with company matters and have him/her participate in the decision-making process. Thus, in consultation with management personnel and supervisory staff, employees, and Union representatives, we expanded the existing performance evaluation for salaried employees. This is now in the form of a dialogue between the employee and his/her superior. Initially we tested this method at four domestic plants.

At the center of this new procedure is the agreement reached concerning the employee's targets for the coming year, as well as upon the measures to be taken to increase his or her efficiency. If so desired, his or her professional development potential can also be discussed and the measures to be taken can be defined.

First results of this employee dialogue method are positive. The majority of mutually agreed upon goals originate from proposals made by the employees themselves. Therefore, beginning in 1992, we will include all employees of Robert Bosch GmbH in such dialogues and will introduce the program at various domestic and foreign subsidiaries.

Principles for employee development

In order to maintain and improve our efficiency, all our employees must at all times possess the qualifications fitting their position and task. Therefore, for employees at all levels, we have drawn up a number of principles on improvement potential, a selection of which are given in the box below.

"Principles for the advancement of employees"

Within the framework of our company goals, it must be possible for every employee to develop, and to take on international responsibilities in accordance with his or her potential and skills. In a dialogue with the employee, we want to work out his or her possibilities for development.

Basically, the responsibility for employee development remains with his/her immediate superior, who in turn should be advised and assisted by his/her superior.

The employee must be prepared to actively pursue his/her own development. In addition, we expect him/her to contribute to increasing the efficiency of his/her team. Employee development applies to every employee in our Company
- in all countries,
- in all divisions/sectors/factories,
- in all operational activities, and
- at all levels.

While taking the personal opinions of our employees into account, all decisions regarding employee development are to be aligned to company interests. Overall strategy has priority over local interests, and long-term goals are more important than short-term goals. In cases concerning conflicts of interest, we will aim to find solutions acceptable to both parties. When judging management performance, we will place great importance on the manager's contributions to employee development.

Recognizable discrepancies between requirements and personal suitability will be discussed with the employee, and suitable measures introduced as soon as possible to solve the problems. All employees are encouraged to impart their experience and know-how to others. This also applies within the framework of in-house seminars.

The best place to learn is at one's own place of work.

New approaches regarding production personnel

We are shifting more responsibility to production workers, and they are also to be better informed about the company activities. We shall utilize modified teamwork which we have already practiced in our learnshops for the past ten years. There are more than 1,000 active learnshop groups and quality groups within our domestic Divisions. Many of these also concern themselves with subjects outside of production operations. We intend to expand modified teamwork to all domestic and foreign manufacturing locations.

For the first time we introduced a new work model at our plant in Cardiff/South Wales. We formed small production teams whose members work together closely, and to a large extent provide their own solutions for performing the tasks in their particular area.

Increased emphasis on vocational training and further education

At Robert Bosch GmbH and its domestic subsidiaries, 1,729 (1990: 1,623) apprentices began their training. Of these, 16% were females for whom a commercial curriculum will again be at the forefront. The number of young women training for technical/industrial vocations dropped from 9% to 7%. 1,220 apprentices were hired for permanent employment and 106 will continue their education. We also expanded vocational training at our regional subsidiaries, where a total of 583 young people began their apprenticeships in 1991.

We are training 405 apprentices in the New States of Germany. The training is patterned in accordance with the Bosch standard, and supported by our plants in Hildesheim, Leinfelden and Stuttgart-Feuerbach. These plants provided modern machinery and enabled the teaching personnel to qualify at our apprentice workshops.

We remodelled the program for continued education of management personnel. The changes in demands for leadership as well as the increasing internationalization of our business activities made it necessary to adapt the program. In addition to lectures for professional enhancement, we offer a wide range of seminars with special subjects.

A total of 114,900 employees worldwide participated in our further-education programs. At all domestic locations, by means of a central entry system we are in a position to look at registrations for all such events, and to book participants via the computer.

Construction of rental housing expanded

Robert Bosch Siedlung gGmbH increased its building program. It completed 102 units at a cost of approximately 22 million DM. Another 117 units are under construction and will be available for occupancy in 1992 and 1993. In addition, buildings are planned in the New States of Germany, specifically at Eisenach and Sebnitz.

Company health-insurance office network expanded

The company health-insurance fund of Robert Bosch GmbH, Stuttgart, expanded its network of offices and substations. Employees in Berlin and Wolfenbüttel, as well as those of Robert Bosch Fahrzeugelektrik Eisenach GmbH, voted to be included in the company health-insurance organization which now provides cover for most of the employees of Robert Bosch GmbH.

Appreciation of employee efforts

We wish to thank all employees for their effort and commitment.

Their efforts contributed to our success and to our overcoming difficulties when they arose. We wish to also thank the employee representatives for their trustworthy cooperation which helped to support the measures needed to ensure the safety of our company.

New systems for micromechanical sensors and actuators

Small rapid-acting sensors and actuators are being used more and more frequently as important components in controlled systems especially in vehicles and machines. Utilizing a combination of thin-film technology and silicone micromechanics we built space-saving, highly sensitive precision sensors and actuators. We succeeded in applying piezo-electric zinc-oxide layers on silicone as the substrate. This layer converts electrical energy into motional energy, and vice-versa, motion into electrical energy. We applied this principle to the first lab samples of resonant pressure pickups and accelerometers.

We developed magnetic-field sensors for the non-contact measurement of travel, angle, and rotation even under difficult ambient conditions by taking advantage of the anisotropic magneto-resistive effect observed in a nickel-iron alloy. We can also compensate for temperature effects by using an integrated sensor, which in addition to the resistors sensitive to the magnetic field also incorporates all the electronics required for its operation.

We are working on high-definition, non-contact optical travel and angle sensors on the basis of heterodyne interferometry for automated machining and assembly lines. The use of integrated micro-optical methods allows us to build compact and cost-effective sensors capable of achieving a definition of only a few nanometers. Absolute position detection is possible using synthetic holograms.

New coating methods prevent wear and corrosion

We improved the surfaces of steel tools and components by using an innovative method to apply a hard coating. With a combination of sputter metallization and ion radiation we obtain high-adherence titanium nitride and titanium boride coatings as well as wear-resistant titanium-boride-nitride coatings at workpiece temperatures of about 200 °C, a very low temperature for such processes. In this manner we obtain improved life expectancy and operation of highly stressed components.

Modern headlamp reflectors made of duroplastics are very deep. For this reason it is difficult to apply the reflective and protective coating. We obtained more even coatings and improved the reliability of the manufacturing process with the aid of a modified magnetic-field-guided plasma-coating method.

Adhesion is essential in ensuring the quality of protective coatings to reduce wear and corrosion. It depends on the pretreatment of the component surface and the manufacturing process. We evaluate the adhesive quality in accordance with a new method developed by us, with which a coating is alternately exposed to tension and compression. In the process, adhesion on the base material itself and within the coating is evaluated.

Design and simulation of application-specific integrated circuits

We developed analog behavioral models for application-specific integrated circuits (ASIC) to simulate major stages of electronic control units, as well as the connected sensors and actuators. This enables us to simulate the requirements of the performance specifications and to identify and eliminate errors, inconsistencies and incompleteness at an early stage.

Together with Intel Corporation, Santa Clara, CA, we developed two application-specific microcontrollers for automotive electronics in the Technical Center for Microelectronics in Reutlingen. The first functional samples are available.

One of the circuits also contains the wheel-speed sensor signal detection for antilock braking systems on the computer chip. The other circuit has a specific input circuit for the gasoline fuel-injection system, as well as an interface for the controller area network (CAN) developed by us, which makes a data exchange possible between the different ECU's in the vehicle. We also developed the CAN controller function in the form of a stand-alone component.

Communication through optical fibers

We are developing a coherent optical system to distribute TV signals in the subscriber area. A large number of light carriers are transmitted in short intervals to subscribers via glass fibers. Each light carrier can be modulated with a TV signal in a certain sequence. The information is evaluated by a laser-optical superheterodyne receiver, converted into microwave signals, and processed electrically. Compared to systems with direct reception, this method increases the transmission capacity by more than a hundredfold.

In order to transmit signals over a long distance, we are working on optical systems which allow direct amplification of light signals without first having to convert them to electrical signals as was the case with previous systems. The wanted signal is boosted with a laser – through induced emission of photons – in an erbium-doped section of glass fiber and the range is as much as quadrupled.

In order to use integrated optical components in communications technology and sensory analysis, glass fibers must be connected to optoelectronic chips. For this purpose, we developed a method with which the glass fibers are held in high-precision microstructure holders on the same silicone chip as the integrated optic-fiber cables.

We also made advances with innovative liquid crystal displays in connection with an ESPRIT Project. We obtain a significantly higher switching speed with ferroelectric liquid crystals and are also able to store information without applied voltage. We expect that such displays will be used in future stationary and mobile applications.

Greater use of communication systems

In addition to the networking possibilities, the market for private communication systems increasingly stipulates specific functions for the use of private telecommunication networks for different types of information (multimedia). In developing suitable interfaces and international recommendations for standardization we made progress in further expanding networking systems linking different locations.

We participated in projects on multimedia terminals for future broadband communication. In some areas of image processing, acquisition of information, and data maintenance, we were able to stage initial demonstrations of applications. Processing methods for video signals, especially for security applications are gaining in importance. In addition, processing of voice signals for voice detection, voice control and speaker identification is being applied. We are working on suitable terminals.

We are working on the ASC System (Adaptive Sound Control) to improve the quality of voice and music from the car radio. This system automatically covers driving noise and compensates for unfavorable transmission characteristics. The first sample units are being tested.

Improvement of manufacturing methods

To harden steel parts, we replaced the salt-bath method by the environmentally more compatible process gas method. For this purpose we developed systems for automated process control. In this manner we ensure uniform high quality of components.

The same applies to galvanic processes: We coat portions of valves with chromium using a screen method.

Automotive Equipment

Automotive Equipment Division 1

ABS, chassis systems and safety systems

Automotive Equipment Division 2

Lighting technology

Automotive Equipment Division 3

Management systems for gasoline engines

Automotive Equipment Division 4

Bodywork electrics and electronics

Automotive Equipment Division 5

Diesel fuel-injection equipment

Automotive Equipment Division 8

Semiconductors and electronic control units

Automotive Equipment Division 9

Starting motors and alternators, batteries

Automotive Aftermarket Division

Distribution of automotive equipment, after-sales service; Phutokino, Eisemann

Communications Technology

Mobile Communications Division
Car radios and accessories, on-board display systems, car antennas, mobile-radio technology, location-finding and navigation systems, entertainment electronics, broadband communications, public-address systems, medical electronics

Public Communications Division
Multiplex systems, co-axial and optical-fiber transmission systems, telecommunication cable systems, radio-relay and satellite systems, infrastructure for mobile radio systems, switching systems, network termination systems, special terminals (card telephones, cryptographic equipment), video-conference studios, avionics

Private Communications Division
Products and services for private networks, information systems, security systems

Consumer Goods

Bosch-Siemens Hausgeräte GmbH[1]
Electrical household appliances, entertainment electronics

Power Tools Division
Electric power tools for the trades, for industry, and for the do-it-yourself markets. Accessories

Junkers Division

Heating and hot-water equipment, heating-system controls, blower burners, gas controls, bathroom furniture

Capital Goods

Hydraulics and Pneumatics Division
Hydraulic and pneumatic products for mobile and stationary applications, electronic fluid-control technology

Industrial Equipment Division
Industrial electronics, assembly and handling equipment, deburring equipment, test equipment and technology

Synthetic and Metal Parts Division
Semi-finished products of thermosets, rubber, and thermoplastics; assemblies; rubber-metal connections; interference-suppression devices and connecting elements

Packaging Machinery Division
Packaging machines and equipment for foodstuffs and beverages, candies, pharmaceutical and chemo-technical products. Machinery for the production of candies and pharmaceutical products

(Status as of December 31, 1991)

1) Bosch ownership 50%

International automobile production decreased by about 4%. The decrease in North America was 9%, in Europe 6% and in Japan 2%. In contrast, German motor-vehicle production in the Old States of Germany increased by 1%. Declining exports were more than offset by domestic sales increases. Without the higher market volume in Germany, automobile production in Europe would have been even more unfavorable.

Our automotive equipment business sector increased sales by 3.3% to 16.6 billion DM.

Increased sales of single-point fuel-injection systems

In advance of the EC mandated emission standards as of 1993, the demand for closed-loop-controlled engine-management systems for gasoline engines increased even further. We increased sales of single-point fuel-injection systems by 70%. This increase was made possible by the start-up of production of the central injection unit in the Rodez Plant in South France in May 1991, as well as by the further expansion of our manufacturing capacity for electronic control units. We developed the Compact-Motronic in order to be able to supply cost-effective gasoline fuel-injection systems for vehicles with low-displacement engines.

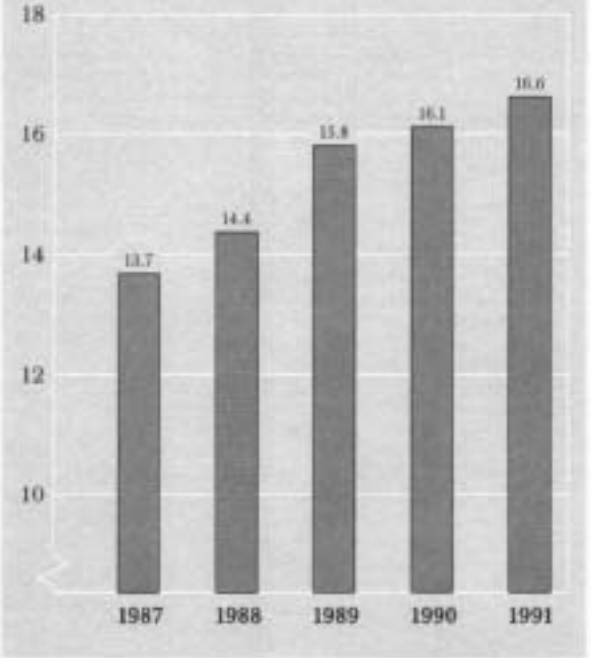
We started operating application-engineering centers in Japan and France.

In South Korea we also established a technical center which is being further expanded. We thus complied with customer demands that we provide development work near the customer.

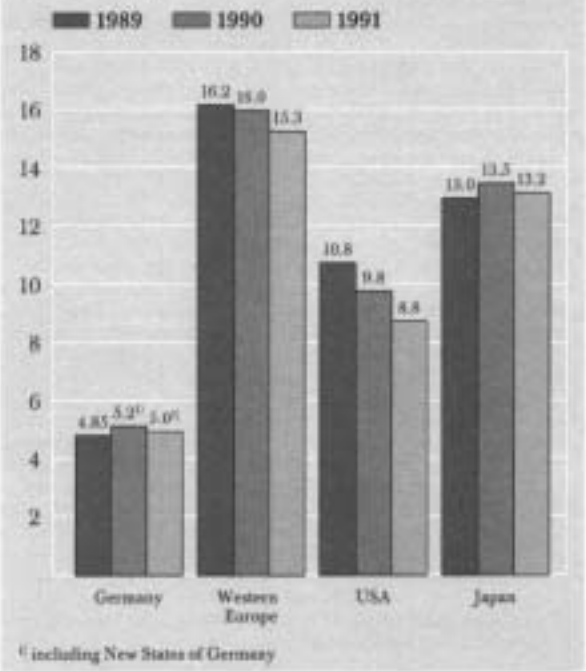
We are taking steps to meet the requirements of motor-vehicle manufacturers for pre-assembled functional units. For example, intake modules which comprise the intake manifold, fuel distributor and air filter, or in-tank units for electric fuel pumps.

Together with motor-vehicle manufacturers, we are developing systems capable of meeting

Bosch Group Worldwide
Sales of automotive equipment 1987–1991
(billion DM)



Automotive market
Production of motor vehicles in selected markets 1989–1991
(million units)



[1] including New States of Germany

the legal standards on monitoring a vehicle's exhaust-gas-relevant components, the so-called on-board diagnosis II (OBD II) which will become effective in coming years in the USA and in particular in California. The expenditures concerned are enormous.

We developed a multi-stage electromotive radial blower to further reduce the portion of pollutants in the exhaust especially during cold start. Direct post-oxidation is achieved, and the heat up of the catalytic converter during the engine's warm-up phase is accelerated by blowing fresh air into the exhaust stream.

