

Department to bring together the areas of Economic Studies and Analysis, Strategic Planning (now raised to the status of General Sub-department), Subsidiaries and Holdings, and Corporate Relations and Communications. A General Resources Department was also set up, integrating the areas of Human Resources, Accounts and Control and Data Processing.

### *Financial performance*

Telefónica's financial performance in 1990 can be considered as on the whole positive. Our net income was 75,788 million pesetas, 10.0% up on 1989. Cash flow generated reached 344,906 million pesetas, an increase of 14.0% over the previous year.

Earnings per share stood at 81.8 pesetas, and cash flow per share at 372.1 pesetas, representing an annual growth of 9.8% and 13.8% respectively.

These satisfactory results came in a year in which the investment drive initiated in 1988 reached its peak, with capital expenditure in fixed assets rising to 703,697 million pesetas, an all-time high for Telefónica. This exceptional volume of investment obliged Telefónica to rely heavily on external financing, and this was reflected in the financial ratio trends.

## **T**ELEPHONE SERVICE

During 1990 there were 1,444,556 telephone line applications, representing a slight fall of 2.2% over the previous year. It is significant, however, that out of the total number of requests recorded, 127,611 were for Ibercom integrated business communications lines, an increase of 27.3% over 1989.

As for average usage per line, there was a 2.3% growth in 1990, compared with 5.1% the previous year. This reflected the slower rate of growth of the Spanish economy during last year.

At year-end, the basic telephone network had 12,602,640 local lines in service, representing a rise of 6.8% over 1989, and a telephone density of 31.9 lines per 100 inhabitants. In addition, there were 255,490 Ibercom lines in service at the end of 1990, 75.1% up on the previous year.

### *Modernization*

During 1990 Telefónica installed 1,565,000 new subscriber lines, practically all of which were digital. Out of this total, over 300,000 were digital lines installed to replace dismantled lines, clear evidence of the company's effort to modernize the network.

By the end of 1990, there were 2,311,000 trunk lines in transit exchanges, 26.2% more than at the end of 1989. Digitization also rose from 47.4% to 59.6%, signifying a considerable contribution to the improvement of the service.

The number of trunk lines in international exchanges at the end of 1990 was 65,100, 33.4% up on the previous year, with 51.1% digitization.

Throughout 1990, switching exchanges with the latest technology were incorporated into the three existing systems: 1240, AXE, and 5ESS. Work began on the modernization process for analog exchanges, aimed at replacing their control systems with electronic registers. In addition, guidelines were laid down for the integration of the Spanish network's dialling systems into a common system for all the EEC countries. The first step in this direction was the choice of the number 112 as the emergency services number throughout the European Community. The first city to adopt this number will be Barcelona, coinciding with its hosting of the 1992 Olympic Games.

The extension work on the Madrid-Alcobendas and Barcelona-Castellbisbal international exchanges was completed, and the plans for the infrastructure of the new Sevilla-Pineda international exchange were laid down.

1990 also saw a major improvement in international land communications with neighbouring countries. New digital trunk line services came into operation with France, via the Gerona-Perpignan optical fibre cable, with an initial capacity of 7,680 64Kbit/s basic circuits, and with Portugal, via the Cáceres-San Mamede digital radio trunk line, with capacity for 1920 64Kbit/s basic circuits. A radio trunk line with the same technical specifications as the latter was laid between Barcelona and Andorra.

### *Underwater optical communications*

During 1990 three digital underwater optical fibre cables came into operation: PENCAN 4, between the Iberian Peninsula and the Canary Islands; the Almeria-Roquetas link, and TRANSCAN 2, which links the two islands of Gran Canaria, Fuerteventura and Lanzarote. These three cables total 1,910 kms, bringing the total length of underwater optical fibre cables to 2,300kms at the end of the year.

### *Satellite communications*

1990 was a year of remarkable activity in this field, not only because of the new installations added to the plant already in service, but also because of the work carried out on the new Satellite Communications Complexes and Teleports in Barcelona and Seville, which should come into operation during 1991. Among the installations which have come into service, special mention should be made of the three telephony earth stations situated in the Canary Islands with the aim of linking the islands with each

other and with Europe via EUTELSAT. Two more earth stations specializing in TV services were incorporated into the satellite communication complexes in Buitrago and Guadalajara.

### *Public telephony*

By the end of 1990, the number of public telephone booths had reached 42,158, 1,551 more than in 1989. The year also saw the initial steps in the installation of the "Modular Telephone Set", which accepts electronic phone cards as well as coins. This will gradually replace the telephones now in use in public booths. These sets will provide the user with new facilities, such as volume control and the use of remaining credit on the card for further calls.

### *International communications*

Among the new international services introduced in 1990 we would like to highlight the SPAIN DIRECT service, which allows Spaniards travelling abroad to make direct reverse charge calls to an operator in Spain, who will put them through to the number they want. At the end of 1990 this service was operating from 18 countries.

