1. Networks and Services

In 1984, to meet the demand for the range of telecommunications services required within acceptable quality levels, prices and delivery dates, Telefónica reinforced its strategy of the previous year, concentrating on the priorities of expanding and modernising networks and services, and by perfecting operating procedures.

In order to meet these requirements more efficiently and to improve control over activities and objectives, the Company was restructured into areas better defined by their particular responsibilities.

Within this structure the General Networks division is responsible for Company network design, planning and management, together with the programming, coordination, design, installation and maintenance of individual facilities, both in Spain and abroad.

Service and Network development

Over the last year, Telefónica has steadily continued with the plant modernisation policy of previous years and has accelerated the introduction of modern digital switching and transmission systems, in order to build the powerful digital telecommunications structure that our country needs as a contribution to economic recovery. In this way the first steps have been taken towards the local and trunk networks of the future; the Spanish Economy is sensibly affectable by the telecommunications infrastructures of these sectors.

An Installations Plan was prepared in 1984 for the 1985-1988 period, covering and itemising all of the works necessary to achieve the infrastructure desired.

The services development policy has been strengthened and promoted in 1984, a critical year for the general implementation of services such as Teletex, Ibertex and Dataphone, facsimile terminal connection having been standardised via the Telefax service.

An expansion and development plan was prepared in 1984 for Ibercom, a new digital network capable of providing companies and institutions with the possibility of transmitting high-speed data together with teleprocessing and other complementary services. This will make Ibercom an efficient complement to Iberpac as part of the services Telefónica has targeted for business communications.

Plant growth

Trends in the main telephone parameters are given below as a statistical view of the Company's activity in 1984.

A total of 508,350 automatic telephone lines that is, subscriber trunk dialling (STD) or direct long-distance and local dialling, and 48,725 trunk (or long-distance) links were installed.

The trunk network was fitted with 1,155 channel groups, 504 transmission systems and 290 radio relay link transceivers.

In the Teleprocessing field, 7,153 gates with 422 TESYS-1 units and 4 TESYS-5 units have been installed for the IBERPAC Network. Furthermore, 289 pulse systems were installed.

For marine and overland mobile services 120 transmitters and receivers were installed.

The paging system was commissioned in Galicia, bringing the coverage of this service up to 18 provinces.

Local network pair cable for 1,913,916 km. was installed together with 2,317.2 km. of trunk pair cable and 277,6 km. of coaxial cable. All of these networks were laid in 2,757 km. of ducting and 7,295 km. of pole lines.

The international network was provided with 43 channel groups and 168 units were installed in the international switching centres. With respect to the international data transmission service (TIDA), expansion of coverage corresponds to improved quality and quantity of hardware, by installation of the TESYS equipment employing in-house technology, in the Madrid International Data Node to substitute existing lower performance equipment.

One of the major achievements of 1984 was the commissioning of the MERIDIAN Submarine Cable, which has involved a major design engineering effort in cable communications, covering 1,341 km. between Rodiles (Asturias) and Veurne (Belgium), of which 807 km. are cable buried in the seabed. This has provided a more economic and secure routing that directly connects Northern and Southern Europe, avoiding the overland routing of telephone links via Italy, France, and the United Kingdom.

Work has also continued on installing the Satellite Communications Earth Station at Guadalajara, which will operate in the European Eutelsat system, nearing completion at the end of 1984.

Furthermore, a major effort has been made to expand the IBERPAC network in 1984, inaugurating the X-25 connection in accordance with the latest international data transmission standards. This has enabled IBERPAC capacity to be tripled within a year, providing it with a structure capable of handling all packet switching data transmission demand that institutions and companies may generate in the immediate future.

The Company has invested 106,700 million pesetas in the plant expansion described. Of this, 5,800 million pesetas corresponds to investment in the MERIDIAN Submarine Cable.

Properties built to house telephone plant comprise 267 buildings, of which 263 are for switching exchanges and the remaining 4 for radio and transmission buildings.

Attention to rural areas

Under this heading, one hundred and fifty-two thousand automatic lines have been dedicated to rural areas, comprising 30% of all automatic lines installed. Of these, 9,000 substituted an identical number existing in exchanges that had run out of capacity to cover local demand; 106,000 have been assigned to cover demand from towns already provided with an automatic service. The remaining 37,000 lines have been allocated to expanding the automatic telephone service. It should be emphasised that the province of Valencia is now completely automatic, bringing the number of provinces with a completely automatic service to 14.

The allocation of lines to rural areas mentioned involves plant growth for this purpose of approximately 13%, while overall line growth has only been 4%.

The policy of bringing the telephone closer to rural areas has continued during 1984 on the basis of the official regulations in force. New Local Zones (NLZ) have been created in accordance with Ministry Order 27294/78, to provide a local service to population centres of over 300 inhabitants and Public Service Telephones (PST) have been installed in accordance with Royal Decree 1218/81 in villages of over 50 inhabitants. Furthermore, the installation of PST's has been strongly promoted in Asturias and Galicia in 1984, in accordance with the Special Plans for these areas, together with the Special Plan to provide PSTs in the province of Jaén.