The advantages of the electronic transmission control – improved driving comfort and lower fuel consumption – also lead to expectations of a considerable increase in the percentage of vehicles equipped with transmission control in Europe, the USA and Japan. We have been manufacturing electronic control units and actuators since 1983 for this purpose.

Since 1990 they have also been available for five-gear automatic transmissions. Our newly developed adaptive electronic transmission control offers additional advantages. It automatically adjusts itself to the driving behavior of the driver and to the traffic situation, and changes the shift characteristics of the transmission accordingly.

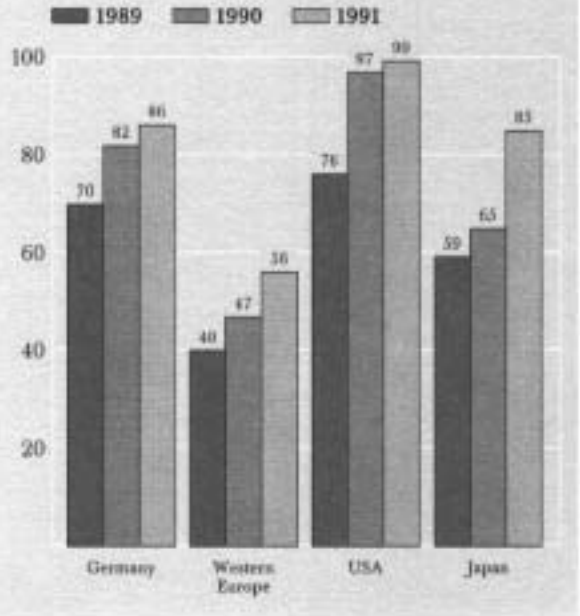
Greater demand for Antilock Braking Systems

The demand for antilock braking systems (ABS) for passenger cars continues to grow. Worldwide, 28 motor-vehicle manufacturers offer 108 basic models equipped with Bosch ABS. To a growing extent, this includes a combination with traction control (ASR).

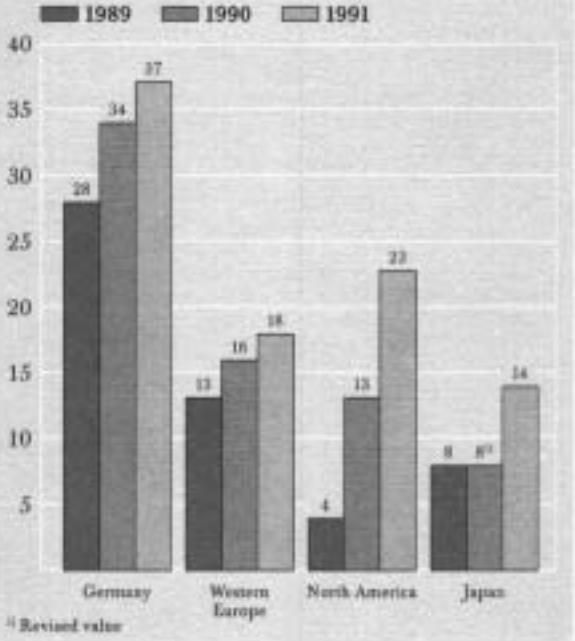
We received major orders for our products in North America, which in the meantime has become the largest ABS market worldwide.

Since the world market is increasingly demanding more cost-effective systems, we are

Automotive market
Share of gasoline-injection systems in the production of gasoline-engine motor vehicles in selected markets 1989–1991
(percentage)



Automotive market
Share of ABS-equipped * passenger cars in total passenger-car production in selected markets 1989–1991 (percentage)
* Antilock Braking System



working on the generations "ABS5" and "ABS/ASR5". These systems are expected to become a standard feature by the end of 1992 and are lighter and smaller. The ASR function is added at relatively low extra expense.

Worldwide demand is also increasing for commercial-vehicle ABS and ASR. We solidified our market position in Western Europe as well as in the USA, Japan and South Korea. We granted a license for ABS/ASR to a company in Czechoslovakia.

We developed a system with pressure modulators for intermediate-size commercial vehicles with compressed-air/hydraulic brake systems. The pressure modulators operate in the braking system's hydraulic stage. In this manner the conventional brake system can be retained. Mass production will be started soon.

We included a universally applicable ABS in our program for trailers. The electronic control unit can be mounted directly on the trailer frame.

Manufacture of trigger units for restraint systems for the North American and Japanese market

The market for passive restraint systems is growing, not only in the USA where it is legally required. Air-bag systems are also being used increasingly in Europe and Japan. In the future we will also offer our electronic trigger units with integrated acceleration sensors – in production since 1980 – on the North American and Japanese market from local production. We are preparing the production start-up in these countries.

To develop air-bag systems, we are cooperating with Morton International Inc., Ogden, Utah, a leading manufacturer of gas generators and air-bag modules.

Power steering for compact and intermediate-size vehicles

We are developing electrical power steering to be used in compact and intermediate-size cars. The compact unit is mounted directly on the steering gear. The system is characterized by low weight, and its low power consumption contributes to fuel savings. Experimental vehicles are ready for testing.

Start-up of series production of Litronic headlamp system

The Litronic headlamp system with gaseous-discharge lamp went into production. Bosch is the first manufacturer worldwide to equip vehicles with this lighting system which has 2.5 times the light intensity of conventional Halogen lights.

Increasingly the headlight-leveling control systems (LWR) mandatory in Germany are being used in vehicles registered abroad. We increased production in Malaysia to meet demand.

We expanded and modernized the plant in Brotterode/Thuringia acquired from the FER Fahrzeugelektrik GmbH in 1990. We have been supplying customers with headlamps from this plant since mid-1991.

We are expanding the output range of our compact alternators

We started large-scale production of compact alternators in our Cardiff Plant in South Wales at the beginning of 1991. By the end of the year 7 of our customers already equipped about 20 engine types with this alternator. The program contains three models covering the 0.8 to 2.0 kW output range. We are working on increasing the output range to 2.4 kW.

We developed a liquid-cooled alternator with a 3.1 kW output for top-of-the-line cars with high energy requirements. Cooling takes place in the bypass of the engine coolant circuit. This especially low-noise and long-life alternator is also suitable for future multi-voltage systems and is scheduled to become a standard feature within the next few years.

We envisage further weight reductions for starters and alternators

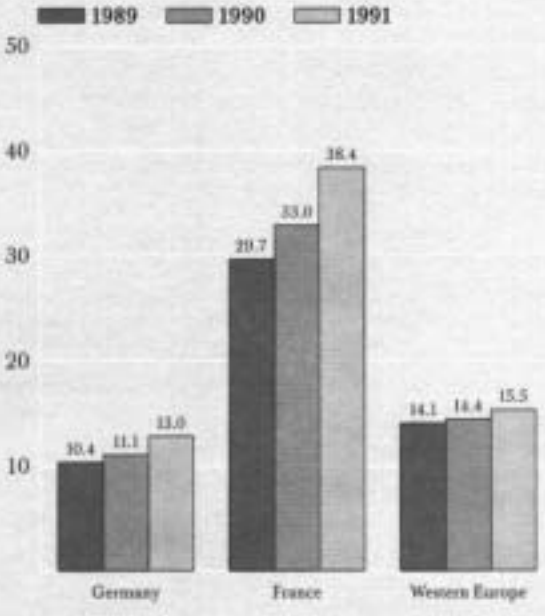
Our work continues to concentrate on making our starters and alternators even lighter. We succeeded in reducing weight significantly by introducing compact alternators, and starters using reduction gears. We see a potential for reducing the weight of starters and alternators by a further 10% to 20%.

Our electronic diesel control further reduces exhaust-gas pollutants

Diesel cars have again become more popular. As a result, demand for these vehicles increased despite a declining motor-vehicle market in Europe. In addition to high mileage, the reasons were the lower diesel-fuel price compared to gasoline, and tax advantages for diesel vehicles.

The number of cars equipped with electronic diesel injection increased again in 1991. Our injection system contributes to reducing the pollutants level in the exhaust gas and to more comfortable driving.

Automotive market
Share of diesel-engine passenger cars within newly registered passenger cars in selected markets 1989–1991
(percentage)



Diesel engines with direct injection contribute to a further reduction in fuel consumption. These engines which are being installed in more and more vehicles, require more accurate exhaust-gas recirculation and more precise timing than conventional diesel engines. For this purpose we started regular production of electronic diesel control (EDC) with air-flow sensing.

More stringent emission standards will apply to commercial vehicles in the EC as of 1993. We will exceed these standards through injection optimization.

Emission standards are to be tightened even further in the USA in 1994 and in the EC in 1996. In view of these developments we are continuing our efforts towards improving the performance of our products.

Simultaneously, for the new engine concepts we are developing new injection systems which are all electronically controlled. A key area are the so-called single-pump systems in which each cylinder has its own pump.

Large-scale production of rear-window wipers was started

We started regular production of our new rear-window wiper series in mid-1991, whereby we optimized the wiper motor regarding its size, weight and noise. The modular design enables us to quickly carry out application engineering for the various vehicle models at our customers.

Our new watertight front-wiper motors facilitate the arrangement and accommodation of the wiper system in the engine compartment.

A new configuration concept for electronics in the motor vehicle

We are developing various vehicle-body multiplex systems, both as subsystems for individual functions such as power seats, as well as for the entire vehicle. These systems reduce the

number of electrical connections in the vehicle, and result in space and cost savings, and in an increase in reliability.

New servomotors with integrated actuating electronics are being used with these systems. These servomotors are interconnected by a CAN bus system. This system for data transmission between several electronic control units was presented to the public for the first time in a production vehicle during the Geneva Auto Show in 1991.

Our automotive pre-development department is working on a new configuration concept for the entire electronics in the motor vehicle. The concept envisions a hierarchical modular structure with standardized interfaces between independently developed subsystems. Significant functional improvements are achieved through higher-level optimization. Thus transmission control, throttle-valve control and engine management can be interlinked with each other in such a way that fuel consumption is reduced without negatively impacting driveability.

Guidelines on the reduction in the number of ECU designs

We drew-up guidelines to reduce the number of existing and future electronic control unit designs. These guidelines ensure that future electronic control units are produced on production lines which are standardized as far as possible. We standardized design elements and specified a uniform sequence of operating cycles in production. Application-specific characteristics are not implemented until final assembly.

New power semiconductors with integrated additional functions

We are making increasing use of power transistors whose functions have been expanded and improved through additional integrated circuits. These "Smart Power" components are preferably used for monitoring and control functions as well as for diagnostics.

For our semiconductor manufacturing facility, we acquired proven MOS power technology from a leading semiconductor manufacturer. It is suitable for fast low-loss switches which can be integrated on a chip with additional peripheral functions. We are producing power switches of higher complexity in a mixed bipolar/MOS technology.

International service activities strengthened

We strengthened our international activities in the Automotive Equipment Aftermarket Division. We expanded the DP-supported marketing information system, made greater use of the compact diskette for technical information, and introduced a new method to reduce finished-goods inventories in the marketing organization.

Our aftermarket sales growth exceeded market growth. We continued the expansion of our sales and service organization in the New States of Germany. By year end, the number of Bosch service outlets there rose to 205. We solidified our position in foreign markets, especially in Southeast Asia and Japan. In North America we expanded our special service for electronic systems. We are continuing the expansion of our worldwide service organization.

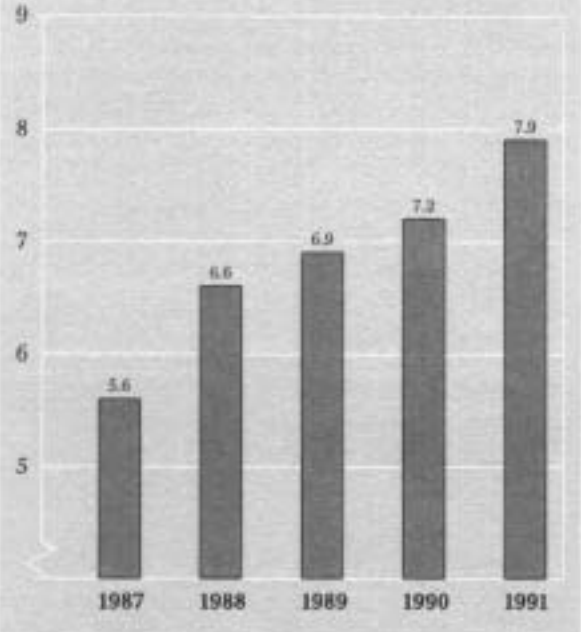
Service organization by continent 1991

	Workshops	Countries
Europe	5,688	27
North America	1,164	2
Central/South/ America	1,445	25
Australia/Oceania	610	9
Asia	659	26
Africa	269	32

The European communications-technology market experienced above-average growth especially because of the great demand for mobile radio-communication networks as well as telecommunication networks in the New States of Germany and in Eastern Europe. In contrast the demand for entertainment electronics decreased significantly.

Our communications technology business sector increased sales by 9.4% to about 7.9 billion DM.

Bosch Group Worldwide
Sales of communications technology 1987–1991
(billion DM)



Growth in mobile communications
Stagnation in entertainment electronics

The performance of the Mobile Communications Division was uneven. At the beginning of 1991, export sales, which had already started to decline in Fall 1990, were still offset by heavy domestic demand. Since the second quarter even domestic demand has declined noticeably. The division increased overall sales by 3.5%.

MotoMeter AG in which we acquired a 98% interest, increased sales by 3.5% to about 233 million DM. The company has about 1,400 employees in development, manufacturing and sales of on-board instruments for motor vehicles as well as test and control equipment.

Mobile Communications Division

Car radios and accessories, on-board display systems, car antennas, radio technology, location-finding and navigation systems, entertainment electronics, broadband communication, public-address systems and medical electronics

Production sites at Berlin, Braga, Herne, Hildesheim, Leonberg, Penang, Salzgitter, Vila Real, Wolfenbüttel

Employees:	17,320 (1990: 15,770)
Sales:	3.0 (2.8) billion DM*)
Investments:	134 (113) million DM*)

*) The 1990 figure does not include MotoMeter AG. 1991 figures are year-to-date (half).

Despite a slowdown in market growth, we consolidated our position as the leading manufacturer of car radios and accessories in Europe.

In the original-equipment field we started supplying French and Japanese customers with newly developed units and were thus able to increase our market share. In aftermarket products, the demand for units with radio data system (RDS) and compact-disc drives increased disproportionately. We launched the first car radio with an electronic directional antenna ADA (Auto Directional Antenna) developed by Blaupunkt. ADA gives excellent FM reception even under unfavorable conditions.

We expanded the development capacity at our German and foreign production sites in order to strengthen our competitiveness with car radios.

We increased the cost-effective production in our plants in Malaysia and Portugal. Domestic production was concentrated at Hildesheim.

Sales of mobile audio and video systems increased significantly in Germany especially from equipping ICE trains for the German railroad system.

The demand for electronic products declined in Europe. On the one hand backlog demand in the New States of Germany decreased, and on the other the purchasing power dropped in some West European countries due to the economic slowdown. As a consequence, we could not fully hold our sales of entertainment electronics at the previous year's level. We improved our position with camcorders and maintained our position with video recorders.

The highest growth was achieved in radio technology. Sales increased by about 17% and exceeded all expectations. We consolidated our leading position in Germany with mobile phones and two-way radios. In the area of industrial radio communication, the sales of systems to agencies and large customers as well as aftermarket sales of industrial communication and trunking equipment was brisk.

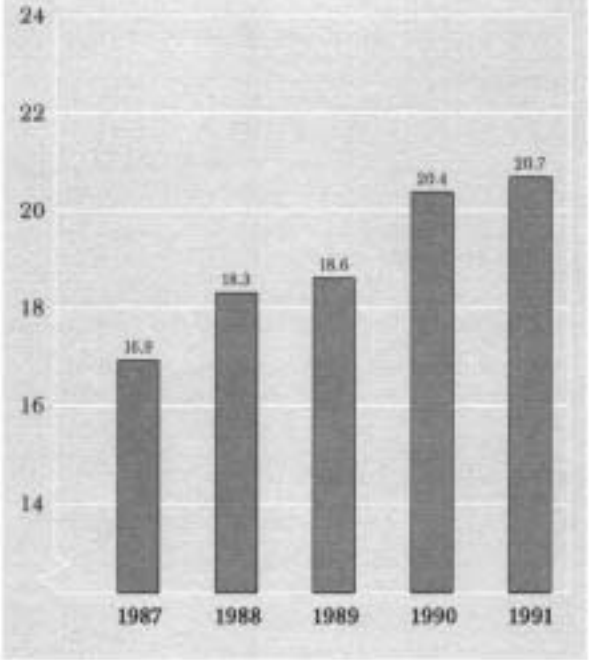
In the field of vehicle antennas, domestic original-equipment sales as well as mobile-radio antenna sales contributed to growth. Higher demand from the German Postal Service Telekom led to increased sales in the area of broadband distribution communication.