### *Service expansion in the rural community*

During 1990 Telefónica continued to work intensively on the task of extending the telephone service to the rural community. The Autonomous Communities and provincial authorities, acting on the Royal Decree 2248/84, played an active role in cooperation agreements in this area. As a result, 892 new local zones were created and 1,574 public telephones installed, an increase of 30% and 25% respectively over last year's figures. As a result there were 189,434 new local subscribers, and another 118,591 rural inhabitants had access to a public telephone.

We also met the demand for telephones in areas outside local zones, with 19,325 requests being met in 1990, 31.2% up on 1989.

Capital expenditure on these improvements reached 27,200 million pesetas, the highest investment in the extension of the service in rural areas in Telefónica's history.

### *Regional programmes*

Telefónica plays an active role in the EC programmes promoted by FEDER with the aim of correcting imbalances between the regions. As for the STAR Programme, which aims to introduce advanced services in the most underdeveloped regions of the European Community, Telefónica's contributions included the installation of 79 digital switching exchanges, the laying of 1,721 kilometres of optical fibre cable, the





*Telefónica I+D employs over 700 researchers*

installation of 1,187 Iberpac data transmission ports, the Cellular Pan-European pilot scheme in Seville, and the installation of 103 IBERTEX centres and 5,799 fax terminals.

Telefónica took part for the first time in the regional development programmes in operation in the Canary Islands, Castilla-La Mancha, Castilla-León, Catalonia, Valencia, Extremadura, Galicia, Madrid and Murcia. In the cities of Ceuta and Melilla a major effort was made to modernize infrastructures. Finally, Telefónica drew up a cooperation agreement with the Autonomous Community of Valencia through a Programme of Installations and Advanced Networks (IRTA).

### *Service Quality*

1990 could be considered the year of consolidation of Telefónica's global quality management system, which was designed according to the guidelines laid down in the Strategic Plan. This quality management is geared towards the satisfaction of clients' needs. The improvement in quality was in large part due to better network performance, the network having been extended and modernized thanks to the investment drive, and efficiency levels of 98% were achieved in local calls, 96.5% in provincial calls and 95% in interprovincial calls. Our post-sales services attended to 130 million requests for information as well as 18 million repair calls, 75% of which were resolved in under 24 hours.

The Operation and Maintenance Structure, a group of systems whose purpose is to back up telephone network management and use, has been in operation in the province of Guadalajara since last November. We have also decided to install an Automatic Flow Management System, which in the event of breakdown would guarantee the immediate resumption of traffic by means of any transmission path available. A pilot scheme is expected to begin in 1991.

Phase I of the Dynamic Network Management Centre came into service, making possible the control and supervision of the AXE exchanges' domestic and international traffic. Other equipment commissioned was the Remote Data Circuit Tester used to diagnose and locate breakdowns in point-to-point analog circuits, and the Data Processing Services Tester, used to identify faults affecting the provision of these services.

We also widened the field of application of the service quality measuring equipment: the Remote Quality Unit (URCAL) and the Subscriber Lines Remote Tester (PDLA).

A decisive factor for the consolidation of service quality upgrading was the commissioning of the Dynamic Network Management Centre, which allows us to optimize flow.





*Satellite communications are breaking new ground day by day*

## *Terminals*

During 1990 we established our strategies for dealing with the liberalization of the main telephone set market, which will come into effect on July 1, 1991, completing the liberalization of the subscriber equipment market. At the same time, we widened the range of supplementary and complementary telephone equipment on offer and updated the multiline switchboard catalogue.

# **B**USINESS COMMUNICATIONS AND NEW SERVICES

## *Iberpac*

The IBERPAC packet-switching data transmission network continued to develop at a remarkable rate. The number of centres went up by 34 and a 16.6% increase in network capacity for all types of user connections was achieved. All the extensions were carried out on the IBERPAC X.25 network, which carries internationally standardized protocols.

At the same time, international access was extended from the IBERPAC network to 124 public networks in 67 countries. IBERPAC also supports a variety of new data communications services, such as the X.28 service, the X.32 top quality, high capacity service, and the Electronic Transfer of Funds and IBERTEX services.

During the year we also defined the technical specifications and began development work on the new IBERPAC-UNO service. This aims to meet the virtual private data network needs of our corporate clients.

## *Ibercom*

The IBERCOM service continued its upward trend, registering a 75% growth in the number of lines in service. As for its penetration in the market, IBERCOM is present in practically all our business clients' areas of activity. This is borne out by the fact that the number of IBERCOM clients at the end of 1990 was nearly double that of the previous year. Capacity also virtually doubled in 1990, both in lines and in front-end centres.

## *Ibermic*

Progress towards the implementation of a modern, efficient and fully digital infrastructure enabled us to double the number of IBERMIC centres in 1990. As a result, circuit installation capacity was boosted considerably, especially in the high-speed range (from 64Kbit/s upwards). We are thus able to meet the heavy demand on Telefónica for point-to-point rented circuits.