A total of 117 NLZ's were brought into being in 1984, together with 924 PSTs for these reasons.

The Government promulgated a new Royal Decree for Rural Service Expansion at the end of 1984 that modifies the present approach for providing this service. A Service Expansion Plan is being drawn up on the basis of the new legal and regulatory framework.

Introduction of new technologies

In line with plant modernization policy, equipment based on new technology has been incorporated over the last year, providing a highly significant boost to the rapid evolution of communications technology.

In the field of switching, 46,000 lines for electronic systems and 127,000 lines for semielectronic systems were installed. Also, a further 10,000 conventional lines were converted to semielectronic technology, signifying a gain of 183,000 lines employing electronic and semielestronic technology, representing 36% of all automatic lines installed in the year. The total number of lines employing these new technologies at December 1984 amounted to 852,300, or 9% of the total installed automatic subscriber lines at that date.

Simultaneously, a total of 107,400 electromechanical rotary switch lines have been dismantled.

The introduction of electronics to trunk switching has continued at a much faster pace, as all new items of plant installed are electronic. The number of electronic trunk links installed during the year amounts to 29,442, or 60% of the total trunk links installed in the same period. At the year end, 5% of installed trunk links employed this state-of-the-art technology.

With respect to radio transmission, 24 digital 34 MBit/s transceivers have been installed. A 140 MBit/s coaxial cable system was also installed.

Simultaneously, collaboration has been provided for introducing optical-fibre cables into plant, and work continues on testing the cables installed in the Madrid and Zaragoza link networks and on the incorporation of new splicing techniques and tools to ensure correct implementation.

To enable network evolution to Integrated Digital Transmission and Switching (RDSI-Red Digital de Servicios Integrados), work has continued on developing subscriber network projects that facilitate conversion of the existing multi-network to the series network, incorporating the new equipment necessary.

The last year has seen the successful beginning of the installation in the IBERPAC network centres of the new TESYS-5 having a capacity of 12 packet switches, equivalent to the same number of the previous TESYS-1 equipment; the latter will still be used in switching centres of lesser importance or associated to TESYS-5 as local exchanges.

Network management

As mentioned previously, a total of 266 towns have been converted to automatic telephone service in 1984, their subscribers now enjoying an automatic service as compared to the previous operator-only facilities.

Also in 1984 three primary areas were incorporated into the international automatic service with continental scope, while 11 provincial capitals and two primary areas were integrated into the same service at full intercontinental level.

A total of 217,180 trunk circuits and 9,151 international circuits were in service at the end of 1984, 11,386, and 368, respectively, being activated during the year, increases of 5.5%, and 4.2%.

The telephone service showed solid growth throughout the year, having reached a figure of 2,565.8 million trunk calls and 78.4 million international calls, with growth rates over 1983 of 6.2% and 10.3%, respectively, with degrees of automation of 98.8% and 97.2%.

International TV transmissions, and those between the Iberian Peninsula and the Canary Islands amounted to 869, and 7,485 hours, respectively, totalling 2,766 programmes, an increase in relayed hours exceeding 16% as compared to 1983.

Service indicators: a relative improvement of 12.5% over the previous year, should be mentioned in the subscriber automatic service in 1984, which measured as a percentage of Plant faults, is 1.4%.

In order to facilitate traffic measurement and to monitor service quality the first 100 traffic and contingencies automatic monitors (TCAM) were equipped in the rural networks, together with subscriber service quality measuring equipment (SSQM) in Madrid, Zaragoza, Logroño and Orense.

In line with the sustained expansion of the network and international services that Telefónica provides, four countries (Malaysia, Pakistan, Sri Lanka and Zaire) have been incorporated into the network of direct telephone connections that at the end of the year covered 93 countries and territories, of which 55 are accessible by satellite. To the former must be added those that are reached via other countries, giving a total of 188 countries or territories with which telephone comunications are possible from Spain. By way of illustration, it should also be added that of the 9,151 international circuits previously mentioned, which cover practically the whole world, 96% are in automatic service and 10.6% via satellite.

With respect to the International Data Transmission Service (IDTS) it can be stated that with the expansion to eight new countries, 1984 has marked the final consolidation which, at the year end, accounted for 24 countries in Europe, America and Asia that, given their importance, make it possible to say that this service has a worldwide coverage.

Operation of the Inmsarsat system has also been improved, automating access by Telefónica operators to vessels anywhere in the world. At the end of 1984, there were 35 vessels under the Spanish flag provided with equipment to handle this system.

Telefónica has continued collaborating with NASA in back-up for their manned and unmanned space missions, facilitating the network to properly establish communications.