The Mobile Communications Division invested 192 (1990: 178) million DM on research and development.

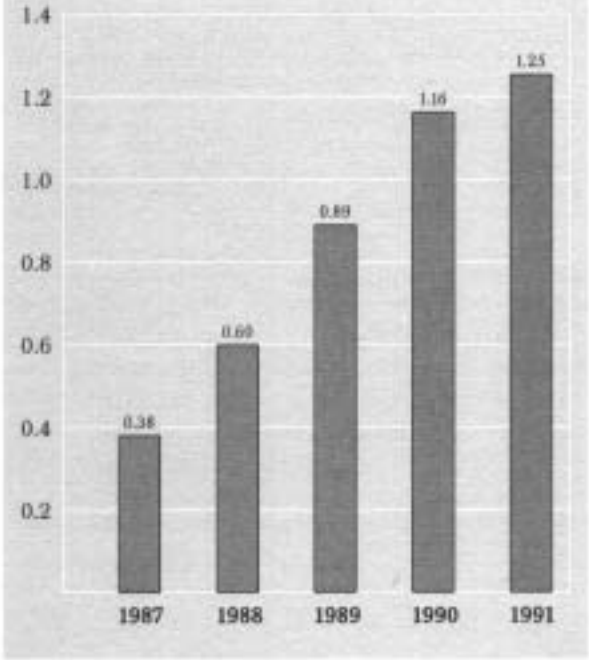
Consolidation phase in private communications technology

Competitive pressures due to excess capacity and the opening up of the market to new suppliers, increased again. Our Private Communications Division though, which includes Telenorma GmbH with domestic and foreign subsidiaries as well as JS Télécom SA in France and TTN Sistemi di Comunicazione SpA in Italy, increased sales by about 10%. The sales subsidiary Telenorma Leipzig GmbH which was consolidated for the first time contributed to this growth.

Car-radio market
European sales 1987–1991
(million units)



Mobile-telephone market
European sales 1987–1991
(million units)



The private-network product area, which accounted for over 70% of division sales, outpaced market growth.

More value was added in the area of software and services than in the production of hardware. We completed our technically advanced system family of ISDN-capable communication systems, which includes a full line of terminals, by adding additional features and user solutions. Projects to establish company-wide communication networks in Germany and abroad are becoming increasingly more important to us.

Private Communications Division	
Products and services for private networks, information and security systems	
Production sites at Brussels, Caracas, Frankfurt am Main, Landstuhl, Madrid, Monteceau-les-Mines, Munich, Rijswijk, Rödermark, Vienna	
Employees:	17,740 (1990: 17,180)
Sales:	2.7 (2.5) billion DM
Investments:	143 (106) million DM

We strengthened our position in Germany in the rapidly growing market for electronic security equipment. In addition to Telenorma's many years of experience in systems technology, this was attributable especially to product innovations and intensified marketing efforts. Telenorma is supplying security equipment for the Frankfurt Rhein-Main and Munich II airports. We also received a growing number of orders from Europe outside Germany.

The French company JS Télécom SA, the operations of which we control and which we are gradually incorporating into combined European development and manufacturing, expanded direct distribution and increased sales. We strengthened our business opportunities in Italy through the complete acquisition of TTN Sistemi di Comunicazione SpA. In order to take advantage of market opportunities in Eastern Europe, Telenorma established a regional subsidiary in Hungary and entered into a cooperative agreement with a partner in Czechoslovakia.

The Private Communications Division invested 200 (1990: 182) million DM in research and development. Operating results improved.

High investments in public communication networks

The great demand from the New States of Germany increased the demand for equipment for public communication networks. An additional boost came from orders from Germany and abroad for the infrastructure of the pan-European digital mobile radio network.

The Public Communications Division, which comprises ANT Nachrichtentechnik GmbH, Teldix GmbH and Bosch Telecom Öffentliche Vermittlungstechnik GmbH, increased sales by 13%.

Effective January 1, 1991, ANT acquired the radio-relay and data-technology operating unit from Robotron Telecom GmbH, Radeberg/Saxony, and incorporated it in the specially established subsidiary ANT Nachrichtentechnik Radeberg GmbH. This was an important prerequisite for adequate participation in the expansion of the telephone networks in the New States of Germany. About 700 people are employed in Radeberg.

Public Communications Division	
Multiplex systems, coaxial and optical-fiber transmission systems, telecommunication cable systems, radio-relay and satellite systems, infrastructure for mobile radio systems, switching systems, network termination systems, special terminals (card phones, cryptographic equipment), video-conference studios, avionics	
Production sites at Backnang, Heidelberg, Limburg, Offenburg, Radeberg, Schwäbisch Hall	
Employees:	8,879 (1990: 8,475)
Sales:	2.0 (1.7) billion DM
Investments:	114 (109) million DM

Once again the bulk of sales of ANT and Bosch Telecom Öffentliche Vermittlungstechnik

GmbH were conducted with the German Postal Service Telekom. With its radio-relay and glass-fiber systems, ANT contributed to the establishment of the digital telephone network in the New States of Germany and received orders to build three complete tandem exchanges and related local networks in Brandenburg (so-called turnkey projects). Bosch Telecom Öffentliche Vermittlungstechnik GmbH supplied the exchange systems, as well as installing and commissioning them.

In the future, communication transmissions will to a large extent be carried out using Synchronous Digital Hierarchy (SDH) systems. With such a system, it is a simple matter to insert or branch-off individual signal groups in a higher-order signal without it being necessary to demultiplex the entire signal.

Flexible and economical online operation is obtained in this manner. Early on, ANT developed modular multiplexers with branching, re-assign and cross-connect functions for this purpose, and supplied radio-relay equipment for networks in the New States of Germany and Switzerland.

In order to quickly establish connections in the subscriber area, ANT supplied 18 GHz short-distance radio-relay systems to the German Postal Service Telekom.

ANT developed the network node Ü 2000 to achieve effective network management of transmission-path selection. The first installations will be taken into operation in 1992.

Bosch Telecom Öffentliche Vermittlungstechnik GmbH increased sales with EWSD switching centers for the German Postal Service Telekom, and within a consortium won the annual bidding contest for deliveries in 1992.

To set up the digital mobile-radio networks D1 and D2 in Germany, we developed and supplied radio base stations, and modified EWSD switching centers as well as signalling methods for links between system components. The consortium DMCS 900 formed together with Philips Kommunikations Industrie AG, Nürnberg, also received orders from 8 European countries.

For private network operators and for export, we developed the system PCM 30 CC to transmit and switch digital signal trunks as well as a special multiplex and transmission system (DSLX 2/34). These supplement our earlier small switching system DIKOS 210 and the 7 GHz radio-relay system to form a system family tailored to private operator networks. With the development of a data-security system for in-house networks we created the prerequisites for the introduction of cryptography technology in the private market.

ANT received an additional license for voice transmission via VSAT networks. As a result the application options for ground stations with small-diameter satellite antennas increased. As a result of growing communication needs with the New States of Germany, VSAT sales were favorable.

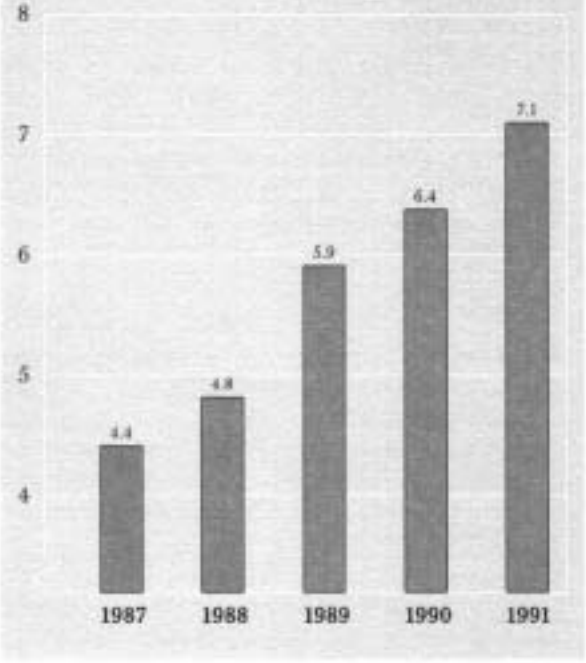
Our 40% interest in Signalbau Huber AG widens our business opportunities in the traffic-control area. So far our activities at ANT were concentrated on control systems for highways, large cities and densely populated areas. The related mobile terminal devices are developed and manufactured by the Mobile Communications Division.

The performance of Teldix GmbH continued to be influenced by the worldwide decline in demand for military products. The business with products for civil and industrial applications will be expanded further. A key area is the application of navigational equipment for civil aviation and navigation.

The Public Communications Division invested 275 (1990: 259) million DM in research and development. The operating result was satisfactory.

The consumer goods market continued to be favorable in 1991. Our consumer goods business sector increased its sales by 9.7% to 7.1 billion DM.

Bosch Group Worldwide
Sales of consumer goods 1987–1991
(billion DM)



Continued lively demand for electrical household appliances

Despite economic weaknesses in some countries, the Western European market for electrical household appliances increased by 5% to 45 billion DM.

The growth of the Bosch-Siemens Hausgeräte GmbH continued

Bosch-Siemens Hausgeräte GmbH continued the performance of past years. The company was able to increase consolidated sales by 6.7%. This increase was primarily attributable to Germany. The decline in demand from the New States of Germany which was expected by mid-year did not materialize.

The company increased sales in almost all product areas. Sales of dryers and microwave ovens recovered after showing weakness in previous years. Sales of refrigerators, washing machines, ranges, hoods, water heaters and boilers increased above average.

Bosch-Siemens Hausgeräte GmbH, Munich

Electric household appliances, entertainment electronics

Production sites at Athens, Berlin, Bretten, Estella, Dillingen, Giengen, Pamplona, Santander, Traunreut, Zaragoza

Capital stock:	240 (1990: 240) million DM
Equity interest:	50% Robert Bosch GmbH 50% Siemens AG
Employees:	23,640 (22,820)
Sales:	6.9 (6.5) billion DM
Export share of sales:	48 (50)%

Sales of electronic consumer products declined. It should be noted that the company achieved a high growth rate in the previous year because of pent-up demand from the New States of Germany and for the World Soccer Championship.

Investment in fixed assets increased to 293 (1990: 259) million DM. Investments in research and development increased to 136 (1990: 119) million DM.

The company improved its operating result. Allocations to reserves and dividend distributions were increased again.

The power tool division expands its position on the world market

In 1991 the power-tool market increased by 2% to about 10 billion DM. It stagnated at 70 million units.

Whereas demand in Germany and in the threshold countries of Southeast Asia contributed to market growth, developments in the remainder of Europe were moderate. Reces-

sion-related losses were experienced primarily in Great Britain and Scandinavia. In North America, market development also fell short of expectations. Sales of trade tools were above average.

The Power Tool Division improved its worldwide position with a sales increase of 7.5% to 2.3 billion DM. In the industrial-tools area, the sales of screw-running and press-in equipment increased disproportionately. The range of garden-watering equipment introduced in Fall 1990, gave an additional boost to the sales of power tools for outdoor use.

We further expanded our production site in Sebnitz/Saxony. We built a new plant in Derendingen/Switzerland to back-up production in Solothurn.

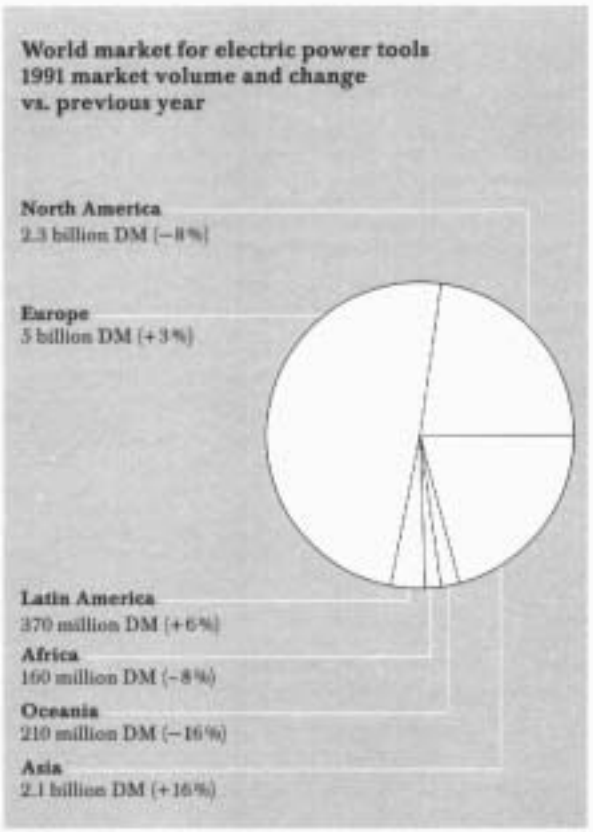
Booming sales at Junkers continue

Our Junkers Division increased sales by 47%. In Germany we profited from the lively economic trends in the building industry, as well as from the demand backlog from the New States of Germany. Outside Germany, we improved our competitive position by introducing new products, particularly in Portugal, Spain, and Turkey. The write-off possibilities for the modernization of central-heating installations, which were still in effect in Germany in 1991, provided an additional boost.

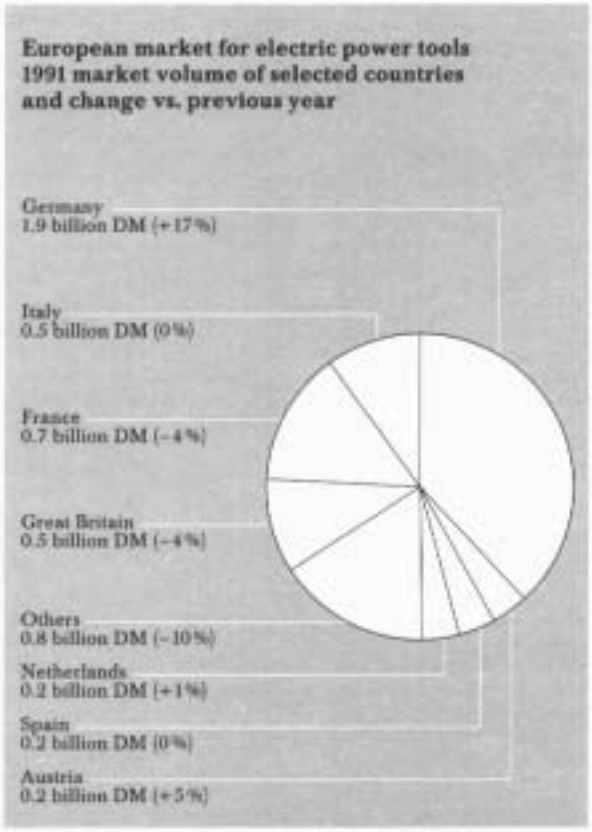
We continued our efforts to further reduce pollutants emission

We continued work on reducing the emission of pollutants by our products. With a new generation of gas-fired equipment, we were able to surpass the more stringent standards which came into effect on January 1, 1992, and obtained the "Blue Angel" environmental symbol.

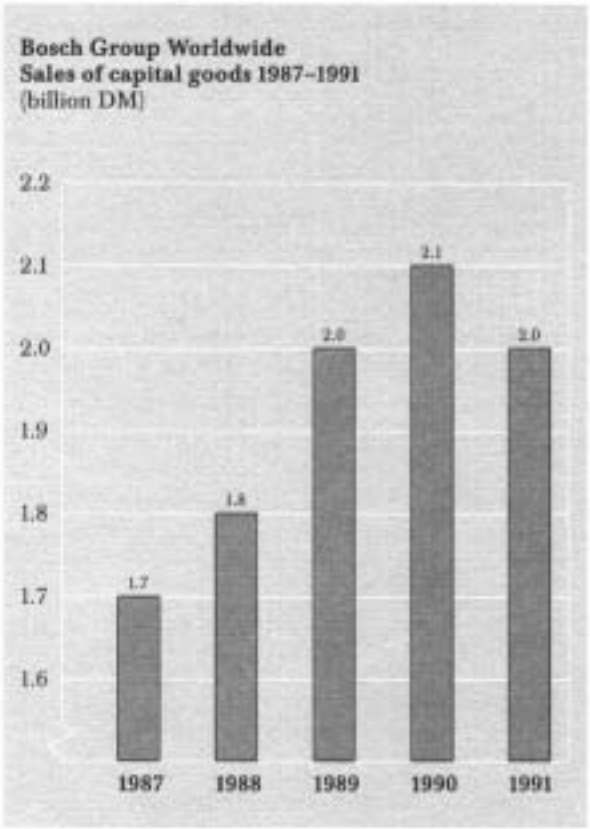
World market for electric power tools
1991 market volume and change vs. previous year



European market for electric power tools
1991 market volume of selected countries and change vs. previous year



1991 was a difficult year for the German mechanical-engineering industry. Our capital goods business sector suffered a sales decline of 3.2% to 2.0 billion DM.



Weakness in fluid technology

Sales in the hydraulic and pneumatic division fell short of expectations because of weakness in the mechanical-engineering industry. Low capacity utilization among many of our competitors was the reason for the increase in competitive pressure. In Germany and abroad, orders from important customer branches declined, in some cases significantly. In the New States of Germany, in which we continued expanding our distribution network, demand remained at a low level. On the whole, division sales fell below the previous year's level.

We further expanded the development network between our locations in Germany, France and the USA.

In the automotive hydraulic field we opened up new areas of application with small units for material-handling equipment. Our folding-top actuation for cars aroused interest with additional customers.

In the area of industrial hydraulics we improved our market position with electrohydraulically actuated components. Modular valves with integrated electronics as well as cylinders with built-in travel sensors opened up new applications, especially in the machine-tool industry. Our electrohydraulic control for punch presses and nibblers was well received.

In the pneumatic field we increased the share of customized valves and cylinders for the printing, textile and woodworking industry. We widened our standard product line by adding directional-control valves for sub-plate assembly and maintenance units. Our instructional and training systems were in demand.

Uneven trend in industrial equipment

Sales also fell short of expectations in the Industrial Equipment Division, and barely reached the previous year's level.

In the product group for industrial control electronics, declining orders from our machine-tool customers led to sales decreases with drives and numerical controls. The introduction of a control series with expanded functional range was only able to partially offset slow sales. Sales of programmable controls were stable. In several large-scale projects with the automobile industry, we introduced our new automation concept which combines operation, control and installation of transfer lines into an overall system. We strengthened our market position with welding controls.

Sales in the assembly and handling technology area were at the previous year's level. This reflected customer-investment restraints. Under the difficult economic conditions in the North American market, we succeeded in expanding our sales of modules for assembly engineering, whereby we benefitted from the expansion of our distribution network.

In the second half of the year, we introduced additional cost-effective products including a new robot generation, a family of handling units and a computer-controlled transport system. We received several large orders especially from the automotive industry.

In the area of deburring technology we intensified our development work with the aim of improving the environmental compatibility of our systems.

The sales of our test equipment product group increased. Pending legislation concerning the annual exhaust-gas emissions test, innovative products, and heavy demand from the New States of Germany in which we set up a distribution and service network, led to a higher volume of orders. Demand from abroad was weak due to the economic slowdown.

We expanded our product line and improved our competitive position by the addition of new dynamic brake analyzers, a new chassis dynamometer for vehicles with permanent four-wheel drive, new engine testers for medium-power engines, as well as testers to analyze diesel-engine exhaust gas.

Low sales of synthetic and metal parts

Due to the shutdown of the light-metal foundry in June 1991, sales of our Synthetic and Metal Parts Division declined further.

Rotating high-voltage distribution in the ignition systems for gasoline engines is increasingly being replaced by distributorless (static) coil ignition. This has led to a decline in demand for distributor caps and other duroplastic ignition parts which we were not yet fully able to offset through new applications for plastics.

We increased delivery of sub-assemblies made of plastic and metal parts and expanded our product line of ignition distributors, actuators and plugs. We started regular production of innovative plastic valves for vehicle-transmission control. We expanded the manufacturing capacity for valves to regenerate active charcoal filters (canister-purge valve).

Higher sales of packaging machinery

Our Packaging Machinery Division which is among worldwide leading suppliers increased its sales and strengthened its position. Western Europe represents the most important market making up 33% of the world market. We improved our position in the USA. In Japan, sales increased faster than the market as a whole.

We expanded our line of technically advanced equipment for the pharmaceutical industry by adding a compact ampule installation based on insulator technology, as well as an infusion bagging machine. In this manner we met the increasing demands placed on the purity and quality of drugs.

Our newly developed series of cartoning machines were well received by the market. These machines are characterized by an excellent cost-performance ratio, and by easy, user-friendly conversion to different packaging formats, as well as by using a method of operation which needs less packaging material. We were the first supplier to open up a new field with aseptic filling and sealing machines for durable milk in glass bottles.

We intensified the development and manufacture of machines in Brazil, Japan and the USA in order to secure export sales. We introduced cost-effective bag machines to meet the demand in these countries.

Bosch Group – Regional Subsidiaries[1)]

Europe

Belgium
Robert Bosch Produktie NV
Automotive equipment

Belgium
NV Robert Bosch SA[2)]

Denmark
Robert Bosch A/S[2)]

France
Robert Bosch (France) SA
Automotive equipment

France
Robert Bosch Electronique SA
Automotive equipment

France
Compagnie Parisienne d'Outillage à Air Comprimé SA
Hydraulics, pneumatics

France
JS Télécom SA
Private and public communications systems

Great Britain
Robert Bosch Ltd
Automotive equipment

Italy
Robert Bosch SpA[2)]

Norway
Robert Bosch A/S[2)]

Austria
Robert Bosch AG
Automotive equipment

Portugal
Robert Bosch Lda[2)]

Portugal
Vulcano Termo-Domésticos SA
Thermotechnology

Sweden
AB ROBO
Automotive equipment

Sweden
Robert Bosch AB[2)]

Switzerland
Robert Bosch AG[2)]

Switzerland
Scintilla AG
Electric power tools and saw blades

Spain
Robert Bosch SA
Automotive equipment

Turkey
Robert Bosch Motorlu Araçlar Yan Sanayi ve Ticaret AS
Automotive equipment

America

Argentina
Robert Bosch Argentina SA[2)]

Brazil
Robert Bosch Ltda
Automotive equipment, electric power tools, car radios, hydraulic products, packaging machinery

Brazil
WAPSA Auto Peças Ltda
Automotive equipment

Canada
Robert Bosch Inc.[2)]

Mexico
Robert Bosch SA de CV
Automotive equipment

USA
Robert Bosch Corporation
Automotive equipment, industrial equipment, packaging machinery

USA
Robert Bosch Power Tool Corporation
Electric power tools

USA
Weldun International Inc.
Industrial equipment

USA
Racine Fluid Power Inc.
Hydraulic components

USA
Airflow Research & Manufacturing Corporation
Automotive equipment

USA
Robert Bosch Capital Corporation
Finance-Holding

Asia, Africa, Australia

India
Motor Industries Co Ltd (MICO)
Automotive equipment, hydraulic products

Japan
Bosch K.K.[2)]

Malaysia
Robert Bosch (Malaysia) Sdn Bhd
Components for communications technology, automotive equipment, car radios

Singapore
Robert Bosch (South East Asia) Pte Ltd[2)]

South Africa
Robert Bosch (Pty) Ltd
Automotive equipment

Australia
Robert Bosch (Australia) Pty Ltd
Automotive equipment

Status as of December 31, 1991

1) Important companies in which Bosch holds a majority interest, either directly or indirectly
2) Sales and service for the divisions of the Bosch Group

1991 sales of our regional subsidiaries increased by 3.7% to a total of 13.9 billion DM. Adjusted for price changes and based on the respective currency, the growth amounted to 5.1%.

In the EC countries outside of Germany, the regional subsidiaries achieved a real sales growth of 5.3%. In the remainder of Europe, the growth rate was lower, and sales dropped by 1.1% in real terms.

The sales increase in North America amounted to 5.5% in real terms. The increase was mainly due to the level of our automotive original equipment business. In spite of the decrease in sales in Australia, combined sales of our companies in Africa, Asia and Australia showed a real growth rate of 2.4%.

Robert Bosch Internationale Beteiligungen AG, Zurich, our holding company for foreign interests, increased its financial investment portfolio to a total of 487 (1990: 481) million S.Fr. The company achieved a profit of 25 million S.Fr., the same as a year ago. Dividends to shareholders were increased to 20 million S.Fr. as compared to 17 million S.Fr. in 1990. As in the previous year, 3 million S.Fr. were transferred to reserves.

Europe

France

Economic growth in France continued to slow down. Investments and employment decreased. The downward trend of automobile production accelerated.

We increased our sales volume by 8.3% (7.5% in real terms). In particular, the start-up of production of gasoline fuel-injection equipment at the Rodez facility contributed to the increase.

Automotive original equipment business with French customers showed a small increase only. Sales of diesel fuel-injection equipment developed satisfactorily. Automotive aftermarket business also increased. We were able to expand our market position for electric power tools in spite of the retrogressive market.

Robert Bosch (France) SA, Saint-Ouen (Paris)

Manufacture of automotive equipment, hydraulic and pneumatic products, private communications technology products. Sales and service of Bosch products in France

Production sites at Bonneville, Mondeville/Caen, Montceau-les-Mines, Rodez, Rumilly, Vénissieux

Capital stock:	350 (1990: 320) million F.Fr.
Equity interest:	100 (100)%
Employees:	5,670 (5,639)
Export share of sales:	41 (35)%

Effective January 1, 1991 Robert Bosch (France) SA assumed responsibility for the sales and service of Blaupunkt car radios as well as of products for entertainment electronics. The company entered the original equipment market for car radios.

At the Mondeville/Caen facility we increased capacities. We began production of electronic controls for gasoline fuel-injection for the French market and other customers in Europe.

Compagnie Parisienne d'Outillage à Air Comprimé SA expanded its product program. In order to improve its competitive position, the company developed additional lines of industrial cylinders in accordance with international standards, and devices for position controls.

Great Britain

The economic environment in Great Britain worsened. Gross National Product declined by 2%. As the rate of inflation declined from 10% to 6%, unemployment increased from 6% to 8%. In spite of high export volume, automobile production fell below last year's level.

The activities of our company centered mainly on the start-up of the production at the compact-alternator factory in Cardiff.

Robert Bosch Ltd, Denham	
Manufacture of automotive products. Sales and service of Bosch products in Great Britain	
Production site at Cardiff	
Capital stock:	48.3 (1990: 20) million £
Equity interest:	100 (100) %
Employees:	835 (535)

Sales of the company increased by 11% (8% in real terms). The business with original equipment customers, and the sale of aftermarket products in the automotive sector increased. The generally weak demand impacted the sales of electric power tools. The decrease of new-car registrations affected sales of car radios.

Italy

The Gross National Product of Italy increased by only 1%. This translated into a 50% lower growth rate. Investments declined. The slow growth was carried mainly by private and state consumption.

Robert Bosch SpA, Milan	
Sales and service of Bosch products in Italy	
Capital stock:	33 (1990: 33) billion Lit.
Equity interest:	100 (100) %
Employees:	355 (330)

The company increased sales nominally by 4.8% (real terms: 2.7%). The continuing decline in automobile production resulted in somewhat lower sales of automotive original equipment in comparison to the previous year. The decline in gasoline fuel-injection equipment and alternators was almost compensated for by increases in sales of diesel fuel-injection equipment and headlamps. Sales of automotive aftermarket products increased as well as sales of household appliances, television sets and video equipment, and products in thermo-technology.

Austria

The aftermarket sales of our company increased due to a generally favorable economic climate. On the other hand, the civil war in Yugoslavia and a decline of work at the Hallein factory resulted in losses. Total sales, therefore, did not quite reach the previous year's level.

Robert Bosch AG, Vienna	
Manufacture of diesel fuel-injection equipment. Sales and service of Bosch products in Austria and Eastern Europa	
Production site at Hallein	
Capital stock:	200 (1991: 121) million ö.S.
Equity interest:	100 (100) %
Employees:	1,290 (1,245)
Export share of sales:	31 (31) %

Sweden

Employment problems arose as a consequence of the recession in Sweden. A weak domestic market and receding export demand impacted the Swedish automobile production.

Robert Bosch AB, Kista (Stockholm)	
Manufacture of headlamps and lighting equipment. Sales and service of Bosch products in Sweden	
Production site at Linköping	
Capital stock:	40 (1990: 40) million S.Kr.
Equity interest:	100 (100) %
Employees:	580 (655)

Our company suffered a sales decrease of 7.2% (10% in real terms), although it gained market shares in some product areas, e.g. in automotive products and household appliances. Headlamp production was adjusted to reflect the drop in demand.

Switzerland

Real Gross National Product declined for the first time since 1983. Investment activity in industry and in the building sector was hampered by the continuing high interest rates.

Scintilla AG increased sales by 8.4% (6.3% in real terms). The increase was achieved mainly by German demand. While overseas sales also rose slightly, sales in the remainder of Western Europe declined.

Scintilla AG, Solothurn	
Manufacture of electric power tools and saw blades	
Production sites at Solothurn, St. Niklaus (Wallis)	
Capital stock:	36 (1990: 36) million Sw.Fr.
Equity interest:	84.8 (84.8)%
Employees:	2,280 (2,220)
Export share of sales:	97 (97)%

The growth was achieved mainly by sales of accessories, since electric power-tool sales did not increase as strongly as in the previous year.

Production capacities in both factories were fully utilized. Beginning in early 1992 we started operations in a new facility into which we moved manufacturing units which had up to then been operating on rented premises.

The sales company Robert Bosch AG, Zurich, suffered a sales decline of 2.4% (5.2% in real terms). Household appliances achieved an increase in sales. Business in car radios and automotive aftermarket products stagnated. Sales of electric power tools, industrial equipment, and mobile telephones were lower than in the previous year.

Spain

The 2.5% real growth of the Spanish economy was lower than in the previous year. Industrial production fell by 1.5%. Spurred by high exports, the production of automobiles increased. Production of commercial vehicles dropped.

Sales of our company almost reached the previous year's level. The strong increases in sales of thermo-technology products did not quite compensate for the sales declines of electric power tools and entertainment electronics.

Robert Bosch SA, Madrid	
Manufacture of automotive equipment. Sales and service of Bosch products in Spain	
Production sites at Alcalá de Henares, Aranjuez, Castellet, Guardamar, La Carolina, Madrid, Treto	
Capital stock:	14.9 (1990: 13.6) billion S. Ptas
Equity interest:	100 (100)%
Employees:	5,470 (5,655)
Export share of sales:	48 (59)%

We continued the restructuring processes which were begun in prior years. The production of starter batteries, which we concentrated at the Guardamar location, was merged into the joint venture with Varta Batterie AG effective January 1, 1992.

America

United States of America

The business of our company was impaired by the continuing weak economic trend in the USA and the increased competition in all markets. Production capacities were not fully utilized, however we were able to increase sales by 2.9% (5.1% in real terms).

Automobile production in North America fell to its lowest level since 1984. In spite of this development, our sales of ABS systems and fuel-injection equipment for gasoline and diesel engines increased. In accordance with our long-range goals, we increased the depth of production in the USA. In addition, we took measures to increase export sales.

The automotive aftermarket business was affected by the generally low demand and the continued decline of European car imports. It is planned to introduce a new line of mobile telephones for 1992.

Robert Bosch Corporation, Broadview, IL	
Manufacture of automotive equipment, hydraulic equipment, industrial equipment, packaging machinery, and electric power tools. Sales and service of Bosch products in the USA	
Production sites at Anderson, SC, Atlanta, GA, Belleville, MI, Bridgman, MI, Buchanan, MI, Charleston, SC, Madison Heights, MI, New Bern, NC, Racine, WI, Zanesville, OH	
Capital stock:	100 (1990: 100) million US-$
Equity interest:	100 (100)%
Employees:	5,130 (5,115)

Due to the weakness in building construction, sales of electric power tools dropped below prior year's level. Sales of hydraulic and pneumatic products also declined. On the other hand, sales of packaging machinery and flexible assembly systems increased.

In order to reduce its dependency on imports, Racine Fluid Power Inc. increased the share of in-house production. By combining production of customer-specific hydraulic block units at Zanesville, OH, we were able to close the Southpoint, OH, facility.

Robert Bosch Corporation invested 61 million US-$ (1990: 89 million US-$) in tangible fixed assets.

Mexico

Mexico is on the threshold of a new growth phase. In 1991, the Gross National Product increased by 4.5%. The automobile industry, which increased production by 15% in 1991, is the driving force behind the country's economic activities.

Effective January 1, 1991, the manufacturing company Automagneto SA de CV acquired the business activities of the trading company Robert Bosch SA de CV. At the same time, Automagneto changed its name to Robert Bosch SA de CV.

Robert Bosch SA de CV, Toluca	
Manufacture of automotive equipment. Sales and service of Bosch products in Mexico	
Production site at Toluca	
Capital stock:	24 billion Mex.$
Equity interest:	93.3%
Employees:	2,160
Export share of sales:	9%

The strong expansion of the Mexican automobile industry enabled the company to increase sales by 26% (6.4% in real terms). Production capacities were fully utilized and will be expanded. We improved our market position for aftermarket sales.

Brazil

The realignment of the Brazilian economic policy curbed the inflation only briefly. Brazil made slight progress with the privatization of state-owned enterprises and with the liberalization of foreign trade.

Robert Bosch Ltda, Campinas	
Manufacture of automotive equipment, hydraulic products, electric power tools, car radios, and products in testing and measuring technology. Sales and service of Bosch products in Brazil	
Production sites at Aratú, Campinas, Curitiba, Manaus	
Capital stock:	80.6 (1990: 4.2) billion Cr$
Equity interest:	100 (100)%
Employees:	12,620 (13,570)
Export share of sales:	18 (12)%

The automobile industry was able to even out earlier declines in sales and production. Automobile production increased by 5%.

Our company achieved a real sales increase of 2.1%. During the Fall of 1991, the first Bosch-ABS equipped passenger cars were introduced to this market. Together with Digilab Laboratorio Digital SA, São Paulo, the company founded a new joint venture, in which it holds a 49% share, for the production and sale of digital assemblies for fuel-injection and ignition systems.

Production of car radios was concentrated at the Manaus location.

Asia, Africa, Australia

India

Motor Industries Co Ltd (MICO), Bangalore	
Production of automotive equipment, hydraulic products and special machinery. Sales and service of Bosch products in India	
Production sites at Bangalore, Nasik, Naganathapura	
Capital stock:	380 (1990: 380) million ind. Rs.
Equity interest:	51 (51)%
Employees:	9,890 (9,475)
Export share of sales:	11 (9)%

Sales increased 27% (5% in real terms) due to the large demand for automotive original equipment as well as for aftermarket products.

Japan

The Japanese economy also experienced a downward tendency. However, real economic growth still amounted to 4%. Restrictive monetary and credit policies weakened domestic demand.

Aftermarket sales did not meet our expectations. We were able to expand our market position in electric power tools.

We intensified our contacts with the Japanese automobile industry. Our application-engineering center in Yokohama was opened on schedule in June 1992.

Bosch K.K., Tokyo	
Sales and service of Bosch products in Japan	
Capital stock:	6.5 (1990: 5.8) billion Yen
Equity interest:	100 (100)%
Employees:	360 (315)

Malaysia

To a great extent, Malaysia was able to maintain its strong growth of the previous years. The Gross National Product increased by 8%. The upward price trend accelerated to 4.5%.

Robert Bosch (Malaysia) Sdn Bhd, Penang	
Manufacture of automotive equipment, car radios, car speakers and electronic assemblies	
Production site at Penang	
Capital stock:	15 (1990: 15) million M.$
Equity interest:	100 (100)%
Employees:	3,825 (3,505)
Export share of sales:	91 (89)%

The company again raised production of car radios and increased sales by 16% (14% in real terms). We invested heavily in automated components-insertion technology and installed central data processing. In addition, we began construction of a building to accomodate the expanded development department.

South Africa

In South Africa the recession continued. New-vehicle registrations dropped.

Robert Bosch (Pty) Ltd, Johannesburg	
Manufacture of automotive equipment. Sales and service of Bosch products in South Africa	
Production site at Brits	
Capital stock:	17.1 (1990: 15.1) million R
Equity interest:	64 (64) %
Employees:	1,070 (1,060)

The company was able to maintain its market position. The production of electronic control units began. In spite of depressed prices, aftermarket business expanded.

We introduced the direct supply of aftermarket merchandise from Germany to Bosch central distributors.

South Korea

Due to strong economic growth, Bosch Korea Ltd, Seoul, experienced a strong demand for automotive original equipment and aftermarket products. During mid-year we occupied our applications-engineering and service center.

Australia

Robert Bosch (Australia) Pty Ltd, Clayton (Melbourne)	
Manufacture of automotive equipment. Sales and service of Bosch products in Australia and New Zealand	
Production site at Clayton (Melbourne)	
Capital stock:	24 (1990: 22.5) million A.$
Equity interest:	100 (100) %
Employees:	1,400 (1,580)

The Australian economy is experiencing the worst recession in many years. New registrations and production of motor vehicles fell. Manufacturers had to adjust their operations. Sales of our company did not meet expectations.

Consolidated Balance Sheet as of December 31, 1991

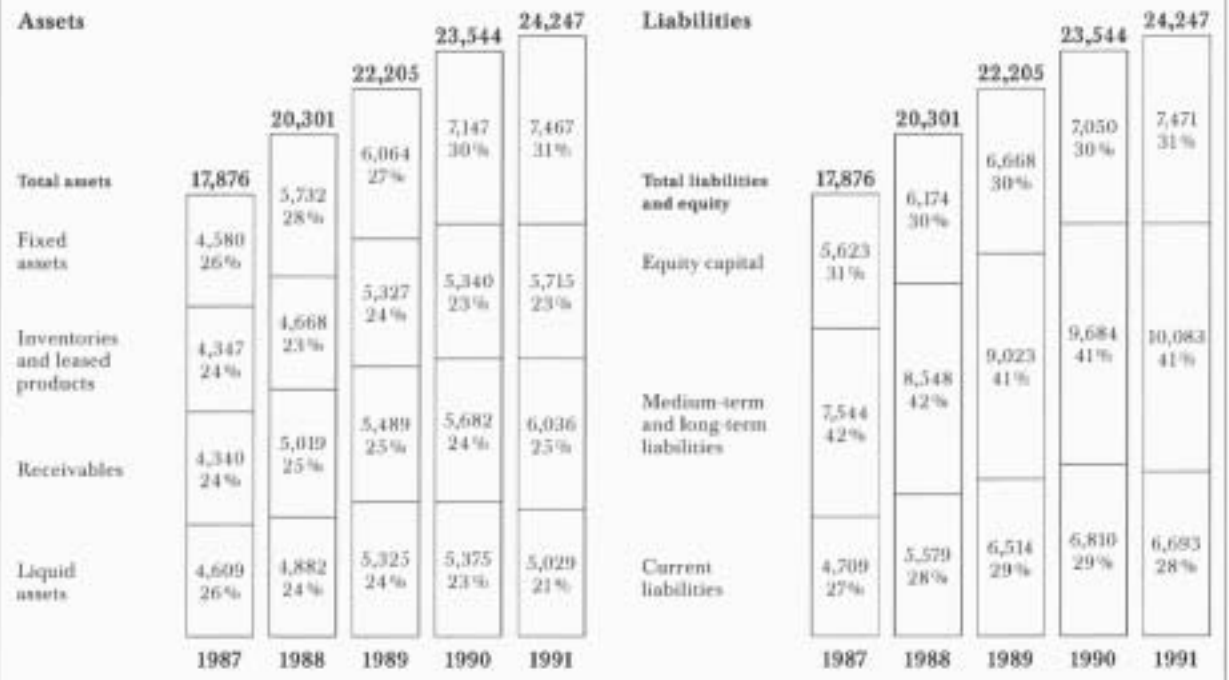
ASSETS	December 31, 1991		*December 31, 1990*
	million DM	million DM	*million DM*
FIXED ASSETS			
Intangible fixed assets			
Concessions, patents, trademarks and similar rights and assets as well as licenses on such rights and assets	132.0		*183.3*
Goodwill	361.2		*494.9*
Advance payments	6.0		*6.5*
	499.2		*684.7*
Tangible fixed assets			
Land, leasehold rights and buildings, including buildings on land owned by others	2,161.0		*1,987.5*
Production equipment and machinery	1,561.0		*1,480.1*
Other equipment, fixtures and furniture	2,037.0		*1,936.2*
Advance payments and construction in progress	635.0		*587.2*
	6,414.0		*5,991.0*
Financial investments			
Investments in affiliated companies	45.3		*39.0*
Loans to affiliated companies	2.3		*1.4*
Investments in associated companies	262.2		*217.0*
Other financial investments	77.9		*52.8*
Other loans	166.3		*161.4*
	554.0		*471.6*
		7,467.2	*7,147.3*
CURRENT ASSETS			
Leased products	1,098.1		*1,088.4*
Inventories	5,166.1		*4,819.6*
Advance payments made	52.7		*39.7*
Advance payments received	−602.0		*−607.6*
	4,616.8		*4,251.7*
Accounts receivable and other assets			
Trade accounts receivable	4,938.5		*4,553.1*
Receivables from affiliated companies	152.4		*55.0*
Receivables from companies in which interests are held	66.5		*139.7*
Other assets	909.5		*983.5*
	6,066.9		*5,731.3*
Marketable securities			
Treasury stock (face value 23.0 million DM)	40.7		*40.7*
Other securities	2,816.9		*2,960.4*
	2,857.6		*3,001.1*
Checks, cash on hand, in Federal Reserve Bank, postal checking accounts and cash in banks	2,104.4		*2,289.3*
		16,743.8	*16,361.8*
DEFERRED EXPENSES		36.3	*34.7*
		24,247.3	*23,543.8*

LIABILITIES	December 31, 1991		*December 31, 1990*
	million DM	million DM	*million DM*
EQUITY CAPITAL			
Capital stock	800.0		*800.0*
Earned surplus	6,153.2		*5,727.2*
Unappropriated earnings	42.5		*42.5*
Minority interests	475.7		*480.4*
		7,471.4	*7,050.1*
ACCRUALS WITH VALUATION RESERVE PORTION		289.0	*366.6*
ACCRUALS			
Accrued pensions and similar obligations	4,291.6		*3,944.5*
Accrued taxes	274.5		*185.6*
Other accruals	6,447.3		*6,160.4*
		11,013.4	*10,290.5*
LIABILITIES			
Loans	112.8		*117.4*
Liabilities with banks	1,798.2		*2,156.2*
Accounts payable trade	1,413.9		*1,433.6*
Notes payable and acceptances	36.5		*40.7*
Payables to affiliated companies	219.8		*129.8*
Payables to companies in which interests are held	39.9		*24.8*
Other liabilities	1,833.0		*1,910.8*
		5,454.1	*5,813.3*
DEFERRED INCOME		19.4	*23.3*
		24,247.3	*23,543.8*

Consolidated Statement of Income for the period from January 1 to December 31, 1991

	1991		*1990*
	million DM	million DM	*million DM*
Sales		33,600.4	*31,823.7*
Increase/Decrease in finished goods and work in progress inventories		196.6	*– 2.8*
Other capitalized costs		262.8	*330.5*
Total operating performance		34,059.8	*32,151.4*
Other operating income		1,446.0	*1,436.6*
Costs of materials			
Raw materials, supplies and merchandise	– 13,366.2		*– 12,196.8*
Purchased services	– 1,131.7		*– 1,214.7*
		– 14,497.9	*– 13,411.5*
Personnel costs			
Wages and salaries	– 9,249.2		*– 8,664.9*
Social security, pension plans and support payments	– 2,153.5		*– 2,052.6*
		– 11,402.7	*– 10,717.5*
Depreciation of intangible and tangible fixed assets		– 2,145.1	*– 1,948.1*
Other operating expenses		– 5,489.8	*– 5,590.5*
Income from affiliated companies		11.7	*11.1*
Expenses from loss transfers		– 82.8	–
Income from long-term financial investments		7.9	*7.4*
Other interest and similar income		457.6	*456.2*
Loss from interests in associated companies		– 48.9	*– 40.1*
Amortization of financial investments and securities included in current assets		– 94.7	*– 106.8*
Interest and similar expenses		– 309.5	*– 315.8*
Income from ordinary activities		1,911.6	*1,932.4*
Taxes on income		– 1,159.3	*– 1,117.1*
Other taxes		– 212.3	*– 255.7*
Net income of the year		540.0	*559.6*
(including profits attributable to other shareholders)		(48.3)	*(46.7)*
(including loss allotable to other shareholders)		(3.6)	*(5.6)*

Bosch Group Worldwide
Balance Sheet Structure 1987–1991 (million DM and in %)



1991 Development of Fixed Assets

	Cost of acquisition or manufacture as of Jan. 1, 1991 million DM	Changes in the consolidated group million DM	Additions million DM
Intangible fixed assets			
Concessions, patents, trademarks and similar rights and assets as well as licenses on such rights and assets	589.9	5.3	87.1
Goodwill	847.9	2.8	72.3
Advance payments	6.4		1.9
	1,444.2	8.1	161.3
Tangible fixed assets			
Land, leasehold rights and buildings, including buildings on land owned by others	3,702.7	61.3	199.3
Production equipment and machinery	5,455.6	110.4	632.4
Other equipment, fixtures and furniture	7,325.2	69.0	932.8
Advance payments and construction in progress	646.1	9.0	508.3
	17,129.6	249.7	2,272.8
Financial investments			
Investments in affiliated companies	61.6	−5.9	76.8
Loans to affiliated companies	1.4		1.2
Investments in associated companies	311.4	−28.0	129.8
Other financial investments	122.1		36.5
Other loans	163.8	0.2	26.7
	660.3	−33.7	271.0
	19,234.1	224.1	2,705.1

Transfers	Retirements	Cost of acquisition or manufacture as of Dec. 31, 1991	Depreciation cumulative to Dec. 31, 1991	Net book value as of Dec. 31, 1991	Depreciation current year	Write-ups current year
million DM	million DM	million DM	million DM	million DM	million DM	million DM
2.2	92.0	592.5	460.5	132.0	137.7	
		923.0	561.8	361.2	208.8	
−2.2	0.1	6.0		6.0		
	92.1	1,521.5	1,022.3	499.2	346.5	
131.1	54.0	4,040.4	1,879.4	2,161.0	167.6	
152.8	283.2	6,068.0	4,507.0	1,561.0	672.0	0.1
155.5	459.5	8,023.0	5,966.0	2,057.0	915.0	
−439.4	15.9	708.1	73.1	635.0	44.0	3.2
	812.6	18,839.5	12,425.5	6,414.0	1,798.6	3.3
9.0	2.6	138.9	93.6	45.3	67.7	
	0.3	2.3		2.3		
−23.6	41.7	347.9	85.7	262.2	27.4	
14.6	0.6	172.6	94.7	77.9	10.4	
	21.9	168.8	2.5	166.3	0.1	
	67.1	830.5	276.5	554.0	105.6	
	971.8	21,191.5	13,724.3	7,467.2	2,250.7	3.3

Statement of Changes in Financial Position in 1991

Source of Funds	million DM	Application of Funds	million DM
Financing from internal sources		*Increase in funds*	
Decrease in assets			
Tangible and intangible fixed assets	2,197	Tangible and intangible fixed assets	2,434
Financial investments	189	Financial investments	271
Cash at banks, securities	328	Inventories, leased products	375
	2,714	Accounts receivable and other assets	337
			3,417
Other internal financing			
Transfers to surplus accounts	421		
Increase in accruals	723	*Repayment of debts*	
1991 dividend	43	Liabilities	363
	1,187	1990 dividend	43
			406
		Decrease of accruals with valuation reserve portion	78
	3,901		3,901

General remarks

The consolidated financial statements of Bosch Group Worldwide conform to the regulations of the Commercial Code.

In order to ensure better understanding of these financial statements, we included, as required, additional comments pertaining to individual items in the balance sheet and the profit and loss statements. The consolidated profit and loss statement follows the format of the total cost method.

The consolidated group

The consolidated statements include Robert Bosch GmbH and 19 domestic as well as 64 foreign subsidiaries. For the first time, we included Telenorma Leipzig GmbH, Motometer AG and its Portugese subsidiary Motometer Portuguesa Lda, as well as the production operations of Robert Bosch de CV in Mexico (formerly Automagneto SA de CV).

The consolidated statements of Bosch-Siemens Hausgeräte GmbH were included pro rata pursuant to Section 310 of the Commercial Code.

In accordance with Section 296 of the Commercial Code, second Paragraph, companies lacking operations or having insignificant business volume were not included with the consolidated statements.

In the case of relief-fund institutions, we waived inclusion pursuant to Section 296, Paragraph 1, digit 1 of the Commercial Code.

The equity valuation of significant interests in associated companies was applied in accordance with the book-value method. This valuation method pertained to 5 domestic and 9 foreign companies.

Principles of classification and evaluation

The financial statements of Bosch Group Worldwide, include the individual statements of our subsidiaries which conform to our uniform principles of classification.

We adhered to evaluation of lower of cost or market, and imparity of gain and loss recognition. Assets were never valued in excess of acquisition cost or cost of manufacture.

The financial statements of one foreign associated company were modified to comply with the uniform consolidation principles of the Consolidated Group. The remaining financial statements were not subjected to change.

Currency translation

Accounts receivable and accounts payable stated in foreign currencies were, in principle, converted to DM equivalents at the lower of the exchange rate at the date of origin or at the balance-sheet date in compliance with the imparity of gain or loss principle. Anticipated losses of foreign-currency contracts were provided for by corresponding accruals.

For the conversion of the statements of our foreign subsidiaries to DM, we applied, in principle, average exchange rates at the balance-sheet date. Transactions pertaining to fixed assets were converted at mean average quarterly or annual DM equivalents respectively. Resulting differences were included with beginning balances of cost of acquisition or manufacture as well as in cumulative depreciation.

Tangible fixed assets of our subsidiaries in Brazil were valued at their original carried-forward DM equivalents of cost of acquisition or manufacture. Depreciation is based on historical values. As in the past, the equity capital of these companies are also stated at historical DM equivalents.

Income and expenses were converted at average annual or quarterly exchange rates as published by the German Federal Reserve Bank. Differences resulting from the application of annual exchange rates versus year-end exchange rates were included with other expenses.

Consolidation principles

For capital-consolidation purposes, we applied

the book-value method at the date of acquisition or at the date of first-time consolidation for such companies that were subject to first-time consolidation. Differences resulting from amounts not subject to consolidation were included by adjustment of earned surplus accounts.

Profits and losses from sales/transfers of fixed assets within the Consolidated Group were eliminated. Inventory values reported in the consolidated statements were based on cost of manufacture within the Group. The principle of the lower of cost or market was adhered to.

Profits from sales to the Consolidated Group by associated companies were not eliminated since these were either insignificant or conclusive records were not available. Loans and receivables and corresponding accruals and liabilities within the Consolidated Group were offset. The same method applied also to sales, revenues and expenditures. Tax liabilities resulting from consolidation measures in the amount of 1.7 million DM were provided for.

Fixed assets

Intangible fixed assets including goodwill from first-time consolidation of acquired interests were stated at cost of manufacture or acquisition less applicable depreciation.

Depreciation was taken according to plans in either linear or accelerated modes. Low-cost items were fully depreciated during the year of acquisition. In addition, we made full use of special depreciation allowances in all host countries.

Extraordinary depreciation in the amount of 267 million DM pertained mostly to capitalized goodwill during the process of first-time consolidation.

In accordance with tax regulations, we deducted 130 million DM directly from the acquisition cost of tangible fixed assets. The depreciation was taken pursuant to Sections 6b and 7d of the Income Tax Law, Section 82a of the Income Tax Regulations, Section 3 of the Law for the Promotion of the Economy of the Border Regions, Section 14 of the Berlin Development Law, Section 4 of the Development Area Law, and pursuant to local tax laws in the host countries of our regional subsidiaries.

Interest-free and low-interest loans were adjusted to reflect present values by application of a uniform discount rate domestically and prevailing rates in foreign countries.

The development of fixed assets of the Consolidated Group is shown on pages 40 and 41. Additions to interests in associated companies include, in addition to contributions to equity capital and prorated earnings, the value of three newly-formed companies.

Retirements include prorated losses and dividends. In total, the book values of interests of associated companies were lower than the prorated equity.

Current assets

Inventories were valued at the lower of cost or market, or manufacture at the balance-sheet date. Costs of manufacture include direct costs and reasonable overhead.

In 1991, we introduced and applied for the first time principally the Lifo-valuation method at our domestic operations. When permitted by local tax laws, our foreign subsidiaries also applied this valuation method. The effect of this method on equity capital, finances and profitability is of secondary importance.

Inventories from internal sales are stated at cost of manufacture. Inherent risks of storage and distribution were provided for by write-downs. Additional downward adjustments were applied in cases of insufficient profitability and when production capacities were not fully utilized. Pursuant mainly to Section 80 of the Income Tax Regulations and also to local regulations, we depreciated 8.4 million DM. Non-scheduled depreciation on inventories totalled 0.7 million DM. Advance payments for inventories were applied to inventory values.

Accounts receivable and other assets were stated at nominal values minus deductions for

identifiable individual risks as well as general credit risks. Interest-free or low-interest receivables with maturities of more than one year were discounted.

Maturities:	Maturities of more than one year	
	1991 million DM	1990 million DM
Trade accounts receivable	14	9
Receivables from companies in which we hold financial interests	2	23
Other assets	417	342

Marketable securities included in current assets were valued at the lower of acquisition cost or market. With regard to potential future market fluctuation, we depreciated 1.7 million DM during the year.

Treasury stock: Robert Bosch Industrieanlagen GmbH, Stuttgart, holds a share of Robert Bosch GmbH, Stuttgart, with a nominal value of 23.0 million DM. This amount is equivalent to 2.88% of the capital stock of the parent company.

Equity capital

The subscribed capital stock of 800 million DM corresponds to the capital stock of Robert Bosch GmbH.

Surplus accounts consist of the following:

	1991 million DM	1990 million DM
Surplus accounts of Robert Bosch GmbH including transfer from current earnings of 225 (previous year: 225) million DM	2,477	2,252
Surplus for treasury stock	41	41
Other earned surplus	3,635	3,434
	6,153	5,727

Unappropriated earnings of the Consolidated Group are identical to those of Robert Bosch GmbH.

Liabilities

Accruals with valuation reserve portion were formed pursuant to Sections 6b and 52, paragraph 8 of the Income Tax Law, Section 31, paragraph 3 of the Berlin Development Law, Section 3 of the Law for the Promotion of the Economy of the Border Regions, Section 1 of the Developing Countries Law, Section 1 of the DDR Investment Law, Section 6 of the Development Area Law. Our foreign subsidiaries followed local regulations with respect to such risks.

In determining the size of accruals, we provided for all identifiable risks.

Pension accruals and similar liabilities were determined by application of actuarial principles and were discounted to reflect present or partial values. For domestic companies, we basically used a 6% discount rate, while regional companies used discount rates prevailing in the respective countries.

Liabilities were stated at the amounts owed.

Other liabilities include indebtedness to stock holders (Robert Bosch Stiftung GmbH) in the amount of 36.6 million DM.

Maturities:	Maturities of less than one year		Maturities of more than five years
	million DM 1991	million DM 1990	million DM 1991
Bonds	112		
Bank loans	902	1,360	310
Accounts payable trade	1,413	1,432	
Notes and acceptances	37	41	
Payables to affiliated companies	117	25	95
Payables to companies in which we own interests	40	25	
Other liabilities	1,027	1,047	367
	3,648	3,930	772

Of liabilities, 200 million DM were secured by mortgages and 35.9 million DM by other liens.

Included in the other liabilities are tax liabilities in the amount of 185 million DM (1990: 207 million DM) and liabilities pertaining to social benefits in the amount of 340 million DM (1990: 304 million DM).

Contingencies not included in the balance sheet nor as balance-sheet notes	million DM
Contingent liabilities from the issuance or transfer of notes	281
Including affiliated companies	1
Including secured by liens	3
Contingent liabilities from guarantees	446
Including affiliated companies	66
Contingent liabilities from warranties	75
Contingent liabilities for third-party liabilities	11

Other financial obligations of significance for an opinion on the financial condition do not exist.

Details to the consolidated profit and loss statement

Breakdown of sales 1991 sales by business sectors	million DM	%
Automotive equipment	16,608	49.4
Communications technology	7,920	23.6
Consumer goods	7,042	21.0
Capital goods	2,030	6.0
	33,600	100.0

1991 sales by regions	million DM	%
EC countries	25,870	77.0
Other European countries	2,522	7.5
America	3,308	9.8
Asia, Africa, Australia	1,900	5.7
	33,600	100.0

For social security and pensions we spent a total of 2.2 billion DM including 561 million for pensions (1990: 537 million DM).

Income from financial interests amounted to 11.7 million DM. Income from loans amounted to 7.9 million DM, including 0.1 million DM (1990: 0.1 million DM) from affiliates.

The results from associated companies include profits and losses as well as depreciation.

Other interest and similar income amounted to 458 million DM including 1.2 million (1990: 0.3 million DM) from affiliates. Of 310 million DM interest and similar expenses, 8.2 million DM are attributable to affiliated companies (1990: 9.5 million DM).

Expenses resulting from additions to accruals with valuation reserve portion are included in other operating expenses in the amount of 36 million DM. Income from the reversal of accruals with valuation reserve portion is included in other operating income in the amount of 116 million DM.

The impact of tax allowances on the profit for the fiscal year, as well as in former years, and the size of future burdens from the respective valuations are of secondary significance.

Additional details

In 1991, total compensation of the members of the Board of Management of Robert Bosch GmbH amounted to 10.0 million DM. Former members of the Board and their dependents received 5.5 million DM and members of the Supervisory Council 1.0 million DM.

Accruals for pension liabilities for former members of the Board of Management and their dependents amounted to 47.3 million DM.

Average number of employees during 1991 were as follows:

	Total	Including BSHG (prorated)
Factory workers	115,499	7,844
Salaried employees	59,591	3,768
Apprentices/ Trainees	6,408	210
	181,498	11,822

The members of the Supervisory Council and the Board of Management of Robert Bosch GmbH are listed on Page 63.

Shareholdings of Bosch Group Worldwide

A listing of the shareholdings of the consolidated Bosch Group will be deposited with the commercial registry of the Stuttgart Circuit Court.

Stuttgart, April 30, 1992

ROBERT BOSCH GMBH

The Board of Management

Auditor's opinion

The accounting and the consolidated statements, which we have audited in accordance with professional standards, comply with legal provisions. With due regard to the generally accepted accounting principles the consolidated financial statements give a true and fair view of the company's assets, liabilities, financial position and profit and loss. The management report to the consolidated financial statements is consistent with its content.

Stuttgart, April 30, 1992

Schitag
Schwäbische Treuhand-Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

Dörner
Wirtschaftsprüfer

Wolff
Wirtschaftsprüfer

Balance Sheet as of December 31, 1991

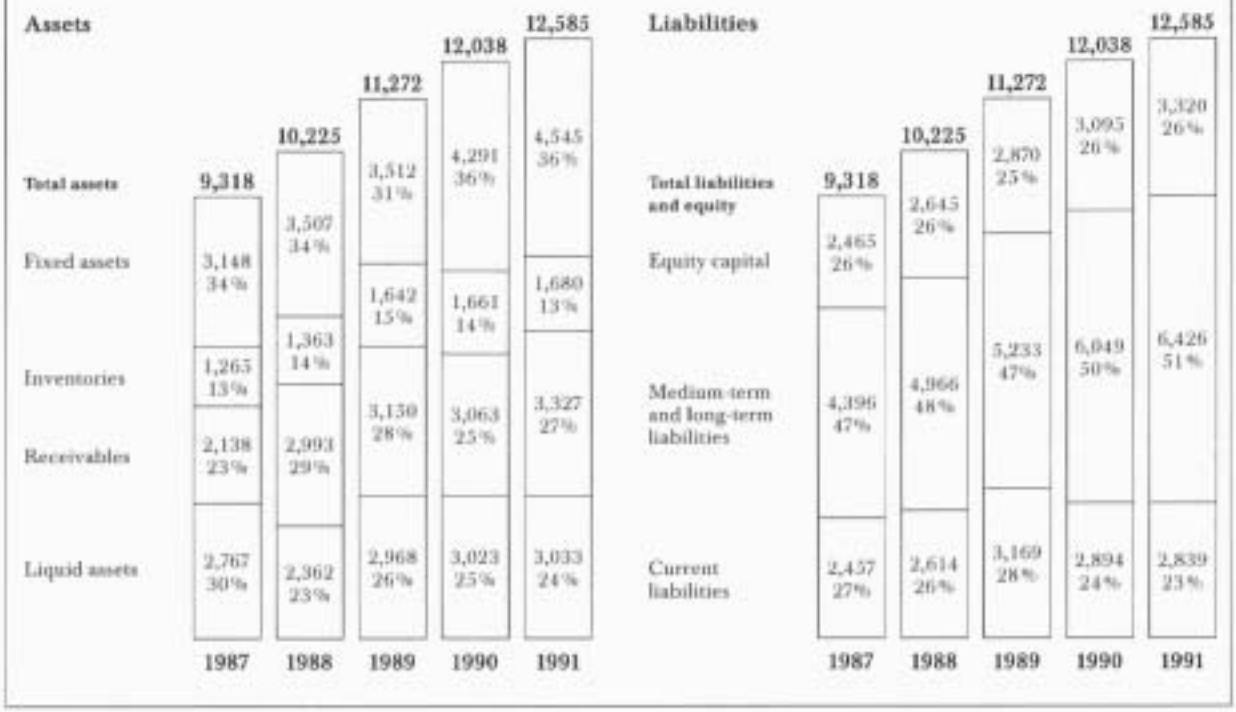
ASSETS	December 31, 1991 million DM	million DM	*December 31, 1990 million DM*
FIXED ASSETS			
Intangible fixed assets			
Concessions, patents, trademarks and similar rights and assets as well as licenses on such rights and assets	–		–
Tangible fixed assets			
Land, leasehold rights and buildings, including buildings on land owned by others	510.5		*516.9*
Production equipment and machinery	381.7		*375.2*
Other equipment, fixtures and furniture	1,251.3		*1,203.0*
Advance payments and construction in progress	228.0		*229.8*
	2,371.5		*2,324.9*
Financial investments			
Investments in affiliated companies	1,830.2		*1,707.3*
Other financial investments	226.5		*147.3*
Loans to companies in which interests are held	50.2		*49.1*
Other loans	66.2		*62.5*
	2,173.1		*1,966.2*
		4,544.6	*4,291.1*
CURRENT ASSETS			
Inventories			
Raw materials and supplies	437.1		*468.9*
Work in progress, uncompleted projects	442.8		*475.6*
Finished products and merchandise	894.8		*803.2*
Advance payments made	9.6		*6.8*
Advance payments received	–104.4		*–93.7*
	1,679.9		*1,660.8*
Accounts receivable and other assets			
Trade accounts receivable	1,793.5		*1,667.2*
Receivables from affiliated companies	955.9		*877.2*
Receivables from companies in which interests are held	100.7		*80.8*
Other assets	513.0		*472.7*
	3,363.1		*3,097.9*
Marketable securities	2,027.0		*2,020.9*
Cash on hand, in Federal Reserve Bank, postal checking accounts and cash in banks	956.3		*951.6*
		8,026.3	*7,731.2*
DEFERRED EXPENSES		14.4	*15.4*
		12,585.3	*12,037.7*

LIABILITIES	December 31, 1991		*December 31, 1990*
	million DM	million DM	*million DM*
EQUITY CAPITAL			
Capital stock	800.0		*800.0*
Earned surplus			
Legal reserve	80.0		*80.0*
Surplus appropriated for plant maintenance	845.0		*770.0*
Unappropriated surplus	1,552.0		*1,402.0*
	2,477.0		*2,252.0*
Unappropriated earnings	42.5		*42.5*
		3,319.5	*3,094.5*
ACCRUALS WITH VALUATION RESERVE PORTION		164.7	*229.1*
ACCRUALS			
Accrued pensions	3,171.0		*2,940.7*
Accrued taxes	85.2		*21.8*
Other accruals	4,577.4		*4,333.2*
		7,833.6	*7,295.7*
LIABILITIES			
Liabilities with banks	142.1		*181.4*
Accounts payable trade	212.1		*264.0*
Payables to affiliated companies	152.3		*201.6*
Payables to companies in which interests are held	15.4		*8.6*
Other liabilities	745.5		*762.7*
		1,267.4	*1,418.3*
DEFERRED INCOME		0.1	*0.1*
		12,585.3	*12,037.7*

Statement of Income for the period from January 1 to December 31, 1991

	1991 million DM	1991 million DM	*1990 million DM*
Sales		18,474.1	*17,523.9*
Increase/decrease in finished goods and work in progress inventories		10.0	*–5.3*
Other capitalized costs		68.2	*68.5*
Total operating performance		18,552.3	*17,587.1*
Other operating income		1,137.5	*1,241.8*
Costs of materials			
Raw materials, supplies and merchandise	–8,387.4		*–7,569.5*
Purchased services	–733.5		*–851.0*
		–9,120.9	*–8,420.5*
Personnel costs			
Wages and salaries	–4,633.9		*–4,425.3*
Social security, pension plans and support payments	–1,051.3		*–1,024.2*
		–5,685.2	*–5,449.5*
Depreciation of intangible and tangible fixed assets		–848.7	*–863.7*
Other operating expenses		–2,875.0	*–2,940.8*
Income from profit transfer agreements		128.8	*67.7*
Income from affiliated companies		112.0	*118.6*
Expenses from loss transfers		–75.2	*–2.9*
Income from long-term financial investments		3.7	*3.5*
Other interest and similar income		344.0	*330.2*
Amortization of financial investments and securities included in current assets		–342.7	*–300.5*
Interest and similar expenses		–93.4	*–150.7*
Income from ordinary activities		1,237.2	*1,220.3*
Taxes on income		–866.2	*–836.7*
Other taxes		–103.5	*–116.1*
Net income of the year		267.5	*267.5*
Transfer to surplus accounts			
for plant maintenance	–75.0		*–75.0*
unappropriated earned surplus	–150.0		*–150.0*
		–225.0	*–225.0*
Unappropriated earnings		42.5	*42.5*

Robert Bosch GmbH
Balance Sheet Structure 1987–1991 (million DM and in %)



1991 Development of Fixed Assets

	Cost of aquisition or manufacture as of Jan. 1, 1991 million DM	Additions million DM	Transfers million DM
Intangible fixed assets			
Concessions, patents, trademarks and similar rights and assets as well as licenses on such rights and assets	40.3	37.4	
Tangible fixed assets			
Land, leasehold rights and buildings, including buildings on land owned by others	1,195.6	28.1	31.3
Production equipment and machinery	1,793.7	208.0	33.7
Other equipment, fixtures and furniture	4,283.0	467.2	119.2
Advance payments and construction in progress	281.1	197.8	−184.2
	7,553.4	901.1	
Financial investments			
Investments in affiliated companies	3,705.4	386.4	30.7
Other financial investments	369.0	147.4	−30.7
Loans to companies in which interests are held	49.1	5.7	
Other loans	62.6	15.3	
	4,186.1	554.8	
	11,779.8	1,493.3	

Retirements million DM	Cost of acquisition or manufacture as of Dec. 31, 1991 million DM	Depreciation cumulative to Dec. 31, 1991 million DM	Net book value as of Dec. 31, 1991 million DM	Depreciation current year million DM	Write-ups current year million DM
40.3	37.4	37.4	–	37.4	
2.1	1,252.9	742.4	510.5	61.6	0.1
118.3	1,917.1	1,535.4	381.7	210.3	
170.5	4,698.9	3,447.6	1,251.3	502.2	
2.1	292.6	64.6	228.0	37.2	3.2
293.0	8,161.5	5,790.0	2,371.5	811.3	3.3
4.2	4,118.3	2,288.1	1,830.2	263.9	
	485.7	259.2	226.5	67.7	
4.6	50.2		50.2		
11.7	66.2		66.2		
20.5	4,720.4	2,547.3	2,173.1	331.6	
353.8	12,919.3	8,374.7	4,544.6	1,180.3	3.3

Statement of Changes in Financial Position in 1991

Source of Funds	million DM	Application of Funds	million DM
Financing from internal sources		*Increase in Funds*	
Decrease in assets			
Tangible and intangible fixed assets	891	Tangible and intangible fixed assets	938
Financial investments	348	Financial investments	555
	1,239	Inventories	19
		Receivables and other assets, and deferred expenses	264
Other internal financing			
		Cash at banks, securities	10
Transfers to surplus accounts	225		1,786
Increase in accruals	537		
1991 dividend	43	*Repayment of debts*	
	805	Liabilities	151
		1990 dividend	43
			194
		Decrease of accruals with valuation reserve portion	64
	2,044		2,044

1991 Added Net Value

Source of Added Net Value	1991 million DM
Sales	18,474
– Increase in work in progress and finished-goods inventories	10
+ Other costs capitalized	68
= Total operating performance	18,552
+ All other income	1,726
= Total company performance	20,278
– Costs excluding depreciation	
Materials	9,121
Expenditures from loss transfers	75
Other operating expenses	2,875
= Added net value before depreciation	8,207
– Cost of depreciation	
Depreciation of intangible and tangible fixed assets	849
Write-offs of financial investments and securities included in current assets	343
= Added net value (after depreciation)	7,015

Distribution of Added Net Value	1991 million DM	%
Added Net Value	7,015	100.0
Thereof to employees		
Wages and salaries, social-security levies, pension plans and support payments	5,685	81.1
to Government		
taxes	969	13.8
to Company		
surplus accounts	225	3.2
to Lenders		
interest	93	1.3
to Shareholders		
dividends	43	0.6

General remarks

The financial statements of Robert Bosch GmbH for the fiscal year 1991 conform in classification and valuation to the provisions of the German Commercial Code.

In order to improve the understanding and synopsis of the financial statements, we included comments pertaining to certain items of the balance sheet as well as the profit and loss statement.

The profit and loss statement follows the format of the total cost method.

Fixed assets

Fixed assets are stated at cost of purchase or manufacture. Depreciation was based on established guidelines. Whenever permitted by tax laws, we applied accelerated depreciation methods. Straight-line depreciation was used when resulting depreciation amounts were higher. Shift differentials were added to straight-line depreciation rates when equipment was used in multishift operations. Items of minor value were fully depreciated in the year of acquisition.

We made use of extraordinary depreciation in the amount of 333 million DM on such capital assets, which at the balance-sheet date had to be adjusted to lower values.

We applied depreciation in the amount of 79.4 million DM directly to the purchase cost of capital assets pursuant to the tax regulations of Section 3 of the Law for the Promotion of the Economy of the Border Regions, Section 6b of the Income Tax Law, Section 14 of the Berlin Development Law, Section 4 of the Development Area Law, and Section 82a of the Income Tax Regulations.

Interest-free and low-interest loans were discounted to reflect their present values. We retained, pro rata, lower valuations when discounts at the date of issue were lower.

The 1991 development of fixed assets is presented on pages 52 and 53.

Inventories

Raw materials, supplies and merchandise were valued at the lower of average purchase cost or market.

The valuation of work in progress and finished goods was based on cost of production pursuant to Section 255, paragraph 2 of the Commercial Code to the extent that they had to be capitalized in accordance with the German Tax Laws. The Lifo valuation method was applied for the first time in 1991. Its impact on property, finances and profitability was insignificant. We provided for risks inherent with warehousing and distribution by grouping inventories into different valuation categories. In addition, we recognized future valuation changes through appropriate deductions. When production capacities were not fully utilized and also in cases of diminishing returns from certain products, we applied special write-downs.

We depreciated 1.9 million DM pursuant to Section 80 of the Income Tax Regulations.

Advance payments for orders received were directly applied against inventories.

Accounts receivable, other assets, marketable securities

Accounts receivable and other current assets were valued at acquisition costs. We provided for all recognizable individual risks and general credit risks by corresponding write-downs. Dated accounts receivable and notes were discounted to represent present values. Accounts receivable in foreign currencies were stated at the lower of the exchange rate at acquisition or balance-sheet dates.

The portfolio of securities consisted mostly of stock-exchange listed debentures. Securities were valued at the lower of acquisition cost or stock-exchange prices in application of existing valuation principles.

Receivables from shareholders (Robert Bosch Industrieanlagen GmbH) are included with receivables from affiliated companies in the total

amount of 455 million DM. Accounts payable to shareholders (Robert Bosch Stiftung GmbH) in the amount of 36.6 million DM are included with other liabilities.

Maturities:	Maturities of more than one year	
	1991 million DM	1990 million DM
Trade accounts receivable	5	4
Receivables from affiliated companies	489	450
Other assets	385	316

Accruals with valuation reserve portion

These amounts were computed pursuant to Section 3 of the Law for the Promotion of the Economy of the Border Regions, Section 6b of the Income Tax Law, Section 1 of the Developing Countries Tax Law, and Section 1 of the DDR Investment Law.

Accruals

The size of the accruals provides for all identifiable risks.

Pension accruals were computed in full by application of actuarial principles at their fractional or present values. For the most part, valuations were based on an interest factor of 5.5%. Additions were also computed by application of this 5.5% interest factor.

Other accruals provide for obligations in the areas of sales, personnel and social benefits, obligations of foreign subsidiaries and other risks.

For deferred maintenance we included accruals for expenditures which have to be spent within a period of 4 to 12 months after the close of the fiscal year.

Liabilities

All liabilities are stated at amounts owed. Liabilities in foreign currencies are stated at the higher of exchange rates at the date of origination or at balance-sheet date.

Liabilities in the amount of 48.4 million DM were secured by mortgages.

Included with other liabilities are tax liabilities in the amount of 35.3 million DM (1990: 64.4 million DM) as well as liabilities for social benefits in the amount of 223 (1990: 188) million DM.

Maturities:	Maturities		
	one year or less		more than five years
	1991 million DM	1990 million DM	1991 million DM
Bank loans	30	76	24
Accounts payable trade	212	264	
Payables to affiliates	152	202	
Payables to companies in which we hold interests	15	9	
Other liabilities	332	384	206
	741	935	230

Contingencies

Contingencies not included in the balance sheet nor mentioned in the balance-sheet notes (million DM)	
Contingent obligations from issuance or transfer of notes	109
Contingent obligations from guarantees	476
including affiliated companies	185
Contingent liabilities from warranties	75

Robert Bosch GmbH, together with Siemens AG is a shareholder in the holding company of Bosch-Siemens Hausgeräte GmbH. This holding company is governed by civil law.

Between this holding company and Bosch-Siemens Hausgeräte GmbH exists a control and profit-transfer agreement.

Other financial obligations of any significance for an opinion on the financial statements do not exist.

Details to the profit and loss statement

For social security and similar benefits and for pensions and support payments, we expensed 1,051 million DM including 350 million DM for pension payments (1990: 358 million DM).

Income from affiliated companies amounted to 112 million DM. This amount includes 100 (1990: 110) million DM from companies of the consolidated group.

Other interest and similar income amounted to 344 million DM including 6.4 (1990: 8.2) million DM from affiliated companies. Of interest and similar expenses in the amount of 93.4 million DM, 45.4 (1990: 55.1) million DM were attributable to affiliated companies.

Expenditures for provisions for accruals with valuation reserve portion in the amount of 0.8 million DM are included with other expenses. Income from reversal of accruals with valuation reserve portion amounting to 65.2 million DM are included with other operating income.

The application of tax allowances and their impact on profits of the current fiscal year as well as in former years, and also the size of future burdens from such valuations, are of secondary importance.

Other details

Average number of employees during 1991:	
Factory workers	49,311
Salaried employees	21,822
Apprentices/Trainees	2,822
	73,955

Breakdown of sales:

1991 sales by business sectors:	million DM	%	1991 sales by regions:	million DM	%
Automotive equipment	13,926	75.4	EC countries	15,312	82.9
Communications technology	871	4.7	Rest of Europe	1,302	7.0
Consumer goods	1,902	10.3	America	989	5.4
Capital goods	1,693	9.2	Asia, Africa, Australia	871	4.7
Others	82	0.4			
	18,474	100.0		18,474	100.0

Aggregate compensation of the members of the Board of Management amounted to 9.3 million DM in 1991. Former members of the Board of Management and their dependents received 5.5 million DM and members of the Supervisory Council 1.0 million DM.

Accruals for pension liabilities to former members of the Board of Management and their dependents amounted to 47.3 million DM.

Members of the Supervisory Council and of the Board of Management are listed on page 63.

Shareholdings of Robert Bosch GmbH

Except for insignificant interests, a listing of the shareholdings of Robert Bosch GmbH is included on pages 60 and 61.

A complete listing of the shareholdings of the consolidated Bosch Group will be submitted to the commercial registry of the Stuttgart Circuit Court.

Stuttgart, March 30, 1992

ROBERT BOSCH GMBH

The Board of Management

Auditors opinion

The accounting and the annual financial statements, which we have audited in accordance with professional standards, comply with legal provisions. With due regard to the generally accepted accounting principles the annual financial statements give a true and fair view of the company's assets, liabilities, financial position and profit and loss. The management report is consistent with the annual financial statements.

Stuttgart, March 30, 1992

Schitag
Schwäbische Treuhand-Aktiengesellschaft
Wirtschaftsprüfungsgesellschaft
Steuerberatungsgesellschaft

Dörner
Wirtschaftsprüfer

Wolff
Wirtschaftsprüfer

Shareholdings of Robert Bosch GmbH (as of December 31, 1991)

Name and location of the company	Currency	Exchange rate 100 units of local currency	Owned[1] %	Equity Capital millions in local currency	Profit or Loss millions in local currency
Germany					
Anlagenvermietung GmbH, Stuttgart	DM		50	16.6	3.0
ANT Nachrichtentechnik GmbH, Backnang	DM		100[2]	337.9	60.0
ANT Nachrichtentechnik Radeberg GmbH, Radeberg	DM		100	10.0	EAV[3]
Blaupunkt-Werke GmbH, Hildesheim	DM		100	183.4	EAV
Bosch-Siemens Hausgeräte GmbH, Munich[4]	DM		50	762.7	85.2
Bosch Telecom Öffentliche Vermittlungstechnik GmbH, Eschborn	DM		100	39.7	12.7
BTS Broadcast Television Systems GmbH, Darmstadt	DM		25	92.1	EAV
Hans Feierabend GmbH, Einbeck	DM		40	7.0	–3.3
MB Video GmbH, Peine	DM		35	37.0	5.0
MotoMeter AG, Leonberg[4]	DM		97.8	28.5	–12.5
Robert Bosch Elektronik GmbH, Salzgitter	DM		100	22.8	EAV
Robert Bosch Elektrowerkzeuge GmbH, Sebnitz	DM		100	14.7	EAV
Robert Bosch Fahrzeugelektrik Eisenach GmbH, Eisenach	DM		96.8	40.9	EAV
Robert Bosch Industrieanlagen GmbH, Stuttgart	DM		100	86.3	EAV
Signalbau Huber AG, Munich	DM		40	74.2	4.8
Teldix GmbH, Heidelberg	DM		100	19.7	EAV
Telenorma GmbH, Frankfurt (M)[4]	DM		100	502.0	47.1
Foreign Countries					
EUROPE					
Belgium					
Robert Bosch Produktie NV, Tienen	B.Fr.	4.86	100	2,648.8	547.0
NV Robert Bosch SA, Anderlecht (Brussels)	B.Fr.	4.86	100	650.4	31.4
Denmark					
Robert Bosch A/S, Ballerup	D.Kr.	25.67	100	167.5	18.8
Finland					
Robert Bosch Oy, Helsinki	Markka	36.71	100	12.0	–4.9
France					
Robert Bosch (France) SA, Saint-Ouen (Paris)[4]	F.Fr.	29.27	100	1,707.2	28.1
Great Britain					
Robert Bosch Ltd, Denham	£	284.30	100	103.3	3.3
Italy					
Robert Bosch SpA, Milan	Lit	0.13	100	106,164.5	9,588.9
Netherlands					
Robert Bosch Verpakkingsmachines BV, Weert	N.FL.	88.75	100	17.2	1.1
Blaupunkt BV, Amsterdam	N.FL.	88.75	100	16.1	0.0
Norway					
Robert Bosch A/S, Trollaasen (Oslo)	N.Kr.	25.40	100	84.7	25.3
Austria					
Robert Bosch AG, Vienna	ö.S.	14.21	100	601.4	12.2
Portugal					
Robert Bosch Lda, Lisbon	P.Esc.	1.13	100	1,738.4	253.7
ARP – Auto-Radio Portuguesa Lda, Braga	P.Esc.	1.13	70	1,585.2	35.7
Blaupunkt Electronica Lda, Braga	P.Esc.	1.13	100	190.1	12.3
Vulcano-Termo-Domésticos SA, Aveiro	P.Esc.	1.13	90	1,493.8	431.1

1) Directly and indirectly held shares
2) A subsidiary of Allianz AG Holdings owns an 18% share of ANT
3) EAV = Profit and loss transfer agreement
4) Consolidated figures of this company

Shareholdings of Robert Bosch GmbH (as of December 31, 1991)

Name and location of the company	Currency	Exchange rate 100 units of local currency	Owned[1] %	Equity Capital millions in local currency	Profit or Loss millions in local currency
Sweden					
Robert Bosch AB, Kista (Stockholm)	S.Kr.	27.38	100	65.6	1.3
AB ROBO, Linköping	S.Kr.	27.38	100	31.8	0.0
Switzerland					
Robert Bosch Internationale Beteiligungen AG, Zurich	S.Fr.	111.94	90	483.7	25.0
Robert Bosch AG, Zurich	S.Fr.	111.94	100	34.0	4.4
Scintilla AG, Solothurn	S.Fr.	111.94	84.8	250.0	31.5
Spain					
Robert Bosch SA, Madrid	S.Pts	1.57	100	23,932.5	3,318.6
Turkey					
Robert Bosch Motorlu Araçlar Yan Sanayi ve Ticaret AS, Bursa	T.L.	0.03	80	70,523.7	10,980.1
AMERICA					
Argentina					
Robert Bosch Argentina SA, Buenos Aires	A	152.00	100	1.8	0.7
Brazil					
Robert Bosch Ltda, Campinas[2]	Cr.$	0.14	100	278,377.3	4,266.8
WAPSA Auto Peças Ltda, São Paulo	Cr.$	0.14	100	43,062.5	–2,577.9
Canada					
Robert Bosch Inc., Mississauga	Can.$	131.00	100	6.9	0.0
Mexico					
Robert Bosch SA de CV, Toluca	Mex.$	0.05	93.3	169,383.8	14,553.7
United States of America					
Robert Bosch Corporation, Broadview, IL[2]	US$	151.60	100	576.2	–23.0
Vermont American Corporation, Louisville, KY[2]	US$	151.60	50	115.9	5.7
ASIA					
India					
Motor Industries Co Ltd (MICO), Bangalore	ind.Rs.	6.12	51	1,292.9	154.9
Japan					
Bosch K.K., Tokyo	¥	1.22	100	6,738.3	–236.3
Nippon ABS Ltd, Ohta-Ku, Tokyo	¥	1.22	50	8,203.8	613.3
Malaysia					
Robert Bosch (Malaysia) Sdn Bhd, Penang	M.$	55.77	100	45.9	6.6
Singapore					
Robert Bosch (South East Asia) Pte Ltd, Singapore	S.$	93.48	70	20.6	3.2
South Korea					
Doowon Precision Industry Co Ltd, Seoul[3]	Won	0.20	20	12,865.1	1,017.5
KEFICO Corporation, Kunpo-Shi	Won	0.20	25.5	29,345.0	8,022.6
AFRICA, AUSTRALIA					
South Africa					
Robert Bosch (Pty) Ltd, Johannesburg[2]	S.A.R.	55.41	64	76.4	2.6
Australia					
Robert Bosch (Australia) Pty Ltd, Clayton (Melbourne)	A.$	114.90	100	77.8	–7.8

1) Directly and indirectly held shares
2) Consolidated figures of this company
3) formerly: Korea Diesel industries Co Ltd, Seoul

Supervisory Council Report

In its sessions, the Supervisory Council concerned itself mainly with the progress of business, personnel deployment, financial conditions, capital investments, joint ventures, and new technical developments.

In addition to such sessions, the Supervisory Council was informed by written monthly reports from the Board of Management on the company's situation and progress. Furthermore, the Supervisory Council was informed of special events by circular letter.

Schitag, Schwäbische Treuhand-Aktiengesellschaft, Stuttgart, audited the accounting records, the financial statements, and the situation report. The auditors gave their unqualified opinion in all cases. Following its own investigation, the Supervisory Council concurs without reservation with the findings, and recommends that the shareholders approve the financial statements and follow the application of net income proposed by the Board of Management.

On September 30, 1991, Mr. Paul Offenhäußer, having served as employee representative of supervisory personnel since 1978, and having reached the age limit, withdrew from the Supervisory Council.

He was replaced by Mr. Kurt Angstenberger, effective October 1, 1991.

At the end of the meeting on April 28, 1992, Dr. Ralf Krüger, who was also an employee representative, withdrew from the Supervisory Council at his own wish. Following a suggestion from Robert Bosch GmbH and supported by the Metal Trade Union, Mr. Joachim Stöber was approved as his successor by the legal authorities. The Supervisory Council wishes to thank both Mr. Offenhäußer and Dr. Krüger for their constructive cooperation.

Members of the Board of Management, Dr.-Ing. Joachim Koch and Dr. rer. nat. Friedrich Scholl will retire on June 30, 1992. The Supervisory Council wishes to thank these gentlemen for their long-time and successful activity for the Company.

Effective January 1, 1992, Dr. rer. pol. Friedrich Schiefer was elected Full Member of the Board of Management. As of July 1, 1992, Messrs. Dr.-Ing. Martin Sälzer and Hubert Zimmerer will become Associate Members of the Board of Management.

Stuttgart, May 1992

For the Supervisory Council
Dr.-Ing. Wolfgang Eychmüller
Chairman

Supervisory Council

Dr.-Ing. Wolfgang Eychmüller, Ulm/Donau
Chairman
Chairman of the Board of Management of Wieland-Werke AG

Ludwig Vogt, Litzendorf-Pödeldorf
Deputy Chairman
Chairman of the Shop Council of the Bamberg Plant and Member of the Joint Shop Council of Robert Bosch GmbH as well as of the Combined Shop Council

Dr. jur. Peter Adolff, Stuttgart
Member of the Board of Management of Allianz Versicherungs-Aktiengesellschaft

Knut Angstenberger, Stuttgart
Department Manager at the Feuerbach Plant of Robert Bosch GmbH
effective Oct. 1, 1991

Rudolf Baron, Sibbesse
Chairman of the Shop Council of the Hildesheim Plant and Member of the Joint Shop Council of Blaupunkt-Werke GmbH

Walter Bauer, Kohlberg
Chairman of the Shop Council of the Reutlingen Plant and Deputy Chairman of the Joint Shop Council of Robert Bosch GmbH as well as of the Combined Shop Council

Hans Beuttler, Ditzingen
Deputy Chairman of the Shop Council of the Feuerbach Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Rudolf Bley, Immenstadt
Deputy Chairman of the Shop Council of the Blaichach Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Dr.-Ing. Konrad Eckert, Stuttgart
Former Member of the Board of Management of Robert Bosch GmbH

Dr. jur. Robert E. Ehret, Frankfurt/Main
Former Member of the Board of Management of Deutsche Bank AG

Hans-Henning Funk, Hildesheim
Chairman of the Shop Council of the Hildesheim Plant and Member of the Joint Shop Council of Robert Bosch GmbH

Dr. rer. pol. Johan M. Goudswaard, Wassenaar/Netherlands
Former Deputy Chairman of the Board of Directors of Unilever NV

Gudrun Hamacher, Frankfurt/Main
Managing Member of the Board of Directors of the Trade Unions of the Metal Industry

Jörg A. Henle, Essen
Chairman of the Board of Management of Klöckner & Co. Aktiengesellschaft

Dr. jur. Robert Holzach, Zumikon/Switzerland
Honorary President of Union Bank of Switzerland

Dr. rer. pol. Ralf Krüger, Kronberg
Former Member of the Board of Management of the Bank für Gemeinwirtschaft Aktiengesellschaft
(until April 28, 1992)

Prof. Gero Madelung, Munich
Technical University Munich, Chair of Aviation Technology

Paul Offenhäußer, Heimsheim
Department Manager at the Feuerbach Plant of Robert Bosch GmbH
(until September 30, 1991)

Prof. Dr. rer. nat. Hans-Joachim Queisser, Stuttgart
Director at the Max-Planck-Institut für Festkörperforschung

Walter Riester, Stuttgart
District Manager of the Stuttgart District of the Trade Unions of the Metal Industry

Kurt Schips, Gerlingen
Former Member of the Board of Management of Robert Bosch GmbH

Joachim Stöber, Frankfurt/Main
Secretary of the Board of Directors of the Trade Unions of the Metal Industry
effective April 28, 1992

Management

Members of the Board of Management

Marcus Bierich
Chairman

Günter Bensinger

Hermann Eisele

Karl Gutbrod

Wolfgang Hugo

Joachim Koch
until June 30, 1992

Hansjörg Manger

Friedrich Schiefer
effective January 1, 1992

Friedrich Scholl
until June 30, 1992

Hermann Scholl

Herbert Weber

Associate Members of the Board of Management

Clemens Börsig

Heiner Gutberlet

Rainer Hahn

Martin Sälzer
effective July 1, 1992

Hubert Zimmerer
effective July 1, 1992

General Counsel

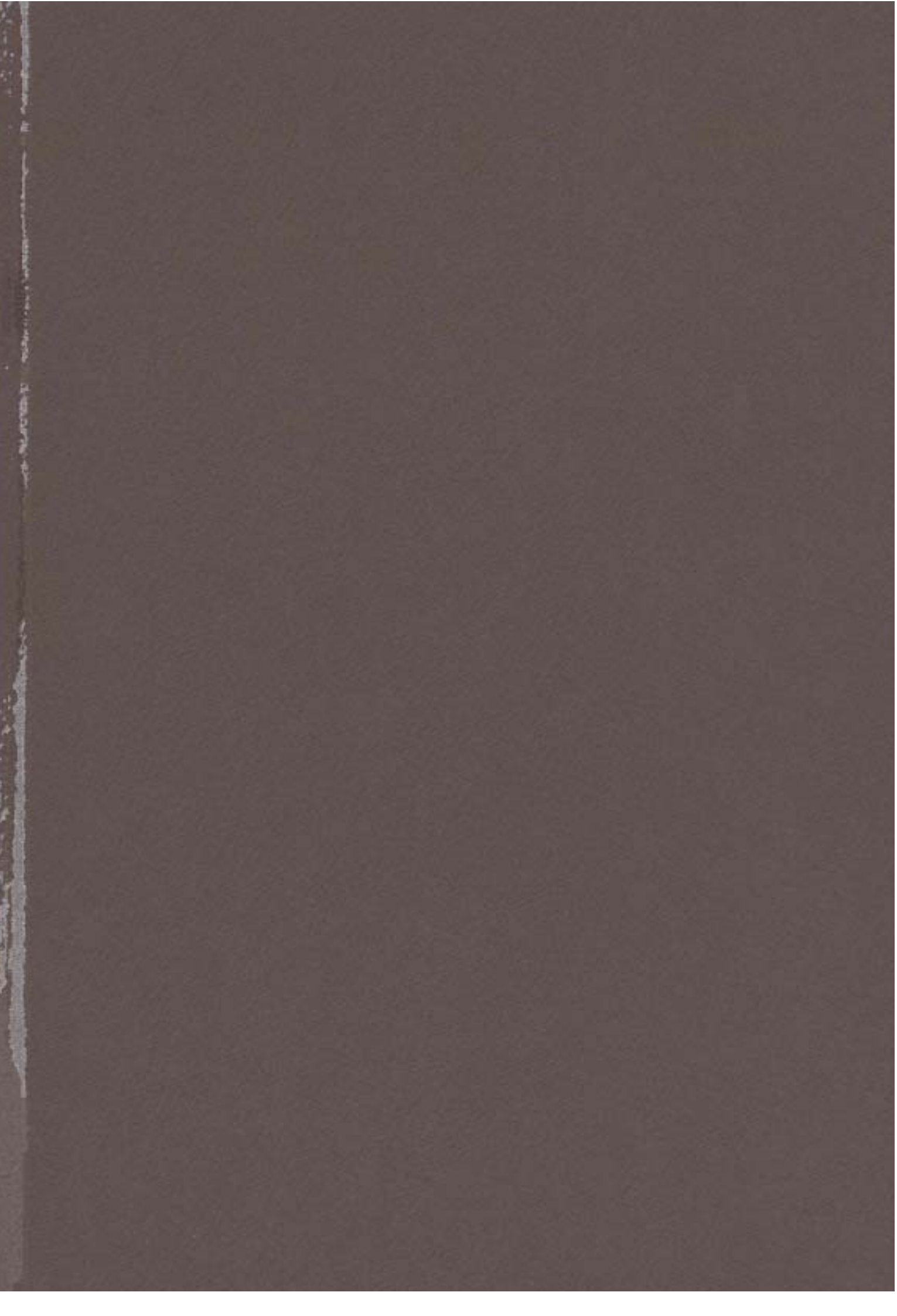
Hans Dieter Mosthaf

Ten Year Statistics

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	Mio ECU 1991[1])
Sales											
Worldwide Bosch Group	13,812	16,126	18,373	21,223	23,807	25,365	27,675	30,588	31,824	33,600	16,384
Foreign share as a percentage of sales	56	50	53	54	50	50	51	52	51	48	
Domestic Bosch Group	10,229	12,380	14,158	16,121	19,573	20,832	22,491	24,452	25,776	27,467	13,393
Export share as a percentage of sales	40	35	39	39	39	39	38	39	38	35	
Robert Bosch GmbH	8,547	9,042	10,653	12,474	13,265	14,261	15,101	16,623	17,524	18,474	9,008
Expenditures for research and development											
Worldwide Bosch Group	753	883	977	1,097	1,262	1,425	1,640	1,803	2,042	2,144	1,045
as a percentage of sales	5.5	5.5	5.3	5.2	5.3	5.6	5.9	5.9	6.4	6.4	
Domestic Bosch Group	703	827	906	1,017	1,172	1,321	1,500	1,625	1,879	1,957	954
as a percentage of sales	6.9	6.7	6.4	6.3	6.0	6.3	6.7	6.6	7.3	7.1	
Investments in tangible fixed assets											
Worldwide Bosch Group	748	895	1,129	1,406	1,813	2,015	1,937	2,064	2,790	2,273	1,108
including domestic	489	626	789	1,031	1,407	1,576	1,390	1,259	1,708	1,464	714
including foreign	259	269	340	375	406	439	547	805	1,082	809	394
as a percentage of sales	5.4	5.6	6.1	6.6	7.6	7.9	7.0	6.7	8.8	6.8	
as a percentage of depreciation	119	117	134	139	145	142	128	128	162	126	
Depreciation on tangible fixed assets											
Worldwide Bosch Group	631	765	844	1,009	1,254	1,416	1,511	1,607	1,725	1,799	877
Employees – annual average											
Worldwide Bosch Group	112,154	127,992	131,882	140,374	158,142	161,343	165,732	174,742	179,636	181,498	
including domestic	71,047	86,574	89,230	94,422	109,604	111,046	113,146	116,644	117,549	116,811	
including foreign	41,107	41,418	42,652	45,952	48,538	50,297	52,586	58,098	62,087	64,687	
Personnel expenses											
Worldwide Bosch Group	4,918	5,877	6,563	6,983	8,139	8,782	9,277	10,202	10,718	11,403	5,560
Key figures from financial statements											
Total assets	9,870	12,609	14,073	15,117	16,770	18,181	20,301	22,205	23,544	24,247	11,912
Equity capital	3,228	3,725	4,377	4,664	5,177	5,623	6,174	6,668	7,050	7,471	3,670
as a percentage of total assets	33	30	31	31	31	31	30	30	30	31	
Net income for the year	181	242	446	402	454	825	554	626	560	540	265
Unappropriated earnings	34	37	40	44	40	43	43	43	43	43	21

Values in million DM

[1]) Conversion of DM to ECU
The 1991 DM values in the Ten Year Statistics have been converted to ECU. Balance-sheet figures and net earnings were converted at DM/ECU exchange rates at year end (DM 0.49127 in 1991). Figures of the Income Statement and additions to fixed assets were valued at annual average exchange rates (DM 0.48762 in 1991).



BOSCH

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